

**An Assessment of Connecticut's Tax Credit and Abatement
Programs**

**DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT
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Executive Summary

Every three years, the Department of Economic and Community Development completes an assessment of the various tax credit programs offered in the state. Based on our analysis, which is described in detail below, the tax credits that yield the biggest impact are those tied to job creation – that is, where companies need to create jobs in the state in order to be eligible for the credit. Understanding the impact of “entitlement” credits, where the amount of the credit is automatic based on certain activity the company undertakes, is challenging since companies do not report on activity outcomes. While we believe it is necessary to offer these credits for competitive reasons, it may be prudent to ask for more feedback from the companies to fully assess the value of the credits.

The Connecticut General Assembly mandated¹ that the Department of Economic and Community Development (DECD) shall, in consultation with the Department of Revenue Services (DRS), prepare a report every three years in order to assess the economic and fiscal impact of the state’s tax credit and abatement programs. In this report DECD examines these programs from 1995 through 2010 (some programs through 2012) using data supplied by DRS and the Office of Policy and Management (OPM).

This report analyzes tax credit programs that were in effect for calendar years 1995 through 2012 inclusive. Any credits that expired or were eliminated prior to 2007 were included in the 2010 report and are not mentioned in this update. The report contains historical and quantitative details about each tax credit, tax abatement and exemption program and the economic modeling we have used to obtain their economic and fiscal impacts. For each program that DECD administers, there is a recommendation for its disposition. For those credits that are not administered by DECD, we make general observations.

We have modified the methodology from what was used in the 2010 report to assess most of the credits in the study. We now use the full value of the associated investment (targeted activity) to calculate the range of activity related to the credit (instead of the amount of the claim as used before). Where a range of economic outcomes is presented, we present four scenarios; 0%, 20%, 50% and 100%, where the percentage times the *full investment* associated with the credit represents the range of induced target activity. This methodology is explained in more detail in Section 3.

The credits, abatements and exemptions that are claimed each year reduce the amount of revenue available to the state. In lieu of tax increases to balance the budget and to reflect the cost of the incentives to the state, we have offset the increased economic activity resulting from the use of the

¹ Connecticut Public Act 10-1 (June Special Session) Sec. 27.

credits, abatements and exemptions claimed by reducing state government spending across the board by the amount of forgone revenue for each year of the study period. In reality, the state may reallocate funds to cover revenue loss attributable to tax credits claims. The situation is dynamic in that revenue forgone to tax credits be reinforced or exacerbated by increases or decreases in revenue from other sources. However, for purposes of economic modeling, the balanced budget mechanism available for modeling purposes is to reduce state spending across the board. Reducing state spending in this manner has a negative impact on public employment, which shows in the results as a reduction in total employment. These reductions are not yearly layoffs that accompany the credits, but instead represent unfilled vacancies, reallocation of funds between programs, and other such measures taken to balance the budget. They can therefore overstate the negative employment impact of the tax credits and should not be viewed as jobs lost due to a particular tax credit.

The General Assembly's mandate states "the report shall include and not be limited to a baseline assessment of the tax credit and abatement programs enacted to encourage business growth in the state, including the number of aggregate jobs associated with taxpayers eligible for such tax credits or abatements and the aggregate annual revenue that such taxpayers generate for the state through employment and other activities." Relative to the legislative mandate above, we were unable to determine the aggregate jobs associated with firms that claimed tax credits and/or abatements during the study period. Companies are not required to report this data during the claim process and therefore we have no way of obtaining this information. In lieu of providing specific employment and tax revenue generated, DECD offers an economic and fiscal impact analysis of each tax credit and abatement program to discern their economic and fiscal costs and benefits to the State of Connecticut.

We also acknowledge the contribution of the Governor's Task Force on Business Tax Credits (2012), who reviewed the available business tax credits and made recommendations. Several of the credits that have been repealed due to low usage or limited impact were done so based on their recommendations.

In general, the results of our impact analysis suggest that incentives that require job creation, where jobs have to be created to earn the credit (Urban and Industrial Tax Credit, Apprenticeship Training Tax Credit in Manufacturing, Plastics and Construction Trades), have the most positive economic impact. Incentives that reward capital purchases (Fixed Capital Tax Credit, Machinery and Equipment Expenditure Tax Credit) may be beneficial for the claiming firms, but do not have as strong a fiscal return on investment as they encourage capital purchases over hiring labor. Most of the capital equipment purchased is likely manufactured out-of-state, making the direct impact on the state negligible, and we do not know if there is any labor hiring that accompanies the capital purchases because companies are not required to report this data.

Many of the tax credits and abatement programs covered in this report are “entitlement” credits, where the company does not need certification or undergo auditing to claim the credit. We suggest that fewer credits and abatements be offered this way, and instead require specific conditions to be met. This would allow the state to induce targeted activity. It is beneficial from an analytic perspective as well, as it links the activity directly to the tax credit, which would enable us to study each credit and abatement program’s impact more accurately.

List of Tax Credits and Abatements

Tax Credit or Abatement	Administered By	Annual Average of Sum of Claims Against All Taxes 2008-2010	Direct Jobs Created as of 2010 (n/a = not applicable)	Page
Urban and Industrial Site Reinvestment (URA)	DECD	\$9,799,927	5,799 (2012)	21
New Jobs Creation	DECD	\$341,097	506 (2012)	30
Insurance Reinvestment Fund	DECD	\$5,097,924	2,671 (2012)	33
Film Production	DECD	\$50,965,186	475 (2012)	41
Film Production Infrastructure	DECD	\$4,819,309	n/a	52
Digital Animation	DECD	\$12,412,715	522 (2012)	57
Enterprise Zone Tax Credit for Qualifying Corporations	DECD	\$0	0	61
Service Facility	DECD	\$0	0	62
Manufacturing Facility in an Enterprise Zone	DECD	\$1,204,624	n/a	63
Property Tax Exemptions for Machinery and Equipment*	-	\$54,984,461	n/a	69
Property Tax Abatement for Investment in Enterprise Zones	DECD	\$6,730,254	n/a	72
Urban Jobs Program	DECD	\$0	0	87
Historic Homes	DECD	\$1,177,488	n/a	92
Historic Preservation (formally Historic Investment) (2010)	DECD	\$1,930,571	n/a	96
Historic Structures Rehabilitation (2009-2010)	DECD	\$6,811,535	n/a	96
Angel Investor (2010-2011)	CI	\$868,492	n/a	98
Apprenticeship in Manufacturing, Plastics and Construction	DOL	\$438,645	451 (estimated)	101
Electronic Data Processing Equipment	-	\$31,450,418	n/a	104
Fixed Capital Investment	-	\$76,758,919	n/a	106
Machinery and Equipment Expenditures	-	\$1,378,698	n/a	108
Research and Development Expenditures	-	\$5,129,530	n/a	110
Research and Experimental Expenditures	-	\$16,961,139	n/a	112
Human Capital Investment	-	\$2,291,486	n/a	114
Land Donation	-	\$451,309	n/a	116
Housing Tax Credit Contribution	CHFA	\$9,553,733	n/a	118
Neighborhood Assistance Act	DRS	\$2,394,557	n/a	123
Insurance Department Assessment	-	\$1,011,866	n/a	126
Life and Health Insurance Guaranty Association Assessment*	-	\$127,862	n/a	127
Insurance Guaranty Association Assessment*	-	\$7,713,574	n/a	127
<i>Existing Credits Not Assessed in this Report</i>				
Traffic Reduction (ineligible)	-	-	-	126
Green Buildings (recently enacted)	DEEP	-	-	126
Job Expansion (JET) (recently enacted)	DECD	-	-	126
<i>Eliminated/Expiring Credits</i>				
Financial Institutions	DECD	\$164,338	n/a	130
Hiring Incentive	DOL	\$43,418	136 (estimated)	131
Computer Donation	-	\$6,921	n/a	133
Displaced Worker	-	\$12,702	30 (estimated)	133
Clean Alternative Fuels	-	\$3,762	n/a	136
Grants to Higher Education	-	\$2,643	n/a	136
SBA Guaranty Fee	-	\$1,390	n/a	140
Qualified Small Business Job Creation	DECD	\$14,223 (2010)	6	140
Vocational Rehabilitation Job Creation	DECD	\$0	0	140
<i>*2008-2011 Average</i>				

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Connecticut Tax Credit and Abatement Programs

Section 1: Introduction

Pursuant to Section 32-1r of the Connecticut General Statutes (“the Statute”), the Department of Economic and Community Development (DECD), in consultation with the Department of Revenue Services (DRS), was charged with studying the economic and fiscal impact of the state’s tax credit and abatement programs. A report of the DECD’s findings is to be generated every three years. The first DECD report examined the credit and abatement programs that were in effect from 1995 through 2007 using data supplied by DRS and the Office of Policy and Management (OPM). This report updates the analysis with data from 2008 through 2010 (2011 and 2012 for certain credits). Any credits that expired or were eliminated prior to 2007 were included in the first report and are not mentioned in this update. The report is organized in roughly the same way as the law is written with certain exceptions to reduce redundancy and increase clarity. The analysis of tax credit and abatement programs that DECD administers for which specific additional information is required appears in Section 5. The analysis of the tax credit programs that do not require pre-authorization (“entitlement” credits) or are administered by agencies other than DECD appears in Section 6.

The Statute states that “the report shall include and not be limited to a baseline assessment of the tax credit and abatement programs enacted to encourage business growth in the state, including the number of aggregate jobs associated with taxpayers eligible for such tax credits or abatements and the aggregate annual revenue that such taxpayers generate for the state through employment and other activities.”

To set expectations realistically, there likely have been more firms eligible for the tax credit and abatement programs in existence over the study period (1995 through 2010) than those that claimed and were awarded tax credits or abatements. Firms eligible for a tax credit or abatement may not take advantage of such credit or abatement because the costs of applying and/or complying exceed the program’s benefits to the firm. In addition, we have not provided the aggregate jobs associated with firms that claimed tax credits and/or abatements during the study period because the resources required are significant. The task involves identifying firms claiming credits (a DRS function) each year and having the Department of Labor access these firms’ employment records and aggregating. Similarly, for firms claiming tax credits and/or abatements during the study period, we have not provided the annual aggregate tax revenue claiming firms generate for the state and the municipalities in which they reside because the task involves significant DRS and municipal resources.

The task would identify claiming firms’ corporate taxes, the withholding taxes of their employees and the sales taxes they pay as they purchase goods and services in Connecticut. In addition, municipal tax collectors would need to aggregate the property taxes paid by claiming firms in their towns and cities. Moreover, we submit that knowing the aggregate number of jobs in firms claiming tax credits and

their aggregate tax payments to the state and municipalities conveys little useful information about the efficacy of these programs. Instead, DECD offers an economic and fiscal impact analysis of each tax credit and abatement program to discern the costs and benefits of each.

The Statute also requires a summary of each DECD-administered tax credit program and states, “(D) the value of the tax credits actually claimed and the value of the tax credits carried forward, listed by the North American Industrial Classification System code associated with the taxpayers claiming or carrying forward the credits; (E) an assessment and five-year projection of the potential impact on the state’s revenue stream from carry forwards allowed under such tax credit program.”

With respect to this requirement, Section 5 lists the relevant DECD-administered tax credits claimed by NAICS code.

Table 1.1 shows the most recent snapshot of carry forwards captured by DRS. It is difficult if not impossible to project the impact on the state’s revenue stream from carry forwards of DECD-administered tax credit programs because we cannot predict future firm behavior. The recent past shows that firms are carrying forward significant credits (banking them), but the future may not be like the past. If claiming firms’ profits increase significantly in the next few years, they may draw down their store of credits to reduce their corporate tax liability. If not, they may continue to bank them and use what they can to minimize their tax liabilities as in the recent past.

Table 1.1: Tax Credits Carried forward Applicable to the Corporate Income and Insurance Premium Taxes		Income or Tax Year Reported	
		2010	2011
Credit Program	Administrative Agency	Corp Tax	Insurance Premium Taxes
Historic Homes Rehab	DECD	\$5,220	\$15,889
Historic Structures Rehab	DECD	\$71,021	\$2,103,909
Historic Investment	DECD	\$0	\$487,098
Housing Program Contribution	CHFA	\$588,823	\$0
Film Production Infrastructure	DECD	\$186,249	\$0
Film Production	DECD	\$0	\$0
Insurance Reinvestment	DECD	\$19,241	\$168,988
Urban Industrial Reinvestment	DECD	\$15,084,056	\$406,695
Hiring Incentive	DOL	\$3,414	\$0
Alternative Fuels	DRS	\$0	\$0
Donation of Land	DRS	\$3,461,739	\$0
Electronic Data Processing Credit	DRS	\$120,292,592	\$15,822,545
Fixed Capital Investment	DRS	\$293,270,858	\$0
Human Capital Investment	DRS	\$8,521,158	\$0
Research & Development (Nonincremental)	DRS	\$1,226,473,987	\$0
Research & Experimental (Incremental)	DRS	\$553,092,866	\$0
SBA Guaranty Fee	DRS	\$174,243	\$0
	Totals	\$2,221,245,467	\$19,005,124

The Statute states that the report shall list “(G) the type and value of tax credits assigned and a summary of by North American Industrial Classification System codes of taxpayers to which such credits are assigned.”

Of the tax credit programs DECD administers, credits for the urban and industrial site reinvestment, the previous insurance reinvestment and the three film tax credit programs may be assigned to other Connecticut taxpayers. For the film tax credit programs, credits may be assigned three times and while the film office has the transfer records, they are confidential and cannot be released. For the other two programs, the tracking system is imperfect and we do not have reliable and complete data on the assignments of these credits.

This report analyzes tax credit programs that were in effect for calendar years 1995 through 2010 in order to provide policymakers with trend data and impacts over time. We restrict our attention to firms that were awarded and claimed tax credits aggregated to a certain industry level² during the

² We report credits and abatement claimed at the 3-digit North American Industrial Classification System (NAICS) level.

study period. A one-year snapshot of economic activity flowing from the state's incentive programs could be misleading as the evidence shows wide variation in their use over time. Some programs began and ended during this period. Since 2010, the legislature has created new tax credit programs (for example, the green buildings tax credit) and modified existing programs (for example, the insurance reinvestment, the film tax and the job creation tax credit programs). There is a two- to three-year lag in the availability of claim data sorted by NAICS code, which is provided by DRS. Therefore we have no data by NAICS code for new or modified tax credit programs after 2010, and we cannot report on their impact. Data for the machinery and equipment property tax exemption and the enterprise zone property tax abatement exist beyond 2010 and we assess these programs through the additional years.

Working Assumptions

In order to be eligible for tax credits, businesses must be subject to tax on their income. Businesses that have no tax liability in a given year may, depending on the relevant statute, either assign such credits or carry the credits forward to subsequent years (or in certain cases, carry the credits back to a previous year).

This range of firm behavior explicitly makes it challenging to know what firms actually do in the presence of these incentives. At one extreme, firms would spend what they did irrespective of the incentives. At the other, they might spend nothing absent the incentives. Most likely the impact lies somewhere in between. To capture a plausible range of economic activity, we consider the impact if 0%, 20%, 50% and 100% of what firms spend on the targeted activity is due to the incentive; that is, we assume the primary benefit is the inducement to increase spending on the targeted activity. In other words, firms would spend 100%, 80%, 50% and 0% of what they did on the targeted activity absent the incentives. In addition, we assume firms claiming a credit realize increased profit that in turn reduces their cost of capital. Absent tax credits or abatements, we assume firms would spend as they did in the recent past or at the rate of economic (that is, state GDP) growth. This pattern is the status quo or baseline economic forecast for Connecticut to which we apply the tax cost of the incentives and the new economic activity they generate as changes to the status quo. If a tax credit or abatement program does not require firms to increase spending on a targeted activity, we assume the incentive induced no additional spending and the economic and fiscal impacts result from a reduced cost of capital and reduced state spending.

The costs and benefits of the tax credit and abatement programs do not accrue simultaneously. For most tax credit and abatement programs, we assume the investment qualifying for a tax credit or abatement occurs in the year in which the credit is claimed. The difference in the timing of costs and benefits is especially clear in the Urban and Industrial Site Reinvestment tax credit in which an approved firm typically makes significant investment in plant, equipment and hiring during the first

three years of its expansion in or relocation to the state. In years four through seven, the firm claims 10% of the approved credit while in years seven through ten; the firm claims 20% of the credit. The offset to benefits occurs in years four through ten of the 10-year program as the firm claims its credit and reduces tax revenue to the state.

Analysis

We evaluate each tax credit, abatement and exemption program separately for its impact on jobs and its fiscal return (measured by net state revenue) to the state. Section 6 explains the assumptions and modeling strategies (for example, changes in public and private spending, employment, construction and the firm's cost of capital) for each tax credit program that does not require pre-authorization or is administered by an agency other than DECD. The film, urban and industrial site reinvestment, insurance reinvestment, manufacturing facilities, enterprise zone property tax abatements, job creation, machinery and equipment property tax exemption and historic preservation tax credit analyses appear in Section 5 under tax credits and abatements administered by DECD.

Data Sources

DRS provided the dollar amounts claimed for each tax credit program aggregated by either the SIC code or 3-digit NAICS code for each year from 1995 through 2010, with the exception of the 2002 year as this year involved both SIC and NAICS codes and two computer platforms that did not easily interface. In addition, prior to the implementation of the DRS integrated tax system (ITAS), the public service companies, health care centers and insurance premiums taxes were not entered into the DRS legacy system, so there is limited credit information available for these tax types. DRS also provided the Insurance Reinvestment Fund credits and Angel Investor tax credits claimed against the personal income tax. OPM's municipal indicators database is the source for the enterprise zone tax abatement and the machinery and equipment property tax exemption amounts by town by year.³

The latter data is currently available from FY 2001 through FY 2011. In addition, we obtained enterprise zone property tax abatement amounts by company from OPM's paper files and matched claim amounts with NAICS codes in DECD's files.

Tax Credits

Table 1.2 illustrates the magnitude of the corporate tax credits actually claimed by Connecticut firms in terms of forgone revenue in the study period. Table 1.3 shows the tax credits claimed against the insurance premiums tax and Table 1.4 shows the single credit (Electronic Data Processing Credit) claimable against the unrelated business income tax. The data for these tables is from the DRS

³ Sec. 32-1r does not ask for an analysis of sales or property tax exemptions. We assume exemptions reduce the base on which a tax is calculated and an abatement calculates the tax on the full base and redeems part of the tax paid. They may have the same effect and we include only the machinery and equipment property tax exemptions described in CGS §12-81 exemptions 60, 70 and 72 because the state reimburses municipalities in full for their forgone revenue and this incentive enhances business recruitment and retention.

Annual Reports. The significant variability in Table 1.2 is likely due to strategic tax planning as firms assign and carry forward their allowable credits.

Table 1.2: Corporate Tax Credits Claimed

Income Year	Total Credits Claimed
1995	\$ 58,339,796
1996	\$ 68,662,216
1997	\$137,892,892
1998	\$113,756,382
1999	\$113,293,022
2000	\$133,814,985
2001	\$138,599,336
2002	\$84,481,030
2003	\$93,096,165
2004	\$102,436,324
2005	\$93,688,069
2006	\$125,104,265
2007	\$108,951,729
2008	\$136,551,409
2009	\$128,892,313
2010	\$136,559,915
2011	\$141,906,635

Table 1.3: Insurance Premium Tax Credits Claimed

Income Year	Total Credits Claimed
1997	\$5,587,246
1998	NA
1999	NA
2000	\$19,857,390
2001	\$18,753,753
2002	\$19,787,274
2003	\$23,526,722
2004	\$28,888,787
2005	\$20,826,925
2006	\$21,090,476
2007	\$73,556,308
2008	\$43,307,242
2009	\$70,161,536
2010	\$90,423,224
2011	\$64,081,235
2012 (preliminary)	\$38,617,076

Table 1.4: Claims Against the Unrelated Business Tax

Income Year	Total EDP Credit Claimed*
1997	\$3,647
1998	\$2,969
1999	\$5,316
2000	\$8,125
2001	\$12,365
2002	\$20,024
2003	\$28,514
2004	\$34,739
2005	\$31,051
2006	\$34,240
2007	\$32,911
2008	\$17,724
2009	\$11,840
2010	\$12,756
2011	\$13,313

* The Electronic Data Processing (EDP) credit is the only credit that can be claimed by an unrelated business income tax payer.

The credits, abatements and exemptions claimed and the consequent tax revenues forgone in each year reduce revenue available to the state. In lieu of tax increases to balance the budget and to reflect the cost of the incentives to the state, we offset the increased economic activity resulting from the use of the credits, abatements and exemptions claimed by reducing state government spending across the board by the tax revenue forgone each year of the study period. In reality, the state may reallocate funds to cover revenue lost to tax credit claims. The situation is dynamic in that revenue forgone to tax credit claims may be reinforced or exacerbated by increases or decreases in revenue from other sources. However, for purposes of economic modeling, the available modeling mechanism is to reduce state spending across the board.

In general, the results of our impact analysis suggest that incentives that require job creation, where jobs have to be created to earn the credit (Urban and Industrial Tax Credit, Apprenticeship Training Tax Credit in Manufacturing, Plastics and Construction Trades), have the most positive economic impact. Incentives that reward capital purchases (Fixed Capital Tax Credit, Machinery and Equipment Expenditure Tax Credit) may be beneficial for the claiming firms, but do not have as strong a fiscal return on investment as they encourage capital purchases over hiring labor.

Many of the tax credits and abatement programs covered in this report are “entitlement” credits, where the company does not need certification or undergo auditing to claim the credit. We suggest that fewer credits and abatements be offered this way, and instead require specific conditions to be met. This would allow the state to induce targeted activity. It is beneficial from an analytic perspective as well, as it links the activity directly to the tax credit, which would enable us to study each credit and abatement program’s impact more accurately.

Section 2: Amounts Claimed and the Number of Claimants of Connecticut's Corporate Tax Credit, Abatement and Exemption Programs

This section enumerates Connecticut's tax credit and certain property tax abatement and exemption programs from income years 1989 through 2010 (2011 in the cases of claims against the insurance premiums tax, the public service companies' tax, the health care centers tax and the machinery and equipment property tax exemptions, and 2012 for enterprise zone property tax abatements). The enumeration consists of tabulating the dollar amount of claims each year for each tax credit program and the number of claimants for each program in each year of the study period and addresses Sect. 32-1r.

While some programs began before 1989, we consider this period because it covers the recessions of 1989-1991, 2001-2003 and 2007-2009 as well as the expansions from February 1992-July 2000, April 2003-December 2007 and June 2009.⁴ Examining trends over several years in tax cost and by the number of claimants is more informative than a one- or two-year perspective. The Department of Economic and Community Development (DECD) culled the data for this section from the Department of Revenue Services' (DRS) annual reports. DRS annual reports contain for each credit program, the amount claimed and the number of claimants as well as credits carried forward from prior years and used in the DRS annual report year (usually two years earlier than the annual report). Credits carried forward are not broken out separately because they are comingled with claims not carried forward in the aggregate data.

The DRS Informational Publication 2010(13), *Guide to Connecticut Business Tax Credits* (Issued 03/01/12) provides a brief overview of the then available business tax credits (some credit programs have expired and new programs have emerged).⁵ The *Guide* describes the taxes against which credits may be applied and provides definitions, effective dates for newer credits, credit percentages, amounts, how to compute credits, carry-forward/carry-back limitations, how to apply for and claim credits, attachments required, credit assignment or exchange provisions, sources of additional information, as well as statutory and regulatory references.

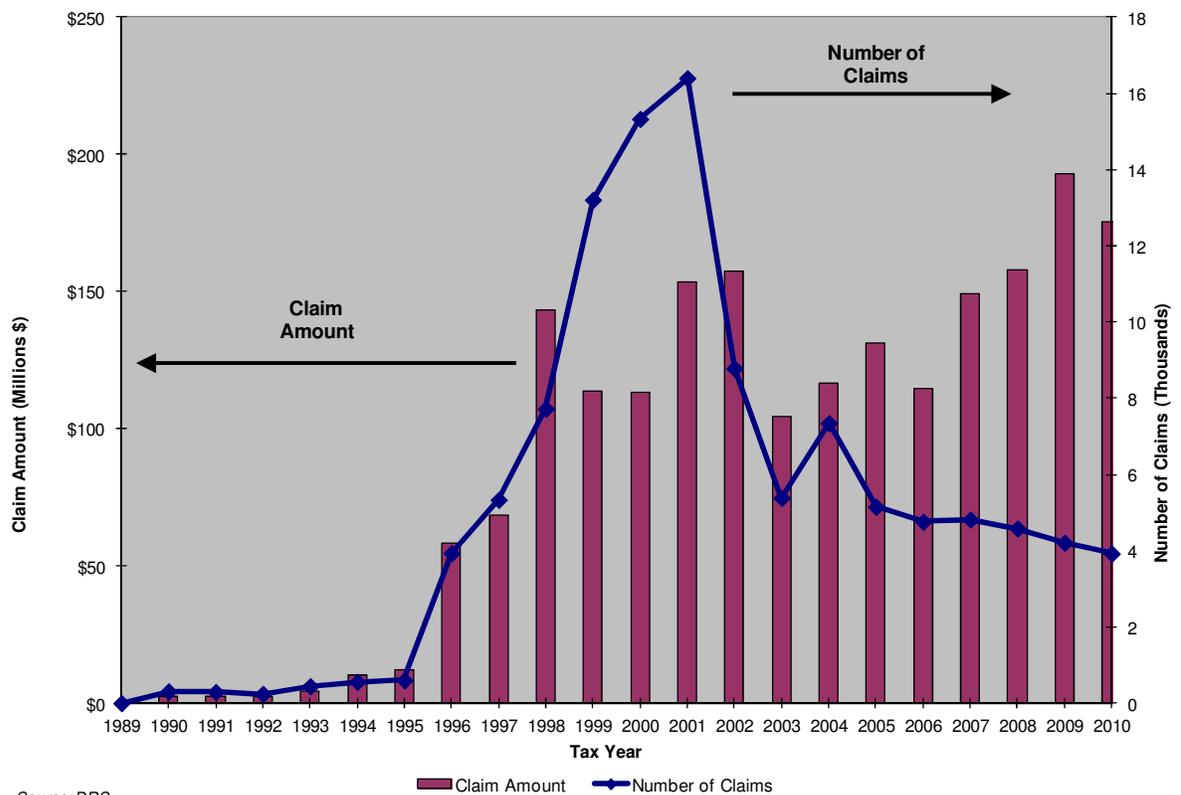
For all tax credit programs applied to the corporate, insurance premiums and unrelated business taxes, the amount of revenue forgone between income years 1989 and 2010 totaled \$1.965 billion in nominal

⁴ The National Bureau of Economic Research (NBER) is the nation's leading nonprofit research organization that promotes understanding of how the economy works, undertakes and disseminates economic research that focuses on the business cycle and long-term economic growth. The NBER Business Cycle Dating Committee is the "official" arbiter of the beginning and ending dates (months and quarters) of U.S. economic recessions. The Committee determined that a peak in economic activity occurred in the U.S. economy in December 2007. That peak marked the end of the expansion that began in November 2001 and the beginning of a new recession. The Committee determined June 2009 marked the end of the current recession. See <http://www.nber.org/cycles>.

⁵ See <http://www.ct.gov/ecd/lib/ecd/drstaxcreditguide070908.pdf>.

dollars. The annual amount claimed rose from \$1.93 million in 1989 to \$169.4 million in 2010. The largest annual amount claimed was \$191.1 million in 2009. Chart 2.1 shows the dollar amount of tax credits claimed (left scale) and the number of claims (right scale) from 1989 through 2010 for all tax credit programs. As the state’s economy recovered from the recession of 1989-1992, the number of claims and claim amounts increased. A significant decline in the claim amount and the number of claims occurred during the recession of 2001-2003, though amounts claimed since then have generally increased while the number of claimants declined from 2004 through 2010. We observe the value of the average credit claimed has increased significantly since 2002.⁶

Chart 2.1: Connecticut Corporate Tax Credits Claimed in Tax Years 1989 – 2010



Source: DRS

A closer look at the trends in each tax credit program shows considerable variation (refer to Tables 2.1, 2.2 and 2.3 below). While generally the amounts claimed correlate with the number of claims, there are exceptions.

In 2000, six claimants in the Insurance Reinvestment credit program reduced their Connecticut tax liability by \$6,210, while in 2007 six firms claimed \$5.9 million. In 1999, 158 firms claimed \$1.1 million for the Manufacturing Facility in Targeted Investment Community tax credit, while in 2007,

⁶ The value of the average credit claimed is the claim value (vertical bar) divided by the number of claims.

41 firms claimed \$3.5 million. In 1997, 180 firms claimed \$55.4 million under the basic R&D tax incentive while in 2007, 134 firms claimed \$5.3 million.

The highest claim amount over the 2008-2010 period were for Connecticut's 5% Fixed Capital Investment Tax Credit, which averaged \$76.6 million over the three years, with a high of \$80.8 million in 2009. The highest number of claims filed was also for this tax credit, with an average of 1,901 claims over the three year period, with a high of 2,076 in 2008.

Insurance premium tax credits include those for Electronic Data Processing Investments, Insurance Department Assessments, Insurance Reinvestments, Neighborhood Assistance, Film Production, Film Production Infrastructure and Historic Homes. These credits ranged from \$5.6 million in 1997 to a maximum of \$90.4 million claimed on 2010 tax returns and \$32.2 million (preliminary) for the 2011 tax year according to current DRS data.

Separately, the Electronic Data Processing Equipment Property Tax Credit represents small amounts claimed against the current corporation income tax by tax-exempt organizations that conduct business not substantially related to their charitable, educational, or other tax-exempt purpose for their EDP investments. This credit applies to the "Unrelated Business Taxable Income Tax."⁷ The credit amounts claimed ranged from \$3,647 by 12 taxpayers in 1997 to \$12,756 claimed by 33 organizations on their 2010 tax returns.

In addition to tax credits, the state and its municipalities offer property tax abatements and exemptions to recruit, retain and help expand businesses. By law, each municipality has the ability to offer, on a sliding scale depending on the level of investment, property tax exemptions for real estate, manufacturing machinery and equipment subject to CGS §12-81, exemptions 60, 70 and 72. The aggregate amount of these abatements and exemptions ranged from \$76.4 million in SFY 2001-2002 to an estimated \$47.9 million in SFY 2011.

Similarly, property tax abatements and exemptions defined in CGS §32-9p, 32-9r, 32-9s and 12-81 exemptions 59, 60, 70 and 72 are among the benefits to qualifying corporations that locate in an Enterprise Zone (EZ), Enterprise Corridor or a Targeted Investment Community. Under these programs, the state reimburses municipalities for half their forgone revenue as a result of the abatements and exemptions (qualifying firms' property tax burden may be reduced by up to 80%). The most recent data indicate that from FY 2002 through FY 2012, these abatements and payouts have averaged about \$7 million per year.

⁷ U.S. Department of the Treasury, IRS Publication 598 (Rev. March 2010) defines and provides examples.

Table 2.1 and 2.2 display the corporation tax credits claimed for the most recent ten years covered in this report (tax years 2000 through 2010). Earlier years (1989 to 2007) were presented in the 2010 report. Gaps in the data indicate that none was available in the DRS annual report for that year. Leading gaps indicate the credit program did not start until data became available. For example, the film tax credit became available on July 1, 2006 and relevant data appeared in the 2007 tax year in the FY 2008-2009 DRS Annual Report. Trailing gaps indicate the program expired. Some tax credit programs have carry forward, carry back and/or assignment provisions and therefore, data may appear after the program expired.

Table 2.3 displays credits claimed against the insurance premiums tax and the unrelated business tax as well as property tax abatements claimed under the enterprise zone and the machinery and equipment property tax exemption programs. The amounts reported under the enterprise zone program represent the reimbursements the state made to municipalities granting abatements to firms in census tracts with enterprise zone designation. The municipalities lost the same amount of property tax revenue as the state reimbursed them (certified firms paid 20% of their property tax bill, municipalities sacrificed 40% of the property tax bill and the state reimbursed the municipality for 40% of the property tax bill).

Table 2.1: Corporation Tax Credits Claimed 2000-2010

DRS Annual Report Year: Amount Claimed in Tax Return Year:	2001-2002 2000	2002-2003 2001	2003-2004 2002	2004-2005 2003	2005-2006 2004	2006-2007 2005	2007-2008 2006	2008-2009 2007	2009-2010 2008	2010-2011 2009	2011-2012 2010
Apprenticeship Training	\$435,903	\$274,150	\$244,668	\$1,198,990	\$86,370	\$1,187,501	\$295,076	\$106,757	\$21,071	\$668,425	\$626,001
# of Credits	65	37	23	9	14	14	12	8	6	9	13
Computer Donation		\$46,754	\$22,551			\$250	\$340		\$0	\$1,593	\$12,249
# of Credits		1	1			1	1		0	1	1
Clean Alternative Fuels	\$122,454	\$5,225	\$ 8,817	\$ 75,536	\$ 23,819	\$ 3,429	\$ 6,001	\$ 1,958	\$7,511	\$1,903	\$1,871
# of Credits	9	5	2	8	2	3	2	2	1	1	2
Digital Animation										\$928,726	\$1,743,190
# of Credits										1	2
Displaced Electric Worker			\$892	\$93			\$1,500	\$5,999	\$9,605	\$24,000	\$4,500
# of Credits			1	1			1	1	3	5	2
Donation of Open Space Land	\$665,663	\$557,257	\$334,414	\$184,782	\$1,234,270	\$55,757	\$6,778	\$94,876	\$1,344,066	\$6,245	\$3,616
# of Credits	9	4	5	90	4	3	2	4	3	3	2
Electronic Data Processing	\$26,488,367	\$28,072,552	\$12,955,763	\$19,896,275	\$16,698,046	\$23,059,263	\$16,046,037	\$13,736,970	\$13,025,091	\$9,422,103	\$10,931,172
# of Credits	6,777	3,704	1,908	2,454	1,770	1,623	1,609	1,477	1,371	1,278	1,234
Employer Assisted Housing	\$156,273	\$135,026	\$101,331	\$16,334	\$8,029	\$11,898	\$83,049	\$32,425	\$0		
# of Credits	9	7	4	3	1	4	1	2	0		
Enterprise Zone or Entertainment District											
# of Credits											
Film Production								\$11,438,432	\$12,923,918	\$2,963,504	\$1,926,263
# of Credits								10	11	1	3
Film Infrastructure									\$323	\$611,376	\$422,565
# of Credits									2	9	1
Fixed Capital	\$50,790,548	\$54,235,916	\$37,064,650	\$48,915,004	\$57,932,133	\$44,015,180	\$77,486,450	\$46,228,288	\$69,555,015	\$80,814,859	\$79,478,769
# of Credits	7,114	3,744	2,543	3,793	2,466	2,304	2,313	2,207	2,076	1,805	1,821
Financial Institutions			\$1,741	\$100,762	\$2,556		\$839		\$184,219	\$4,601	\$304,194
# of Credits			3	15	2		2		3	3	5
Hiring Incentive	\$40,492	\$52,155	\$252,452	\$3,941	\$8,483	\$141		\$4,500	\$265	\$86,571	
# of Credits	25	11	5	6	2	1		1	2	\$2	
Historic Homes Rehabilitation			\$209,497	\$541,772	\$265,000	\$67,007		\$4,680,420	\$0	\$15,766	\$92,884
# of Credits			2	4	3	1		57	0	2	4
Historic Struc Rehab											2,791
# of Credits											1
Historic Preservation											552,293
# of Credits											1

Table 2.2: Corporation Tax Credits Claimed 2000-2010

DRS Annual Report Year: Amount Claimed in Tax Return Year:	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Housing Program Contribution	\$3,013,842	\$3,593,351	\$2,731,744	\$3,762,045	\$1,739,525	\$2,016,285	\$3,358,032	\$3,146,933	\$3,113,438	\$1,561,281	\$3,470,371
# of Credits	42	22	24	26	8	5	8	8	2	4	3
Human Capital	\$2,538,751	\$2,964,233	\$2,078,714	\$1,323,432	\$2,258,410	\$1,443,930	\$1,692,412	\$1,514,318	\$1,626,952	\$1,732,844	\$3,514,656
# of Credits	387	206	167	180	172	167	177	162	140	133	127
Insurance Reinvestment	\$6,210	\$128,403	\$36,550	\$334,040	\$314,773	\$159,615	\$2,165,750	\$5,868,838	\$3,590,856	\$343,885	\$403,124
# of Credits	6	3	2	4	3	1	5	6	5	2	3
Machinery and Equipment	\$6,538,797	\$3,061,185	\$2,349,047	\$1,529,827	\$2,117,602	\$1,573,204	\$1,052,677	\$1,854,847	\$1,508,658	\$1,874,417	\$753,012
# of Credits	1,040	507	277	265	203	174	145	132	103	73	88
Manufacturing Facility in Targeted Investment Community	\$1,079,806	\$674,564	\$467,145	\$400,245	\$1,869,062	\$617,235	\$1,549,934	\$3,469,806	\$1,013,317	\$1,238,201	\$1,368,808
# of Credits	139	76	10	50	45	38	38	41	35	30	28
Neighborhood Assistance	\$2,137,474	\$1,220,022	\$1,232,322	\$1,395,880	\$1,217,040	\$1,071,745	\$1,174,715	\$752,850	\$1,382,983	\$1,119,638	\$1,219,580
# of Credits	269	111	97	94	84	74	73	59	56	50	48
New Jobs Creation									\$0	\$72,543	\$523,942
# of Credits									0	1	5
Research & Development	\$23,720,780	\$34,702,296	\$1,980,787	\$3,430,736	\$5,932,629	\$3,673,756	\$4,831,443	\$5,321,279	\$4,827,816	\$5,809,064	\$4,578,869
# of Credits	274	183	129	122	134	132	164	134	130	155	153
Research & Experimental Expenditures	\$15,797,584	\$8,682,936	\$22,382,442	\$9,811,504	\$10,268,517	\$14,320,781	\$15,352,339	\$10,637,252	\$20,564,948	\$15,389,000	\$14,800,753
# of Credits	161	100	121	126	149	135	157	153	153	161	158
Research & Development Grants to Institutions of Higher Ed		\$5,446		\$2,042	\$1,512	\$229,755		\$21,657	\$321		\$7,002
# of Credits		2		1	1	2		1	1		1
SBA Guaranty Fee	\$20,128	\$2,942	\$297	\$3,101	\$239,602	\$178,791	\$893	\$33,324	\$991		\$1,788
# of Credits	21	2	1	6	4	1	1	2	1		1
Sm Business Job Creation											14,223
# of Credits											4
Urban and Industrial Site Reinvestment						\$94	\$4,500,000	\$15,173,970	\$17,200,000	\$17,314,000	\$22,058,013
# of Credits						4		1	8	11	13
Total Claims	\$133,553,072	\$138,414,413	\$84,455,824	\$92,926,341	\$102,217,378	\$93,685,617	\$129,604,265	\$124,125,699	\$151,901,363	\$142,004,545	\$148,816,499
Total Claimants	16,347	8,725	5,325	7,257	5,067	4,687	4,711	4,468	4,112	3,740	3,724

Table 2.3: Insurance Premiums Tax and Unrelated Business Tax Credits/Property Tax Abatements

DRS Annual Report Year:	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Amount Claimed in Tax Return Year:	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Insurance Premium Tax Credits											
CT Life & Health Ins Guaranty Credit						\$94,187	\$84,936	\$98,954	\$106,146	\$132,786	\$118,944
# of Credits											
CT Insurance Guaranty Credit						\$12,584,676	\$15,884,835	\$17,036,154	\$10,612,726	\$11,085,145	\$5,719,472
# of Credits											
Electronic Data Processing	\$12,487,827	\$12,252,811	\$13,099,412	\$10,668,035	\$18,551,806	\$13,819,019	\$14,249,095	\$15,006,116	\$15,923,908	\$13,474,493	\$13,045,691
# of Credits	36	41	46	43	41	44	43	36	37	38	38
Housing Pgm Contribution	\$59,399	\$831,452	\$1,380,637	\$2,167,338	\$1,982,714	\$377,410	\$69,083	\$446,493			\$303,000
# of Credits	1	2	2	9	10	4	1	5			2
Insurance Dept Assessment	\$981,433	\$1,018,575	\$1,072,910	\$1,130,438	\$1,000,475	\$973,210	\$1,122,053	\$923,638	\$690,815	\$803,572	\$752,736
# of Credits	21	18	16	16	11	10	12	14	8	8	6
Insurance Reinvestment	\$930,393	\$2,696,054	\$3,575,086	\$9,013,158	\$6,555,799	\$4,488,722	\$4,908,110	\$10,488,076	\$2,653,339	\$3,961,930	\$1,414,037
# of Credits	8	14	13	19	13	15	43	41	34	26	15
Neighborhood Assistance	\$3,000	\$76,000	\$67,706	\$80,909	\$132,400	\$106,021	\$282,600	\$168,300	\$655,000	\$824,657	\$1,147,650
# of Credits	1	2	2	4	4	3	8	4	14	15	18
Film Production Credit								\$18,197,013	\$27,547,519	\$15,040,379	\$47,393,655
# of Credits								11	30	32	40
Film Production Infrastructure									\$1,596,465	\$4,755,740	\$7,190,035
# of Credits									5	9	24
Digital Animation										8,411,926	9,429,713
# of Credits										7	8
Health Care Coverage under HUSKY	\$5,395,338	\$1,639,154									
# of Credits	3	1									
Historic Homes		\$239,707	\$591,523	\$466,844	\$665,593	\$1,062,543	\$3,255,787	\$3,542,162	\$1,239,112	\$725,897	\$808,775
# of Credits		2	3	5	6	6	10	12	8	3	3
Historic Preservation											\$1,378,278
# of Credits											5
Urban Industrial Renovation								\$287,621	\$6,009,750	\$6,725,928	\$5,402,177
# of Credits								1	4	7	5
Historic Structures										\$3,883,332	\$87,008
# of Credits										5	2
New Jobs Credit										\$25,343	\$60,367
# of Credits										2	1
Total Insurance Premium Tax Credits	\$19,857,390	\$18,753,753	\$19,787,274	\$23,526,722	\$28,888,787	\$33,505,788	\$39,856,499	\$66,194,527	\$67,034,780	\$69,851,128	\$94,251,538
Total Claimants	70	80	82	96	85	82	117	124	140	152	167
Unrelated Business Taxable Income Tax	\$8,125	\$12,365	\$20,024	\$28,514	\$34,739	\$31,051	\$34,240	\$32,911		\$11,840	\$12,756
# of Credits	17	28	40	54	55	53	50	47		36	33
Property Tax Abatement/Exemption Programs ↓ /Years→			2002	2003	2004	2005	2006	2007	2008	2009	2010
Mfg. Machinery & Equipment Exemption Program			\$76,401,238	\$56,143,514	\$50,578,199	\$50,729,720	\$52,823,972	\$50,243,714	\$57,348,214	\$57,348,215	
EZ Abatement Program			\$5,988,760	\$8,101,651	\$7,000,000	\$7,486,278	\$7,098,291	\$7,046,907	\$6,328,289	\$7,265,292	\$6,523,250

Section 3: Working Assumptions and Changes in Methodology from 2010 Report

This report is the first update to the original study released in 2010⁸. This report adds three years to the original study. In addition to the benefits of incorporating more recent data into the analysis, the update gives us the opportunity to evaluate our methodology and modify it to improve the assessment when possible.

We have made one major change in the methodology used to assess most of the credits in the study. The 2010 study used a very conservative approach to measure the activity induced by the credit. Under that methodology, for many credits the maximum induced activity equaled the amount of the credit itself. We have changed that approach by defining the full value of the associated investment (targeted activity) as the maximum activity induced by the credit. The 2010 study presented three scenarios as the range of possible impacts: a 20%, 50% and 100% scenario where the percentage times the credit represented the range of induced target activity. This study presents four scenarios; 0%, 20%, 50% and 100%, where the percentage times the *full investment* associated with the credit represents the range of induced target activity. For example, if the credit amount is 5% of expenditures on capital equipment, the 2010 study considered the 5% as the maximum activity to be considered; this time, we take the full expense (20 times the credit) into account. The 0% scenario represents the very conservative view that none of the activity was induced by the credit; in other words, the activity in full would have occurred if the credit had not existed. The 100% scenario represents the very optimistic view that the credit induced the full investment, or in other words, that none of the investment would have occurred without the credit; the credit is responsible for the full investment. In reality, the actual scenario probably is somewhere in between these two extremes. We present the 20% and 50% as two possible in-between cases; in the first, the credit induces 20% of the targeted activity, and in the second, it induces 50%.

There are two reasons we changed the methodology to include the full investment (and the above-mentioned fractions of it) in our estimations. First, while some credits may seem small relative to the full investment (for example, a 5% tax credit for fixed capital purchases) and it may seem it would play only a small role in the investment decision, the 5% can still amount to a significant portion of the company's tax bill, and because most companies have margins in the range of 5-10%, can affect the timing of purchase decisions. The other factor to consider is that any company in Connecticut is capable of moving to another state, and that these credits may incentivize them to stay here. If so, the presence of the company itself may be influenced by a particular tax credit or credits, and as a result the investment activity would not occur in their absence. These considerations led us to believe that in addition to the conservative impact a wider range of estimates were called for, including more optimistic ones.

⁸ *An Assessment of Connecticut's Tax Credit and Abatement Programs*, DECD, December 2010.
http://www.ct.gov/ecd/lib/ecd/decd_sb_501_sec_27_report_12-30-2010_final.pdf

Ideally, we would like to have information from the credit recipients themselves on what, if any, impact the credits have had on their investments decisions, and what other activity resulted from their availability. We do have this information for a few credits: the conditions attached to the Urban and Industrial tax credits (URA) and the information they are required to provide regularly to DECD, for example, allows us to know the direct impact of this credit. We know that film companies would not have located their productions to the state without the film tax credits, so in this case too we know the activity that resulted directly from these credits. For credits such as these, we model the impact based on the data the companies provide, and because we know the induced activity related to the credit, a range of estimates is not necessary. However, we cannot get similar data for most of the credits and therefore have to make reasonable assumptions and provide a range of possible impacts. In a few cases where the credit is a significant portion of the investment we do not provide a range as the results would be very similar.

Except for the claim amounts reported as absolute levels, the averages reported in the results Tables in Section 5 through Appendix A are the sums of the changes from the baseline forecast, in each year the credit or exemption was in effect, divided by the corresponding number of years. The baseline reflects the state of the state economy absent any tax credit stimuli. Therefore, the reported average changes are the not the same as year-to-year changes in the levels of the variables. Dollar numbers in the tables appear in current dollar or nominal terms.

The average state revenue change per dollar forgone is the sum of the changes in (gross) state revenue from the baseline divided by the sum of the revenues forgone during the period in which the credit or exemption was in effect. We use this measure because in some years the values of a denominator is zero, so the average of ratios (different in any case from the ratio of averages) does not produce meaningful results. This means that we look at the total revenue gained or lost (changes from the baseline forecast) over the period in which the credit or exemption was in effect relative to the total amount of revenue forgone. In terms of average state revenue gained or lost per tax credit dollar, our results show that, with few exceptions, the amounts are significantly less than one dollar.

The total employment changes reported in the tables include jobs created in the farm, public and private sectors and part- and full-time jobs as well as the self-employed. We report jobs created in the private, nonfarm and all other sectors combined (total employment). The results show that in general, jobs created in the private sector (if any), are sometimes (significantly) offset by public sector employment losses (or hiring forgone) as a result of forgone state tax revenue. It is important to remember that the employment loss in the public sector does not mean that an equivalent number of public sector workers were laid off; but rather, the state had to make budget decisions that kept the public sector employment levels lower than they would have been absent the credits. For example, the state can decide to not replace retiring workers (a hiring freeze), or reallocate spending in ways that reduce the demand for public sector workers in some areas.

However, the purpose of several tax credit programs described in this report is or was not to create jobs or to increase tax revenue. Donating land or contributing to housing programs ostensibly improves the quality of life for Connecticut residents, and tax credit programs such as these do not (intend to) create jobs or increase tax revenue. These programs appear to target quality of life improvement. Therefore, the revenue returned per dollar of tax credit claimed is not universally useful in judging the efficacy of certain tax credit programs. For example, the acres of land added to the state's inventory of open space would be more useful than the metrics we report below for the eponymous tax credit programs. However, we do not have the data necessary to report these statistics.

Section 4: Governor's Task Force to Study Business Tax Credits

On January 12th, 2012, Governor Malloy's Executive Order No. 17 established the Governor's Task Force to Study Business Tax Credits in Connecticut. The task force was co-chaired by Commissioner Kevin Sullivan of the Department of Revenue Services and Commissioner Catherine Smith of the Department of Economic and Community Development. The task force's mission was:

- To identify specific areas of business taxation and other issues, including tax credits and other tax benefits that should be the focus of future legislation and state economic policy; and,
- To evaluate the cost, benefit, efficiency, effectiveness and measurable performance of the current tax credit structure with respect to economic development, business retention and growth, and employment retention and growth.

The task force conducted outreach and discussions and held public hearings of research and report presentations. On September 27th, 2012, the task force released its recommendations, of which the goal is to support a growth-oriented economic climate that is beneficial & fair for taxpayers, helps businesses thrive & compete effectively and grows enterprise, good jobs, incomes & consumer buying power. With this purpose in mind, the task force recommends several changes to the existing business tax credits and how they are implemented.

Some key recommendations include clarifying definitions to level the playing field for all in-state businesses; better aligning the credits with the state's overall economic strategy; standardizing and simplifying the process; creating a searchable DECD database for state tax credits and other business assistance programs; and establishing a DECD -led interagency working group to simplify credit approval process & improve inter-agency cooperation. The task force also made recommendations regarding the state's sales, personal income, gift and estate, and property taxes.

The task force also recommended the elimination (sunset) of several no use and low use tax credits. Some of these have already been implemented; others are referred to in the text of this report.

Section 5: An Assessment of the Intended Statutory and Programmatic Goals of Tax Credits and Abatement Programs Administered by DECD and Their Economic Impact

This section addresses the putative statutory and programmatic goals of tax credit and abatement programs administered by DECD as well as the history of claims, investments and net economic benefits of the tax credit programs DECD administers. Further, we include the claims, implied investments and net economic benefits of the Enterprise Zone property tax abatement and Machinery and Equipment property tax exemption programs.

The credits are classified by two broad goals: tax credits that are intended to spur job creation and economic development, and tax credits that are intended to encourage some other activity.

From a reading of the relevant statutes, these tax credit, abatement and exemption programs in general intend to increase economic growth more than would occur without these programs. For example, the film tax credit seeks to build an industry that would perhaps not otherwise establish itself in Connecticut. The film tax credit program benefits film production and digital animation businesses as well as businesses that build and equip studios and pre- and post-production facilities. Further, the film tax credit incentivizes investment to develop the workforce needed in the film industry. The Urban and Industrial Site Reinvestment and the New Jobs Creation tax credit programs benefit businesses of any size in any industry. The Insurance Reinvestment tax credit program as formulated prior to July 1, 2010 benefits the insurance industry specifically. The Manufacturing Facilities tax credit program that includes certain service facilities intends to reward firms located in distressed areas and stimulate other firms to locate and /or expand there. The Enterprise Zone property tax abatement intends to reward firms located in distressed areas and stimulate others to locate and /or expand there.

Each DECD-administered incentive program concludes with a recommendation as to whether the program should be continued, modified or repealed and the basis for the recommendation and an estimate of the expected impact on the state's economy. To summarize, there are some programs that we recommend eliminating because they have no claims to date (Urban Jobs, Enterprise Zone Tax Credit for Qualifying Corporations) and there are in some cases programs that have had significant uptake and benefit, for example, the property tax exemptions for machinery and equipment. In certain programs that require job targets to be achieved in order to qualify for a credit, we believe the targets are unrealistically high which likely explains the lack of participation. Other programs have had miniscule claims and do not create much impact. These should be eliminated because they do not create much benefit and they do not cost the state much (their absence would be insignificant to the state economy).

Tax Credit Modeling Assumptions, Strategies and Results

Following are the assumptions we make and the modeling strategies we use for each tax credit program administered by DECD. Tax credit, abatement and exemption programs that DECD does not administer appear in Section 6 of this report. The Connecticut economic model referred to below is from Regional Economic Models, Inc. of Amherst, MA and is called REMI Policy Insight. We describe the REMI model in Appendix B.

Section 5.1: Credits Targeted towards Job Creation and Industry Development

Urban and Industrial Site Reinvestment Tax Credit

This tax credit may be applied against a combination of the taxes imposed under Chapters 207, 208, 208a, 209, 210, 211, 211b, 212, 212a, or CGS §38a-743 for investments in eligible industrial site investment projects or eligible urban reinvestment projects. The Commissioner of DECD may register managers of funds and community development entities created to invest in eligible urban reinvestment projects and eligible industrial site investment projects. A fund manager or community development entity must have its primary place of business in Connecticut. A fund manager registered under the Insurance Reinvestment Fund Tax Credit on or before July 1, 2000, will be eligible to serve as a fund manager for purposes of this credit. No taxpayer will be eligible for this tax credit and the tax credit for manufacturing and service facilities or the insurance reinvestment fund tax credit for the same investment. No two taxpayers will be eligible for a tax credit with respect to the same investment or the same project costs. The relevant statute is CGS §32-9t.

A taxpayer making an investment may claim the credit if it is made:

- Directly and at least \$5 million in a qualified urban or industrial site project;
- Directly and at least \$50 million in a municipality approved by the Commissioner of DECD;
- Through a DECD approved fund manager with a fund that has a total asset value of at least \$60 million for the income year in which the initial credit is taken and not less than three investors who are not related persons; **or**
- Through a DECD approved community development entity.

The tax credit is allowable over ten years as follows:

- The income year in which the investment was made and the two succeeding income years, 0%;
- The third full income year following the year in which the investment was made and the three succeeding income years, 10%; and,
- The seventh full income year following the year in which the investment occurred and the two succeeding income years, 20%.

The tax credit may be carried forward for the five immediately succeeding income years until the full tax credit has been taken. No carryback is allowed. An assignee is entitled to carryforward any unused tax credit as provided in the statute. A taxpayer allowed an urban and industrial reinvestment tax credit (assignor) may assign the credit to another taxpayer or taxpayers (assignees). Assignees of the tax credit must claim the tax credit in the same tax year that the assignor would have been eligible to claim the credit. An assignee may not assign the credit.

This tax credit program intends to increase jobs and investment in plant and equipment in the state. Its broad scope defines investment below and may include almost any type of business expansion in or relocation to the state for businesses in any industry. Because the program includes remediation and demolition, it encourages brownfield redevelopment that is an important consideration in adaptive reuse in the state's economic development strategy. The program provides for an annual audit of each business claiming the credit to show that its project produces more state revenue than state expenditure and if not, allows the DECD commissioner to recapture a portion of the credit. In effect, the claiming business must earn the credit each year and if it does not, DECD may reduce or eliminate the credit and levy penalties.

Investment means all amounts invested in an eligible project by or on behalf of a taxpayer whether directly, through a fund, or through a community development entity, including but not limited to equity investments made by the taxpayer and loans. 'Project' means the acquisition, leasing, demolition, remediation, construction, renovation, expansion or other development, or redevelopment of real property and improvements within Connecticut including furniture, fixtures, equipment, associated interest and financing costs, relocation costs, start-up costs, architectural, engineering, legal and other professional services, plans, specifications, surveys, permits and studies necessary to the project.

The Urban and Industrial Site Reinvestment Tax Credit program is capped at \$800 million in awardable credits (raised from \$650 million during the 2014 legislative session), while individual projects may not exceed \$100 million in awardable credits. If a project exceeds \$20 million in awardable tax credits, it must be approved by the legislature.

An eligible industrial site investment project means a project located in Connecticut for the development or redevelopment of real property:

- That has been subject to a spill defined in CGS §22a-452c, is an establishment defined in CGS §22a-134(3), as amended or is a facility defined in 42 USC §9601(9);
- That, if remediated, renovated, or demolished in accordance with applicable law and regulations and the standards of remediation of the Department of Environmental Protection and used for business purposes will add significant new economic activity and employment in the municipality in which the investment is to be made and will generate additional tax revenues to Connecticut;

- For which the use of the urban and industrial site reinvestment program will be necessary to attract private investment to the project;
- The business use of which would be economically viable and would generate direct and indirect economic benefits to Connecticut that exceed the amount of the investment during the period for which the tax credits are granted; and,
- That is, in the judgment of the DECD commissioner, consistent with the strategic economic development priorities of the state and the municipality.

An eligible urban reinvestment project means a project:

- That would add significant new economic activity and new jobs in a new facility in the eligible municipality in which the project is located and will generate significant additional tax revenues to the state or the municipality;
- For which the use of the urban and industrial site reinvestment program will be necessary to attract private investment to an eligible municipality;
- That is economically viable;
- For which the direct and indirect economic benefits to the state outweigh the costs of the project; and,
- That is, in the judgment of the DECD commissioner, consistent with the strategic economic development priorities of the state and the municipality.

Recapture Provision

No later than July 1 in each year that tax credits are claimed, the DECD Commissioner may conduct a study to estimate the state revenue generated by the eligible project in which the investment is made. If the sum of all state revenue actually generated by the project is less than the amount of the total sum of tax credits claimed on the date of the analysis, the DECD Commissioner may determine an applicable recapture amount and may revoke the certificate of eligibility. Any taxpayer that has claimed credits related to a project for which the DECD Commissioner has revoked the certificate of eligibility will be required to recapture its pro-rata share of the recapture amount, and no subsequent credit will be allowed unless the certificate of eligibility is reinstated. The amount of the credit that the taxpayer is required to recapture varies depending upon the year in which the tax credit is required to be recaptured as follows:

Year	Percentage
Year 4	90%
Year 5	65%
Year 6	50%
Year 7	30%
Year 8	20%
Years 9-10	10%

The DRS Commissioner may recapture the credit first from a taxpayer who claimed the credit, then from any taxpayer who assigned the credit and finally, from any fund through which the investment was made.

History of Claims for the Urban and Industrial Site Reinvestment Tax Credit

Table 5.1 shows the Urban and Industrial Site Reinvestment tax credits claimed (the state's tax cost) by NAICS code and year. The claims presented in Table 4.6 represent the potential claims against a combination of the taxes imposed under Chapters 207, 208, 208a, 209, 210, 211, 211b, 212, 212a, or CGS §38a-743. Because these credits may be carried forward and/or assigned, we do not know the actual timing of claims and which industry actually claimed the credits.⁹ Further, if the credit is assigned, there are brokers who benefit and we do not know by how much or when brokers may have benefited. Therefore, for the analysis that follows, we assume the firm to which DECD awarded the credit claims the maximum allowable credit in each year in which it could make a claim based on the DECD audit. This approach provides the maximum benefit to the claiming firm and the greatest cost to the state. This approach misses the actual timing of tax costs and reductions in capital costs (benefits beyond the construction and hiring) in the actual industries claiming them by virtue of carryforwards and assignments. Note that DECD penalized FactSet in 2007, Diageo in 2009, and Lowe's from 2010-2012 for failing to meet their job targets. Note also that the total project costs listed in Table 5.1 are the basis for the tax credit award but do not represent the investment in Connecticut because most furniture, fixtures and equipment is not manufactured in the state.

In addition, if working capital was counted as part of the total project cost, we did not capture it as part of the economic impact because it typically represents wages and salaries that we capture separately in the economic analysis.

⁹ Actually, we know how much was claimed by which industry in certain income years from DRS data (\$94 was claimed in 2005 by firms in sector 238, \$287,621 by firms in sector 524 and \$560,040 by firms in sector 541 in 2007, \$6,009,750 in 2008 by firms in sector 524 and \$1,024,643 in 2009 by firms in sector 524). However, DRS data lacks credibility and we use the conservative approach above. For example, DRS incorrectly coded 2,874 tax returns claiming various credits in income year 2007 into NAICS 999999 that is a non-existent industry. For purposes of DRS tax credit analysis below, we assigned claims in sector 9999 to sector 541 (Professional, Scientific and Technical Services) in order for the money to find a way into the Connecticut economy in the economic model.

Table 5.1: Urban and Industrial Site Reinvestment Tax Credit Claims by NAICS for Income Years 2007 through 2012.

COMPANY	CITY	INDUSTRY	NAICS CODE	TAX CREDIT AWARD	Total Project Cost as of June 30, 2012	2006	2007	2008	2009	2010	2011	2012
Lowe's Home Centers, Inc.	Plainfield	Service, Warehousing	444110	\$20,000,000	\$80,000,000	NA	NA	\$2,000,000	\$2,000,000	\$1,948,013	\$1,508,123	\$2,976,128
Diageo North America, Inc.	Norwalk	Service, HQ	551114	\$40,000,000	\$107,100,000	\$4,000,000	\$4,000,000	\$4,000,000	\$2,624,000	\$6,720,000	\$6,616,000	\$6,912,000
Eppendorf Manufacturing Corporation	Enfield	Manufacturing	326199	\$5,000,000	\$23,100,000	\$500,000	\$500,000	\$500,000	\$500,000	\$1,000,000	\$1,000,000	\$1,000,000
FactSet Research Systems, Inc.	Norwalk	Financial Services	523991	\$7,000,000	\$36,050,000	NA	\$673,970	\$700,000	\$700,000	\$700,000	\$1,400,000	\$1,400,000
Greenwich Capital Markets, Inc n/k/a RBS Securities Inc.	Greenwich	Financial Services	52311	\$100,000,000	\$345,000,000	NA	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$20,000,000	\$20,000,000
Blue Sky Studios, Inc.	Greenwich	Information, Digital Animation	512110	\$18,000,000	\$65,000,000	NA	NA	NA	NA	NA	NA	NA
Prudential Retirement Insurance and Annuity Company	Hartford	Financial Services	524113	\$8,000,000	\$12,600,000	NA	NA	NA	\$800,000	\$800,000	\$800,000	\$800,000
Comcast of Connecticut, Inc.	Enfield	Information, Cable Broadcasting	515210	\$5,000,000	\$7,572,643	NA	NA	NA	\$500,000	\$500,000	\$500,000	\$500,000
Aldi, Inc. (Connecticut)	South Windsor	Wholesale, Foods	445110	\$1,900,000	\$52,400,000	NA	NA	NA	\$190,000	\$190,000	\$190,000	\$190,000
Burris Logistics, Inc.	Rocky Hill	Wholesale	424420	\$2,000,000	\$56,819,000	NA	NA	NA	NA	NA	NA	NA
Engineered Electric Company d/b/a DRS Vermont	Bridgeport	Manufacturing	335310	\$10,000,000	\$15,115,000	NA	NA	NA	NA	NA	\$1,000,000	\$1,000,000
CF Foods, LLC	New Britain	Manufacturing	311520	\$2,000,000	\$22,008,000	NA	NA	NA	NA	\$200,000	NA	NA
General Re Corporation	Stamford	Financial Services	524130	\$19,500,000	\$130,000,000	NA	NA	NA	NA	NA	\$1,950,000	\$1,950,000
Starwood Hotels & Resorts Worldwide, Inc.	Stamford	Service	561110	\$75,000,000		NA	NA	NA	NA	NA	NA	\$7,500,000
Gartner, Inc.	Stamford	Service	541910	\$20,000,000		NA	NA	NA	NA	NA	\$2,000,000	\$2,000,000
Nestle Waters North America, Inc.	Stamford	Manufacturing	312111	\$5,000,000		NA	NA	NA	NA	NA	\$500,000	\$500,000
Higher One, Inc.	New Haven	Financial Services	522320	\$18,500,000		NA	NA	NA	NA	NA	NA	NA
Eppendorf Manufacturing Corporation	Enfield	Manufacturing	326199	\$10,000,000	\$17,610,300	NA	NA	NA	NA	NA	NA	\$1,000,000
Design Within Reach, Inc.	Stamford	Retail	442110	\$1,500,000	\$5,000,000	NA	NA	NA	NA	NA	NA	NA
Chemtura Corporation	Middlebury	Manufacturing	327123	\$8,000,000	\$11,734,000	NA	NA	NA	NA	NA	NA	\$800,000
CIGNA Health & Life Insurance Company	Bloomfield	Financial Services	524114	\$50,000,000		NA	NA	NA	NA	NA	NA	NA
FactSet Research Systems, Inc.	Norwalk	Financial Services	523991	\$8,000,000		NA	NA	NA	NA	NA	NA	NA
Source: DECD, OFR			TOTALS	\$434,400,000	\$987,108,943	\$4,500,000	\$15,173,970	\$17,200,000	\$17,314,000	\$22,058,013	\$37,464,123	\$48,528,128

Methodology for Modeling the Urban and Industrial Site Reinvestment Tax Credit

Because DECD performs an annual audit as required by statute of each claiming firm's Connecticut project, we present the net, aggregate economic impact of sixteen companies appearing in Table 5.1 claiming their potential credits for calendar years 2007 through 2012 using actual company data from these audits.¹⁰ These sixteen are the companies that have made claims so far, resulting in DECD audits. Corresponding project start dates are calendar years 2002 through 2009. Projects typically consist of a construction and/or renovation phase in which a site is secured and a new facility is built. For an existing site, the firm typically undertakes an expansion and/or renovation of its current facilities.

The construction phase usually includes some of the following expenditures for architectural and engineering services, building construction and/or leasehold improvements to an existing structure and site improvements consisting of access roads, parking lots, utility hookups, as well as the installation of furniture, fixtures and equipment. To the extent the firm purchases these goods and services in Connecticut, the purchases provide part of the economic and fiscal impact of the project. If there is a real estate purchase, there are conveyance taxes paid to the state and the town in which the firm locates or expands. Real estate brokers receive a fee as well for their services in a real estate transaction. There may be permit fees related to construction and/or renovation paid to the town as well.

We assume the firm purchases office furniture and equipment, computer hardware and software wholesale or through dealers in Connecticut unless otherwise indicated. We increase the state's stock of non-residential capital by the dollar amount of construction as well as by the dollar amount of furniture, fixtures and equipment used to outfit the new or renovated structure no matter where purchased. The increase in the state's stock of non-residential capital approximates the additions to the Grand List of the municipality in which the project occurs.

Total project costs typically exceed the value of the increase in the non-residential capital stock because project costs may include working capital, relocation costs, architectural and engineering, legal, financial and other services that do not increase the value of the state's capital stock. If these costs represent purchases from Connecticut businesses, they create economic and fiscal impact for the state. For relocations to the state, we obtain detailed purchasing reports and aggregate purchases by NAICS industry codes to represent assumed net new sales in industries providing goods and services to the firm receiving the tax credit (see below).

¹⁰ Firms may not claim credits in the years in which they are eligible for several reasons (carryforward, carryback, assignment or they do not provide audit information in a timely manner). Further, the DECD audit may reduce a firm's claim and penalize it for not meeting its job creation commitment. DECD has not audited firms' whose project start dates commenced after June 29, 2008, however their approved projects have contributed to the state's economic growth. In addition, DECD penalized FactSet in 2007, Diageo in 2009 and Lowe's in xxxx for not achieving their employment targets.

When new, renovated or expanded facilities are ready for occupancy, the firm typically relocates some workers and hires others and the firm's employment ramps up according to plan. We assume that as firms hire new workers, they compete with other firms for the same labor and some of the firm's new hires leave their current positions in Connecticut firms and therefore do not represent net new jobs to the state (this is job displacement). Depending on where the firm's workers live¹¹ and their average compensation (wages plus non-wage fringe benefits) relative to the average compensation of the Connecticut industry in which the firm is situated, we adjust the economic model to account for these effects.¹² The cost to the state is the forgone tax revenue equal to the credit claimed. We account for the tax cost by reducing government spending across the board to maintain a balanced budget. We assume taxes are not increased to make up the lost revenue from the credit claims. We assume the claiming firm's cost of capital declines by an amount equivalent to the tax credit claimed.

However, we assume a range of responses to the tax credit. At one extreme, we assume that the firm would not have relocated or expanded in the state absent the credit. An intermediate case is our assumption that the firm would have undertaken half its expansion absent the credit or, in other words, the credit induced half the expansion. The third scenario is the case in which the firm would undertake 80% of the expansion in any case or, in other words, the credit induced 20% of the expansion.

For firms that are new to the state or that we assume are equivalent to new because they would have left the state absent the credit, we use the firm's actual goods and services purchases from Connecticut vendors to model its demand for intermediate goods. Services include labor services provided by independent contractors but not those provided by the firm's vendors onsite. We model independent contractors services as an increase in household consumption equal to the payment for such services. The firm may hire vendors to supply services that may include the vendor's employees working at the claiming firm's site. We model such purchases as net new sales for the vendor's industry.

An example is buying mail room services from Pitney Bowes. Pitney Bowes may supply equipment and its own employees to operate the claiming firm's mailroom. The claiming firm's purchase of Pitney Bowes' services represents new sales in the office machinery manufacturing industry (NAICS 333313) and adds to the project's impact if the firm providing services is located in Connecticut.

For resident firms that expand in the state, we let the economic model determine the incremental intermediate inputs necessary to support the expansion because there is no way to untangle the firm's current purchases from the purchases necessary to support its expansion.

¹¹ For example, some workers in a firm that locates close to a Connecticut border may reside in another state. These workers pay income taxes in Connecticut and perhaps in the state in which they reside, but their household consumption is outside Connecticut. We account for this by removing their incomes from Connecticut representing a change in commuting pattern from the status quo.

¹² We adjust the compensation for the industry in which the firm is situated by the compensation differential between the firm and its industry estimate. The compensation differential is a weighted average of the firm's management and non-management wages and fringes and applies exclusively to new jobs created.

Net Economic Impact of the Urban and Industrial Site Reinvestment Tax Credit

Table 5.2 shows the changes of certain economic variables with respect to the baseline or status quo forecast of the state economy due to the five firms' combined projects for the assumed range of inducement. Note that the 100% case represents one in which the entire project occurred because of the credit or, in other words, the project would not have occurred absent the credit. The 50% and 20% cases represent a corresponding reduction in project costs and employment but not a reduction in the tax cost (revenue forgone) or benefit from a reduction in the firms' capital cost equal to the tax cost. Thus, while project costs are smaller in these latter cases, the relative offsetting tax cost is greater as is the relative importance of the firms' reduced cost of capital. Therefore, the three cases' results are not proportional.

It is clear from Table 5.2 that these projects produced more net state revenue than they cost (the change in net state revenue includes the offsetting reduction in state spending equal to the actual dollar amount of claims in row three under the row headings). State expenditures decline below the baseline forecast in several years (2003-2005 and 2007-2008). This occurs when employment increases and reduces spending on social assistance, unemployment insurance, workers' compensation and other insurance trust expenditures. Note that the total annual claims reflect the penalties levied appearing in Table 5.1.

Recommendation:

We recommend maintaining the URA tax credit program as is because it has generated sizable net benefits in each assumed case of inducement. Moreover, qualifying firms must be audited each year and may incur penalties and/or reduced tax credits if they do not meet job or net benefit requirements (usually interpreted as cumulative net state revenue exceeding the credit allowable). PA 13-184 (§ 95) (1), effective July 1, 2013, allows the DECD Commissioner to pay taxpayers holding urban and industrial sites reinvestment tax credits for their credit eligibility certificates and (2) authorizes up to \$40 million in bonds for this purpose, \$20 million of which is available on July 1, 2014.

Table 5.2: URA Tax Credit Economic Impact Results

DECD URA Tax Credit Economic Impact Results											
Changes From Baseline											
100% Case	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Average Annual Change
Economic Variable											
Total New Direct Employment	671	891	1,560	1,826	2,277	3,729	3,974	5,274	5,132	5,799	3,113
Total New Plant and Equipment Investment	\$1,053,519	\$46,827,431	\$142,578,983	\$52,267,343	\$155,317,535	\$345,477,524	\$141,665,559	\$106,133,791	\$66,023,113	\$15,442,479	\$107,278,728
Total Assumed Claims (Tax Cost/Revenue Forgone)	\$0	\$0	\$0	\$4,500,000	\$15,173,970	\$17,200,000	\$17,314,000	\$22,058,013	\$37,464,123	\$48,528,128	\$23,176,891
Total New Employment	1,745	3,052	4,729	4,174	6,484	14,404	12,208	16,333	16,343	18,661	9,813
New State GDP (Nominal \$)	\$161,729,927	\$227,443,747	\$290,343,229	\$274,096,680	\$374,297,547	\$854,446,047	\$793,018,516	\$1,145,694,870	\$1,155,230,436	\$1,375,045,900	\$665,134,690
New Construction Employment	103	617	1,318	446	1,645	3,697	1,606	1,401	1,451	1,254	1,354
New Manufacturing Employment	12	27	51	63	104	565	617	1,021	630	497	359
New Service-Providing Industries' Employment	1,377	2,057	2,973	3,333	4,400	8,680	8,381	11,328	11,576	14,063	6,817
New State Revenues (Nominal \$)	\$13,713,838	\$21,234,412	\$28,256,835	\$29,945,747	\$45,275,356	\$108,000,000	\$101,328,416	\$135,700,261	\$145,992,820	\$177,883,850	\$80,733,153
New State Expenditures (Nominal \$)	-\$2,571,345	-\$4,423,836	-\$6,380,576	\$2,807,414	-\$1,926,611	-\$32,000,000	-\$1,003,252	\$5,101,514	\$23,984,535	\$40,235,633	\$2,382,348
Net New State Revenues (Nominal \$)	\$16,285,182	\$25,658,248	\$34,637,411	\$27,138,333	\$47,201,967	\$140,000,000	\$102,331,667	\$130,598,747	\$122,008,285	\$137,648,217	\$78,350,806
50% Case											
Total New Direct Employment	335	446	780	913	1138	1865	1987	2637	2566	2900	1557
Total New Plant and Equipment Investment	\$526,760	\$23,413,716	\$71,289,491	\$26,133,671	\$77,658,767	\$172,738,762	\$70,832,780	\$53,066,895	\$33,011,557	\$7,721,239	\$53,639,364
Total New Employment	1,001	1,523	2,449	1,951	3,064	6,979	5,720	8,040	8,130	9,012	4,787
New State GDP (Nominal \$)	\$87,270,109	\$113,322,849	\$149,095,172	\$130,522,229	\$180,721,442	\$417,927,483	\$377,905,788	\$567,480,345	\$582,875,830	\$695,085,702	\$330,220,695
New Construction Employment	63	312	667	210	808	1,837	747	684	757	566	665
New Manufacturing Employment	7	14	26	30	50	276	258	441	300	288	169
New Service-Providing Industries' Employment	795	1,023	1,532	1,594	2,157	4,293	4,024	5,696	5,802	6,931	3,385
New State Revenues (Nominal \$)	\$8,571,149	\$10,617,206	\$15,495,684	\$14,037,069	\$21,192,720	\$51,000,000	\$45,146,324	\$65,299,374	\$67,782,381	\$78,353,600	\$37,749,551
New State Expenditures (Nominal \$)	-\$1,714,230	-\$1,769,534	-\$3,646,043	\$1,871,609	-\$963,305	-\$13,000,000	\$2,006,503	\$3,060,908	\$11,470,864	\$22,235,481	\$1,955,225
Net New State Revenues (Nominal \$)	\$10,285,378	\$12,386,740	\$19,141,727	\$12,165,460	\$22,156,025	\$64,000,000	\$43,139,821	\$62,238,466	\$56,311,516	\$56,118,119	\$35,794,325
20% Case											
Total New Direct Employment	134	178	312	365	455	746	795	1,055	1,026	1,160	623
Total New Plant and Equipment Investment	\$210,704	\$9,365,486	\$28,515,797	\$10,453,469	\$31,063,507	\$69,095,505	\$28,333,112	\$21,226,758	\$13,204,623	\$3,088,496	\$21,455,746
Total New Employment	401	609	985	722	1,038	2,632	2,206	3,252	3,145	3,245	1,824
New State GDP (Nominal \$)	\$35,228,301	\$45,488,749	\$59,638,069	\$49,905,558	\$65,029,473	\$162,857,863	\$152,475,501	\$234,005,136	\$232,168,351	\$259,883,675	\$129,668,068
New Construction Employment	25	125	267	81	309	721	293	268	265	217	257
New Manufacturing Employment	3	5	10	12	19	112	124	207	129	102	72
New Service-Providing Industries' Employment	316	408	614	625	827	1,706	1,639	2,351	2,341	2,659	1,349
New State Revenues (Nominal \$)	\$3,428,459	\$4,423,836	\$6,380,576	\$5,614,827	\$7,706,444	\$20,000,000	\$18,058,530	\$26,527,871	\$27,112,952	\$29,647,308	\$14,890,080
New State Expenditures (Nominal \$)	-\$857,115	-\$884,767	-\$911,511	\$935,805	\$963,305	-\$5,000,000	\$1,003,252	\$1,020,303	\$5,214,029	\$10,588,324	\$1,207,163
Net New State Revenues (Nominal \$)	\$4,285,574	\$5,308,603	\$7,292,086	\$4,679,023	\$6,743,138	\$25,000,000	\$17,055,278	\$25,507,568	\$21,898,923	\$19,058,984	\$13,682,918

New Jobs Creation Tax Credit (Replaced with the Job Expansion Tax Credit, effective January 1, 2012)

A tax credit is available to taxpayers that create at least 10 new jobs in Connecticut against taxes imposed under CGS §§12-202 or 12-210 of Chapter 207 and Chapters 208 and 212. It intends to reduce the cost of hiring new workers and thereby act as an inducement to increase employment in the state. Before modification in 2010, the tax credit applied to any firm in any industry except those firms whose taxable profits accrue to the owners' personal income tax such as LLCs and LLPs. The tax credit allowed is an amount up to 60% of the income tax deducted and withheld from the wages of new employees and paid over to the state according to Chapter 229 of the CGS (personal income tax). No later than 30 days after the close of the taxpayer's income year, the taxpayer must provide DECD with information regarding the number of new jobs created for the year and the income tax deducted and withheld from the wages of such new employees and paid to the state for such year. The Commissioner will issue a certificate of eligibility that includes the amount of the credit certified for the year. The tax credit may be granted to a taxpayer for not more than five successive income years. No carryforward or carry back is allowed. This credit is not assignable.

The relevant statutes are CGS §12-217ii amended by 2007 PA 250, §18. The statute was modified in 2010 to allow any profit-making firm to apply for the credit and apply the credit to the personal income tax. Under the revision, a firm with up to 50 employees may apply for the credit if it creates one new job. The discussion below applies to the new jobs creation tax credit program as it existed before July 1, 2010.

Definitions

'Taxpayer' means a person subject to tax under Chapters 207, 208, or 212 of the Connecticut General Statutes. A 'new job' means a full-time job that 1) did not exist in Connecticut prior to the taxpayer's application to the DECD commissioner for an eligibility certificate and 2) is filled by a new employee. 'New employee' means a person hired by the taxpayer to fill a new job. A new employee does not include a person who worked in Connecticut for a related person with respect to the taxpayer within the prior 12 months. 'Full-time job' means a job in which an employee is hired to work at least 35 hours per week and does not include a temporary or seasonal job.

Recapture Provisions

A taxpayer shall be required to recapture a percentage of the tax credit allowed if:

- The number of new employees on account of which a taxpayer claimed the tax credit decreases to less than the number for which the Commissioner issued an eligibility certificate during any of the four years succeeding the first full income year following the issuance of an eligibility certificate; and,

- Those employees are not replaced by other employees who have not been shifted from an existing location of the taxpayer or a related person in this state.

The taxpayer will be required to recapture a percentage of the credit as follows:

Year	Percentage
Recapture Year 1	90% of the credit allowed
Recapture Year 2	65% of the credit allowed for the entire period of eligibility
Recapture Year 3	50% of the credit allowed for the entire period of eligibility
Recapture Year 4	30% of the credit allowed for the entire period of eligibility

Methodology and Net Economic Impact of the New Jobs Creation Tax Credit

Table 5.3 shows the New Jobs Creation tax credits claimed (the state’s tax cost) by NAICS code and year. The credit allocation, awarded in anticipation of net new jobs created and using the Connecticut economic model, will be drawn down as the firm hires new workers. An annual audit determines whether job targets are achieved.

We model the economic and fiscal impact of the New Jobs Creation tax credit by increasing employment in the indicated industry by the number of jobs certified by audit (28 for Sparta, 203 for Sun Products, 222 for Burriss Logistics, 10 for Asterisk Financial, 17 for Carter Retail, and 26 for Tire Rack by 2012). In addition, we approximate a balanced state budget by reducing state spending across the board that manifests as reduced state employment in the economic model. We assume the tax credit reduces the firm’s non-wage labor costs such as advertising, interviewing, relocating and training costs.

We assume a range of inducements from no job creation absent the credit to 80% of the jobs would have been created absent the credit or, in other words, 20% of the jobs created were induced by the credit.

Table 5.3: New Jobs Creation Tax Credit Claims by NAICS

New Jobs Creation Tax Credit Program					Tax Credits Claimed				
Contract Start Date	COMPANY	INDUSTRY	NAICS CODE	Credit Allocation	2009	2010	2011	2011 Recapture	2012
June 24, 2008	Sparta Insurance Holdings, Inc.	Financial Services	524126	\$508,711	\$36,192	\$60,367	\$92,571	\$0	\$121,252
March 6, 2009	Carter's Retail, Inc.	Service	448130	\$471,529	NA	\$24,553	\$44,633	\$0	NA
March 5, 2009	Burris Logistics	Wholesale	424420	\$1,008,210	\$205,691	\$226,127	\$271,441	\$0	\$284,688
July 31, 2009	Sun Products	Manufacturer	325611	\$1,496,426	\$314,591	\$330,901	\$384,663	\$0	\$350,000
August 17, 2009	Tire Rack, Inc.	Wholesale	423130	\$177,277	NA	\$17,243	\$25,588	-\$15,519	\$19,530
September 11, 2009	Mercuria Energy Trading, Inc.	Financial Services	523140	\$472,500	NA	NA	NA	NA	NA
March 1, 2010	Asterisk Financial, Inc.	Financial Services	524290	\$1,081,437	NA	\$17,792	\$0	-\$16,013	\$0

The impact of the claims follow from the new direct jobs created by each company and reduced non-wage labor costs offset by reduced government spending across the board representing the tax cost of the claimed credits. In addition, we make employee residency adjustments for Sun Products and Burris Logistics to account for their employees who reside out-of-state. Out-of-state commuters pay personal income tax to Connecticut and to the state in which they live if necessary, but their household consumption is outside the state and requires a residency or commuting pattern adjustment to the economic model. Further, if a firm's average compensation (wages plus non-wage fringe benefits) differs from the economic model's estimated average compensation for the industry, we adjust the compensation for the industry in which the firm is situated by the compensation differential between the firm and its industry estimate. The compensation differential is a weighted average of the firm's management and non-management wages and fringes and applies exclusively to the new jobs created. Finally, we assume that as firms hire new workers, they compete with other firms for the same labor and some of Sun's and Sparta's new hires leave their current positions in Connecticut firms and do not represent net new jobs to the state (this is job displacement).

As a consequence of the new job creation tax credit program as it existed prior to January 1, 2012, our results show that total employment increased by 691 jobs (full- and part-time) in all sectors including the self-employed as a result of the new jobs these companies added and accounting for the tax cost offset. Private, non-farm (payroll) employment increased by 616 full- and part-time jobs, state GDP increased by \$94 million and net state revenue increased by \$5.7 million (recall the direct tax cost was \$2.8 million).

Recommendation:

The New Job Creation tax credit was replaced by the Jobs Expansion tax credit (see page 126). The Job Expansion Tax Credit was passed in the October 2011 as part of the bipartisan jobs package and was designed to replace other underutilized tax credits by creating a clearer, more streamlined program that also increased the incentives available for creating jobs.

Insurance Reinvestment Fund Tax Credit

The following discussion pertains to the Insurance Reinvestment Fund tax credit program before the legislature modified it in the 2010 legislative session. The original intent of the program was to stimulate investment in Connecticut's insurance businesses and those businesses providing services to insurance companies ostensibly to help them grow more than they would absent the credit.

Tax credits were available to taxpayers making investments in an Insurance Reinvestment Fund that then reinvests in Connecticut companies engaged in an insurance business or companies providing services to insurance companies. The credit could be applied against the taxes imposed under Chapters 207 (Insurance, Hospital and Medical Services Corp. Tax), 208 (Corporate tax), or 229 (Income tax) or CGS §38a-743 (insurance premiums tax). No two taxpayers could be eligible for a tax credit with respect to the same investment, employee or facility.

The insurance reinvestment fund was managed by fund management firms registered by the DECD commissioner. Investors could make debt or equity investments and receive a dollar for dollar tax credit equivalent to their investment prorated over ten years such that 10% of the credit could be claimed in years four through seven and 20% of the credit could be claimed in years eight through ten. In addition, investors shared investment gains or losses according to individual arrangements each investor had with the fund manager(s). However, the terms of debt investments are unknown as are the returns from equity investments and therefore returns from investments are not considered in the economic analysis that follows. Further, benefits to brokers engaged in the assignment process and to fund managers for their work are unknown and are not considered in the economic analysis below.

The tax credit could only be claimed with respect to an income year for which a certification of continued eligibility was issued by DECD to the insurance business in which the investment was made. In order to obtain a certificate of continued eligibility, the insurance business in which the investment was made had to annually submit the information required by DECD to determine whether the occupancy and employment requirements were met. Therefore, we assume the requirements that insurance businesses receiving investments occupied a new facility and increased their employment by 25% were satisfied. We do know the number of jobs created as a result of the investment in each company because the recertification process required fund managers to report the jobs at application and jobs at recertification. The difference is ostensibly due to the investment.

Recapture Provision

A taxpayer had to recapture a percentage of the tax credit allowed for the entire period of eligibility if an investment was made in an insurance company or in a company that provided services to an insurance business if:

- The number of new employees on account for which a taxpayer claimed the credit decreased to less than 25% of its total work force for more than 60 days during any of the taxable years for which the credit is claimed;
- Those employees were not replaced by other employees who were not shifted from an existing location of the subject insurance business in Connecticut; and,
- The insurance business in which the investment was made had relocated to a location outside Connecticut.

The recapture provision did not apply and the tax credits could continue to be claimed if, for the entire period that the credit was applicable, the decline in the percentage of the total work force employed in Connecticut on a regular, full-time and permanent basis did not result in an actual decline in the number of persons employed by the subject insurance business in Connecticut.

The taxpayer had to recapture a percentage of the tax credit that was related to an investment in a company that met the requirements provided above as follows:

Year	Percentage
Year 4	90%
Year 5	65%
Year 6	50%
Year 7	30%
Year 8	20%
Years 9 and 10	10%

The DRS commissioner could recapture the credit first from any taxpayer who claimed the tax credit, then from any taxpayer who assigned the tax credit and finally from any fund through which the investment that generated the tax credit was made.

Table 5.4 shows the Insurance Reinvestment Fund tax credits claimed (the state's tax cost) by industry designated by NAICS code and year (2010 is the most recent income year for which complete DRS claim data is available). Because DRS provides actual claims by industry and year representing claims by the industry awarded the credit and claims by industries purchasing the credit, we can correctly situate in time and industry the economic and fiscal impacts of this credit program. That is, we capture carry forwards and assignments. However, if the credit is assigned, there are brokers who benefit and we do not know by how much or when brokers may have benefited. Further, Table 5.4 shows equal distributions of certain

credit amounts in 2001 and earlier because DRS organized the credits by the Standard Industrial Classification (SIC) codes that map one-to-many into NAICS codes that replaced SIC codes in 2001. DECD distributes a given dollar amount in a given SIC industry in a given year equally among the NAICS codes to which it maps. Individual investors may claim a credit on their personal income tax; this appears in the top row of Table 5.4.

For this tax credit program, we do not measure a range of inducements because without the program, investors would likely not invest in insurance businesses and/or in those businesses providing services to insurance companies. If investors did invest in insurance businesses and/or in those businesses providing services to insurance companies without claiming the credit, they would receive normal returns under current capital market conditions, but they would not receive a tax credit. Further, there was protection from bankruptcy provided by CGS §38a-88a not available under normal circumstances. We assume therefore that the investments occurring under the Insurance Reinvestment Fund tax credit program were entirely due to the program and would not have occurred otherwise. Table 5.5 shows the total investments fund managers made in each industry from 1996 through 2013 (this data is available from fund managers' reports to DECD).

Table 5.4: Insurance Reinvestment Fund Tax Credit Claims by NAICS Industry for Income Years 1999 through 2010

Insurance Reinvestment Fund Tax Credit Claims		Credits Claimed											
Industry	NAICS Code	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Totals
Individual Investors	NA	NA	NA	NA	NA	\$1,053,731	\$1,010,570	\$2,012,100	\$1,600,700	\$1,753,620	\$808,356	\$803,329	\$9,042,406
Apparel Manufacturing	315	\$0	\$0	\$0	\$0	\$0	\$0	\$150,000	\$88,969	\$61,022	\$0	\$0	\$299,991
Plastics and Rubber Products Manufacturing	326	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$59,081	\$59,081
Machinery Manufacturing	333	\$0	\$134	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Computer and Electronic Product Manufacturing	334	\$0	\$134	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous Manufacturing	339	\$0	\$134	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Merchant Wholesalers, Durable Goods	423	\$0	\$0	\$0	\$637	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Couriers and Messengers	492	\$0	\$0	\$0	\$0	\$0	\$0	\$740,514	\$1,042,621	\$1,432,805	\$0	\$0	\$3,215,940
Telecommunications		\$0	\$0	\$0	\$0	\$0	\$0	\$928,504	\$4,571,119	\$1,927,935	\$0	\$0	\$7,427,558
Monetary Authorities-Central Bank	521	\$2,760	\$1,936	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Credit Intermediation and Related Activities	522	\$2,760	\$1,936	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	\$2,760	\$1,936	\$32,101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Insurance carriers and Related Activities	524	\$0	\$0	\$0	\$0	\$0	\$12,094,964	\$15,174,661	\$11,668,879	\$4,686,833	\$4,855,036	\$1,414,037	\$49,894,410
Funds, Trusts and Other Financial Vehicles	525	\$0	\$0	\$32,101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	533	\$0	\$0	\$32,101	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Management of Companies and Enterprises	551	\$0	\$0	\$32,101	\$333,403	\$314,773	\$159,615	\$346,732	\$165,949	\$169,074	\$343,886	\$344,043	\$1,844,072
Totals		\$8,281	\$6,210	\$128,403	\$334,040	\$1,368,504	\$13,265,149	\$19,352,511	\$19,138,237	\$10,031,290	\$6,007,278	\$2,620,490	\$71,783,459

Table 5.5: Insurance Reinvestment Fund Tax Credit Fund Managers' Investments by NAICS Industry for Income Years 1996 through 2013

NAICS Industry Description	NAICS Industry Code	All Investments 1996- 2013
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	\$76,000,000
Insurance Carriers and Related Activities	524	\$67,710,024
Management of Companies and Enterprises	551	\$50,125,000
Ambulatory Health Care Services	621	\$50,000
Total		\$193,885,024

Table 5.6: Jobs Created by the Insurance Reinvestment Fund Tax Credit by Industry and Year

NAICS Industry Description	NAICS Industry Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	0	46	100	135	146	157	207	103.5	107.5	94.5	93.5	11	94	0	1,295
Insurance Carriers and Related Activities	524	117	153	128	194	360.5	32	33	40	78	17	22	0	0	12	1,186.5
Management of Companies and Enterprises	551	0	24	13	12	10	13	21	22	20	21	0	0	0	0	156.0
Ambulatory Health Care Services	621	0	0	0	33	0	0	0	0	0	0	0	0	0	0	33.0
Total		117	223	241	374	517	202	261	166	206	133	116	11	94	12	2671

Net Economic Impact of the Insurance Reinvestment Fund Tax Credit

We model the impacts of this credit by reducing the claiming firms' cost of capital offset by government spending reduced by the aggregate credits claimed each year for income years 1999 through 2010. The amounts claimed represent investments that insurance and related companies received earlier than the years in which the claims appear. We determine the amounts invested in the insurance industry from insurance reinvestment fund managers' annual reports. Individual investors reduced their personal income taxes by the amount of their investment shown in the top row of Table 5.4. The amounts invested reduce the cost of capital of the companies receiving investment (Table 5.5). In addition, the fund managers' reports identify the number of jobs created in the companies (industries) as a result of their investment shown in Table 5.6 (fractions represent part-time workers for which we assume two half-time workers equal one full-time worker). We assume firms hiring these workers had to compete with other firms and there was job displacement in the process.

Table 5.7 reports the results of the economic simulation. These numbers represent the changes (net new economic activity) from the baseline forecast of the Connecticut economy induced by the Insurance Reinvestment Tax Credit. We notice that net state revenue that includes the tax cost is positive throughout the study period. Row three in Table 5.7 repeats the claims for all industries from Table 5.4 while row 26 (state gross domestic product) proxies benefits of this tax credit program. We model tax cost (revenue forgone) as across-the-board reduced state spending to maintain a balanced state budget. We assume taxes are not increased to cover lost revenue and the mechanism available in the model is to reduce state employment in response to spending cuts across the board.

Therefore, referring to Chart 5.1, as claims significantly increased in income years 2005 through 2007, the net new economic activity induced by firms claiming the credit through their direct investment and new jobs created was insufficient to offset the decline in state revenue and the modeled response of state employment reductions. Note that 'total jobs' includes public and private sector jobs. For the period 1999 through 2010, the program created more jobs than it cost and generated more state revenue than expenditure. Chart 5.1 shows the changes in jobs and net state revenue and the absolute level of claims in nominal dollars.

Chart 5.1: Total and Non-farm Employment, Net State Revenue Changes and Claims

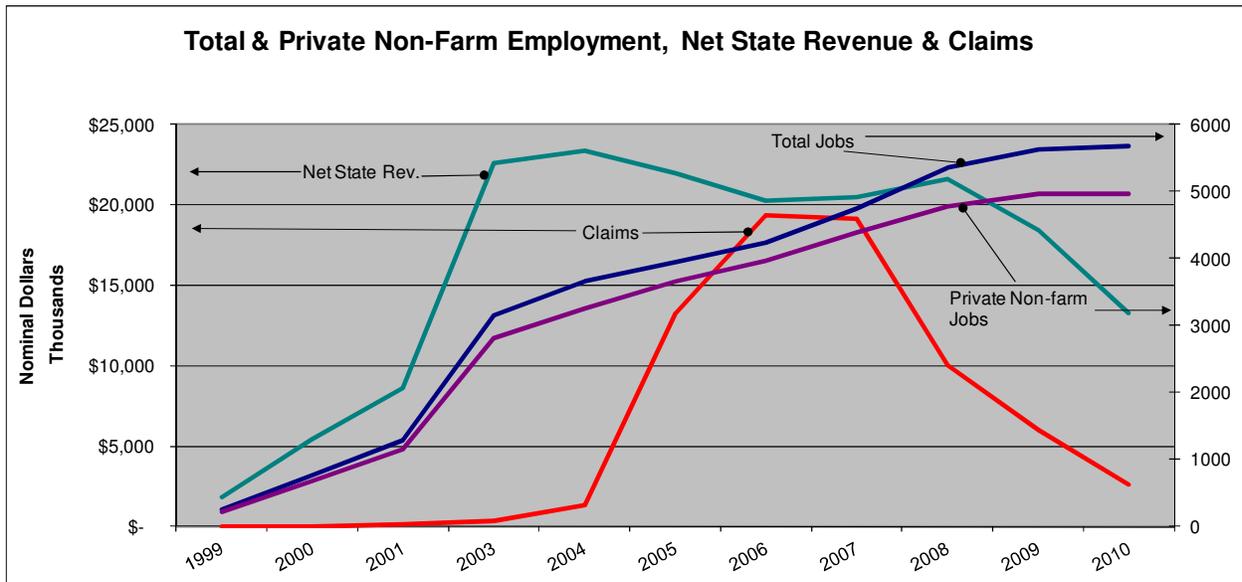


Table 5.7: Insurance Reinvestment Tax Credit Economic and Fiscal Impact

Economic Variable	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average Change
Total New Employment Change	251	758	1289	3145	3663	3949	4245	4754	5355	5630	5682	3520
Total Claims	\$8,281	\$6,210	\$128,403	\$334,040	\$1,368,504	\$13,265,149	\$19,352,511	\$19,138,237	\$10,031,290	\$6,007,278	\$2,620,490	\$ 6,569,127
Employment Change in:												
Utilities	0.3	0.9	1.5	3.4	4	4.2	4.5	5	5.7	5.9	6	4
Construction	11.3	39.3	76.7	186.2	248.4	275.1	304.9	346.3	396.9	410.6	409.3	246
Manufacturing	2.2	6.3	9.6	22.2	22	19.5	18	17.4	17.2	14.8	11.9	15
Wholesale Trade	4	12.5	20.7	47.9	54.9	57.6	61.2	66.9	74	76.5	77	50
Retail Trade	16.4	50	83.9	198.3	231.2	251.7	272.7	299.2	327.4	339.4	344.3	220
Transportation and Warehousing	0.6	1.9	3	7.3	7.6	6.6	5.8	5.7	6.2	5.5	4.4	5
Information	1.4	5.3	9.5	23.3	27.9	32.5	36.4	43.4	48.9	50.3	48.8	30
Finance and Insurance	119.1	321.5	550.1	1392.9	1574.1	1801.2	1931.9	2105.5	2208.6	2310.2	2307.4	1511
Real Estate and Rental and Leasing	6.3	20.6	35.9	87.5	102.2	112.9	120.1	130.8	141.4	142.8	137.2	94
Professional and Technical Services	9.2	34.3	59.1	141.5	163.9	181.5	195.4	218	243.5	246.2	236.4	157
Management of Companies and Enterprises	0.3	23.1	35.4	57.5	68.6	86.9	106.1	123.6	142	140.6	138.9	84
Administrative and Waste Services	15	43.9	72.9	177.6	201.6	217.3	231.7	257.1	285.3	296	293.8	190
Educational Services	1.7	5.4	9.8	24	31	35.7	41.1	48.5	57.1	63	66.4	35
Health Care and Social Assistance	14.9	44.3	73.5	185.5	217.2	237.5	260.3	296.8	340.4	359	366.2	218
Arts, Entertainment, and Recreation	2.2	8.5	14.7	34.2	41.3	47.4	53.1	61	68.2	71.2	72.2	43
Accommodation and Food Services	6.9	22.5	39.5	93.8	116.8	135	153	175.9	200.6	215.1	224.8	126
Other Services, except Public Administration	10.1	31.2	52.1	125.5	144.8	156.9	169	188.9	211.7	218.4	217	139
Private Non-Farm Employment	221.9	671.5	1147.9	2809	3258.1	3660.2	3965.6	4390.4	4775.9	4966.3	4962.4	3166
State Government	10	29.9	47.2	112.2	135.3	-30.1	-80.9	-48	119.2	176.2	225.7	63
Local Government	19.1	56.6	94.1	224	269.2	319.3	360.5	411	460	487.5	493.6	290
New Gross Domestic Product	\$ 22,729,889	\$72,026,291	\$126,507,339	\$327,044,446	\$399,038,367	\$469,200,000	\$535,193,793	\$628,386,864	\$740,528,793	\$794,667,136	\$819,478,616	\$448,618,321
New State Revenues at State Average Rates	\$ 1,646,735	\$ 4,524,085	\$ 7,751,108	\$ 19,006,029	\$ 23,908,371	\$ 28,315,541	\$ 32,733,597	\$ 38,401,849	\$ 45,088,343	\$ 48,390,154	\$ 50,816,996	\$ 27,325,710
New State Expenditures at State Average Rates	\$ (181,749)	\$ (915,706)	\$ (873,877)	\$ (3,575,520)	\$ 523,090	\$ 6,355,759	\$ 12,471,415	\$ 17,895,389	\$ 23,452,247	\$ 29,978,189	\$ 37,510,490	\$ 11,149,066
Net New State Revenues	\$ 1,828,484	\$ 5,439,791	\$ 8,624,985	\$ 22,581,549	\$ 23,385,281	\$ 21,959,782	\$ 20,262,182	\$ 20,506,460	\$ 21,636,096	\$ 18,411,965	\$ 13,306,506	\$ 16,176,644

Recommendation:

We recommend that the Insurance Reinvestment tax credit continue as revised by the legislature in 2010, and, per the Governor's Task Credit Taskforce recommendation, to increase the cap from \$200 million to \$300 million. The new credit program allows for closer monitoring and penalties for not achieving at least state revenue neutrality (that is, the investments must create net new economic activity that in turn generates net state revenue not less than zero in each of the investment fund's operation under the program). This is an effective program that is well tracked and provides support to industries important to the state.

Film Production Tax Credit

The Commission on Culture and Tourism (CCT) administered this tax credit program before the legislature transferred administrative responsibility to DECD in 2009. The relevant statutes for this analysis are CGS §12-217jj amended by 2007 PA 236, §1; 2007 PA 4, §§69, 70 (June Spec. Sess.) and 2007 PA 5, §13 (June Spec. Sess.). An eligible production company that produces a qualified production and incurs qualified production expenses or costs in excess of \$50,000 may apply for a tax credit equal to 30% of production expenses and costs incurred in Connecticut. This credit may be applied against the taxes imposed under Chapter 207 and Chapter 208 of the Connecticut General Statutes. This tax credit may be assigned to another Connecticut taxpayer. Expenses claimed for the film production tax credit may not be used in claiming either the digital animation tax credit or the infrastructure tax credit (see below). This tax credit intends to attract more film productions to the state than if the credit did not exist.

Definitions

'Eligible production company' means a corporation, partnership, limited liability company, or other business entity that is engaged in the business of producing qualified productions on a one-time or ongoing basis, and is qualified by the Secretary of the State to engage in business in the state.

'Qualified production' means entertainment content created in whole or in part within the state, including motion pictures; documentaries; long-form, specials, mini-series, series, sound recordings, videos and music videos, and interstitials television programming; interactive television; interactive games; video games; commercials; infomercials; any format of digital media, including an interactive website, created for distribution or exhibition to the general public; and any trailer, pilot, video teaser, or demo created primarily to stimulate the sale, marketing, promotion, or exploitation of future investment in either a product or a qualified production via any means and media in any digital media format, film, or videotape, provided such program meets all the underlying criteria of a qualified production.

‘Production expenses and costs’ means those qualifying expenditures that are clearly and demonstrably incurred in the state in the development, preproduction, production, or post production cost of a qualified production, provided that: 1) on or after January 1, 2009, 50% of such expenses or costs shall be counted toward such credit when incurred outside the state and used within the state, and 100% of such expenses or costs shall be counted toward such credit when incurred within the state and used within the state, and 2) on or after January 1, 2010, no expenses or costs incurred outside the state and used within the state shall be eligible for a credit, and 100% of such expenses or costs shall be counted toward such credit when incurred within the state and used within the state.

Tax Credit Voucher

DECD requires that an independent audit by a licensed Connecticut Certified Public Accountant accompany applications for both interim tax credit vouchers and final tax credit vouchers. DECD will enter the amount of the production company’s credit on such voucher.

Methodology and Modeling Strategy for the Film Production Tax Credit

The economic and fiscal impact analysis uses itemized amounts from tax credit applications to quantify the direct economic effects of film production in Connecticut. The direct impact measures the goods and services purchased from the Connecticut economy by production companies and their staffs. The indirect impact captures the ripple (multiplier) effect of this primary demand and describes the subsequent rounds of business-to-business spending as one company expands its business and buys more goods and services from its supply chain. From these additional (ripple) sales, Connecticut firms experience increased revenues and workers have more income to spend as well. This secondary effect increases the volume of goods and services sold in Connecticut.

This analysis assumes the expenditure of motion picture productions applying for the film tax credit represents ‘net new’ spending in the state (it does not displace existing spending but exclusively adds to spending in the state). That is, we assume these productions would not have located in Connecticut absent the tax credit. The film industry is ‘footloose’ (that is, highly mobile) and able to relocate production easily. That these productions located in Connecticut *and* applied for the credit suggests that Connecticut’s film tax credit influenced their decision to locate production in the state. In contrast, some productions occurred in Connecticut during this time period but did not apply for the film tax credit.¹³ This report excludes this latter group of productions and assumes their work took place in Connecticut irrespective of the film production tax credit.¹⁴ The second group of productions is included in the

¹³ This information is based on conversations with the DECD film office. Some productions were too small to qualify while others did not desire the credit to which they may have been entitled.

¹⁴ Saas, Darcey Ann (2006). “Hollywood East? Film Tax Credits in New England,” The Federal Reserve Bank of Boston Policy Brief 06-3, <http://www.bos.frb.org/economic/neppc/briefs/2006/briefs063.pdf>.

‘baseline’ of motion picture production in Connecticut, while those productions taking advantage of the tax credit are over-and-above this baseline film activity, that is, we assume they were induced by the film production tax credit exclusively.

We exclude salary and fringe payments to above-the-line (ATL) producers, executive producers, directors, principal cast and supporting cast from the analysis because we assume that ATL workers do not spend their Connecticut earnings in the state although these earnings are taxed. Although a few major motion picture stars, producers and directors call Connecticut home, most ‘talent’ earns its wage here and returns to another state to spend income earned in Connecticut. Therefore, including such income in the model as if it were entirely spent in the state would overstate the impact of Connecticut’s film production tax credit. We exclude payments to all other payroll recipients as well because we do not know how much was paid to whom or where they lived. For example, extras typically earn \$100 day and may live in Connecticut or not. All people compensated for their work on the production file a W-4 form and pay personal income tax to Connecticut no matter where they live, and we include these state revenues in our analysis.

As mentioned, we do not model payroll in this study. Some BTL workers cash their paychecks and spend locally (above their per diem earnings) but we do not include such expenditure as we have no data or information about how much BTL workers spend of their pay beyond their per diem allotments. Per diem payments for some ATL workers are included in their salary and we do not see these per diem payments separately. This renders the economic and fiscal impact results conservative as it underestimates the actual spending impact of ATL and BTL workers.

In some instances, employees travel to Connecticut to shoot film. While in Connecticut, they stay in hotels, eat meals, shop and travel and we assume they behave as tourists. Film production budgets include allowances for such expenses. For instance, meals or ‘craft services’ are typically provided on set. When shooting continues through meals, workers receive meal-offset payments (supplemental income). Transportation to and from the state and to and from the set is typically provided by the film for out-of-state workers. Some productions specify per diem payments as a catchall for non-accommodation expenditures.

We assume that workers receiving per diem payments spend like in-state tourists (day-trippers). We model day-tripper expenditures based on data from the North Carolina Division of Tourism, Film and Sports Development.¹⁵ The per diem amounts modeled in the study are for BTL workers (ATL workers’

¹⁵ 2009 North Carolina Visitor Profile, North Carolina Department of Commerce, August 2010. See <http://www.nccommerce.com/NR/rdonlyres/217C2358-1347-41A4-AB48-47A9CCDA86E1/0/2009NorthCarolinaVisitorProfile.pdf>.

per diem is typically incorporated into their pay). The spending categories defined in the North Carolina study are grouped into REMI spending categories in the following manner: transportation (7%) and parking and tolls (1%) into REMI rental and leasing services; food/beverage/dining (25%) into REMI food services and drinking places; entertainment/admissions (10%) into REMI museums, historical sites, zoos and parks; gaming (4%) into REMI amusement, gambling and recreation; gasoline (27%), groceries (5%), shopping/gifts/souvenirs (16%), amenities (1%), and other (4%) into REMI retail trade.

REMI Spending Category (Industry sector)	Visitor spending as a share of total
Retail	53%
Food services & drinking places	25%
Rental & leasing services	8%
Amusement, gambling & recreation	4%
Museums, historical sites, zoos & parks	10%
Total	100%

We assume independent contractors are Connecticut residents and their income is modeled as an increase in household consumption expenditure in the state. We model permit and other fee costs as payments to municipalities. Production companies pay some fees to the state, but these are relatively small and cannot be separated from the total fees paid.

From expenditure data derived from production company applications, we translate expenditure categories (purchases of goods and services) into 70 REMI industry sectors using the North American Industry Classification System (NAICS). In most instances, accounting descriptions made translation categories apparent. Examples of expenditure types include lodging, food and drink, set construction, editing equipment rentals and film stock.

We assume the entire film production tax credit is claimed in the year it is issued, that is, we assume no carry forwards. This artificially synchronizes benefits with costs. If we allowed carry forwards in the analysis, we would have less cost and more benefit in years for which we have data (2006-2012) and we would be guessing at the credit amounts carried forward while we have no benefits (spending data) to offset the costs in the future. DRS provided the film production tax credit claim amounts for industries filing claims in 2007 through 2012.

According to DRS data, the insurance and healthcare industries claimed most of the film production tax credits in 2010, 2011 and 2012. Tax credits awarded by DECD in 2008, 2011 and 2012 exceeded claimed by DRS for these years likely because of carry forwards. We assign the difference between the

total credits issued and total credits claimed to the insurance industry so that we account for the maximum tax cost in these years. We model the credits as a reduction in the cost of capital for the claiming industries. We reduce state government spending each year by the amount of the credit to balance effectively the budget as we assume the legislature does increase taxes or borrowing to offset the tax cost of the credits claimed.

Table 5.8 shows the number of productions, jobs, payroll, per diem payments and production expenditures for feature film productions reported to DECD from July 1, 2006 through December 31, 2011. 2012 productions are not listed in the table as they have not yet applied for the credits so the relevant data is not available. Jobs reported include each person receiving pay including extras. These reported jobs do not drive economic impact because they are not permanent, full-time jobs. Qualified Connecticut vendor spending spend includes qualified purchases of goods and services from the Connecticut economy and is the primary driver of economic and fiscal impact. Note that prior to 2010, some spending accruing to vendors outside Connecticut qualified for the tax credit.

Table 5.8: Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Feature Film Productions in Connecticut, 2006-2011

Feature Films					
Year	Number of Productions	Jobs	Payroll	Per Diem	Qualified CT Vendor Spending
2006	2	1,602	\$12,606,330	\$171,101	\$7,554,569
2007	18	5,793	\$136,773,529	\$1,993,945	\$23,759,298
2008	17	4,551	\$78,740,803	\$1,541,339	\$21,664,703
2009	9	548	\$5,576,943	\$104,008	\$5,450,105
2010	6	996	\$12,153,766	\$193,005	\$5,891,526
2011	6	1,079	\$47,745,463	\$565,775	\$17,905,055

Table 5.9 shows the number of productions, jobs, payroll, per diem payments and production expenditures for television productions reported to DECD from 2006 through 2011. Table 5.10 shows the number of productions, jobs, payroll, per diem payments and production expenditures for documentaries, commercials and infomercials and various other productions reported to DECD from 2006 through 2011. 2012 productions are not listed in the tables as they have not yet applied for the credits so the relevant data is not available. As above, jobs reported include each person receiving pay including extras. As above, except for a few full-time, permanent jobs reported for certain production companies in the state, the reported jobs in Table 5.9 and Table 5.10 do not drive economic impact because they are not permanent, full-time jobs due exclusively to the film production tax credit. These other productions use part-time labor as needs arise. In addition, we cannot separate (and do not model) full-time, permanent jobs at World Wrestling Entertainment, Inc. and ESPN due exclusively to the film production tax credit from those that existed before the program was created in 2006. Qualified Connecticut vendor spending includes qualified purchases of goods and services from the Connecticut economy and is the primary driver of economic and fiscal impact. Note that prior to 2010, some spending accruing to vendors outside Connecticut qualified for the tax credit. Many of the blank cells under payroll occur because the production used independent contractors and these we categorize as the purchase of labor services. Independent contractors pay personal income taxes but we cannot estimate these taxes from the data provided. Also, some producers such as Stamford Media Center Productions, LLC (which had 333 jobs in 2009 and \$39M in payroll and continue to produce 3-4 talk shows in Stamford) had not submitted their final applications in time for this study; therefore, their numbers for 2010-11 will not be included until the next tax credit analysis in 2017.

Table 5.9: Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Television Productions in Connecticut, 2006-2011

Television (includes Television Film)					
Year	Number of Productions	Jobs	Payroll	Per Diem	Qualified CT Vendor Spending
2006	3	1,675	\$12,953,646	\$531,387	\$3,340,729
2007	8	63	\$627,069	\$0	\$2,332,028
2008	19	816	\$32,729,305	\$227,773	\$9,434,068
2009	17	1,259	\$62,314,194	\$304,076	\$30,258,819
2010	11	1,669	\$42,588,339	\$26,580	\$23,069,197
2011	8	1,654	\$57,360,653	\$139,782	\$24,663,108

Table 5.10 Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Documentaries, Commercials/Infomercials and Other Productions in Connecticut, 2006-2011

Year	Number of Productions	Jobs	Payroll	Per Diem	Qualified CT Vendor Spending
Documentaries					
2006	0	0	\$0	\$0	\$0
2007	1	0	\$0	\$0	\$352,459
2008	3	16	\$212,690	\$0	\$915,664
2009	1	14	\$190,525	\$1,800	\$207,976
2010	1	14	\$538,875	\$0	\$472,394
2011	3	20	\$0	\$0	\$2,543,004
Commercials/Infomercials					
2006	2	15	\$98,498	\$0	\$25,189
2007	1	0	\$0	\$0	\$168,462
2008	5	151	\$965,613	\$7,367	\$791,689
2009	5	74	\$344,052	\$1,650	\$425,191
2010	1	7	\$189,554	\$0	\$90,301
2011	1	7	\$92,638	\$0	\$43,423
Websites					
2007	0	0	\$0	\$0	\$0
2008	2	200	\$8,161,894	\$0	\$745,793
2009	5	269	\$23,849,716	\$0	\$2,189,666
2010	5	299	\$26,844,115	\$0	\$2,438,719
2011	6	382	\$39,802,057	\$0	\$4,377,746
Video Games					
2009	3	25	\$731,057	\$0	\$251,142
2010	2	21	\$1,766,396	\$0	\$179,268
2011	2	22	\$1,307,762	\$0	\$157,015
Digital Media*					
2006	0	0	\$0	\$0	\$0
2007	3	45	\$1,451,486	\$0	\$393,935
2008	8	90	\$4,720,225	\$0	\$1,942,576
2009	0	0	\$0	\$0	\$0
2010	1	4	\$643,905	\$0	\$236,327
2011	2	15	\$1,510,136	\$0	\$152,254
<i>*Video Games and Websites from 2006-2009 may be included in this category</i>					

Economic and Fiscal Impact Results for the Film Production Tax Credit

Table 5.11 shows the microsimulation results for the film production tax credit. The annual average claim over the 2006-2012 period was \$42,291,651 suggesting that the annual average ‘qualifying’ value of film, television and digital media production in the state was \$140,972,169 or \$986,805,183 in total for the period for such productions applying to DECD for the 30% credit. These results derive from direct spending by productions in a variety of categories, from spending per diem payments as tourists would and from increased household consumption due to payments to independent contractors. We do not take payroll into account because we assume most of it is removed from the state. We do account for the tax paid on payroll as increased state revenue and spending (for modeling purposes, we assume the state does not save increased revenue) because each person earning a paycheck pays personal income tax to Connecticut. If we assume that 5% of the payroll¹⁶ is net new tax revenue to the state, there would be approximately \$4.4 million on average per year in net new state revenue that offsets the tax cost of the film production tax credits.

Recall that some per diem payments for high-paid talent are included in their pay and some lower-paid workers cash their paychecks and spend more than their per diem allotments. These considerations underestimate tourist-like spending in the state.

Interpreting Table 5.11 suggests that while there are gains in private sector jobs, in some years the public sector ‘loses’ more jobs than the private sector gains. In reality, there may be no public sector jobs lost. As revenue fluctuates, the state adjusts spending in many ways. One way is to forgo hiring and leave open positions unfilled. The apparent reduction in public sector jobs occurs because the mechanism to balance the budget in the economic model (REMI) is to reduce state government spending across the board by the amount of the claims (the tax cost) each year. In the model, this results primarily as reductions in state employment (there is reduced procurement from the private sector as well).

¹⁶ This may be a conservative estimate because highly paid ATL workers may be taxed at higher marginal rates than 5%.

Table 5.11: Economic and Fiscal Impacts of the Film Production Tax Credit, 2006-2012

Film Production Tax Credit	2006	2007	2008	2009	2010	2011	2012*	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$0	\$54,132,334	\$79,493,273	\$35,477,697	\$39,319,674	\$48,009,141	\$74,398,988	\$47,261,587	
Total Payroll	\$25,658,474	\$138,852,084	\$125,530,530	\$93,006,487	\$84,724,950	\$147,818,709	\$755,543	\$88,049,540	
Total CT Vendor Spend	\$7,554,569	\$28,723,454	\$33,787,336	\$37,299,750	\$31,073,952	\$47,915,160	\$572,143	\$26,703,766	
Payroll + Spend	\$33,213,043	\$167,575,538	\$159,317,866	\$130,306,237	\$115,798,902	\$195,733,869	\$1,327,686	\$114,753,306	
Changes in:									
Total Employment	170	-224	-796	218	-72	82	-839	-209	
Total Non-Farm Employment	134	449	251	611	382	576	121	361	
GDP	\$12,579,569	-\$9,707,975	-\$45,148,121	\$34,697,897	\$17,028,723	\$34,738,809	-\$20,880,184	\$3,329,817	
State Revenues	-\$3,467,179	-\$2,279,911	-\$5,739,341	-\$1,646,768	-\$3,506,581	-\$3,711,952	-\$8,053,000	-\$4,057,819	-\$0.09
State Expenditures	-\$5,126,086	-\$2,004,247	\$828,271	-\$4,281,786	-\$2,430,227	-\$3,450,963	\$1,564,000	-\$2,128,720	
Net State Revenue Before Est. Payroll Tax	\$1,658,908	-\$275,664	-\$6,567,611	\$2,635,018	-\$1,076,354	-\$260,989	-\$9,617,000	-\$1,929,099	
Estimated Personal Income Tax Revenue	\$1,282,924	\$6,942,604	\$6,276,527	\$4,650,324	\$4,236,248	\$7,390,935	\$37,777	\$4,402,477	

**2012 results are partial.*

Recommendation

Because we have omitted certain spending (ATL per diem) as described above, the reported results are conservative. Moreover, the three film tax credit programs stimulated investment in educational programs at both the state's community and private colleges to build the workforce required to support the film, television and digital animation industries. The State of Connecticut, in partnership with the DECD Office of Film, Television, and Digital Media, offered the Film Industry Training Program (FITP), the first of its kind in Connecticut for five years culminating in 2012. The state's investment in these programs has been approximately \$1 million.

FITP classes were taught by motion picture professionals, providing students with the unique and valuable opportunity to build relationships with accomplished professionals in the field. All instructors had significant career experience and continue to be active members of the motion picture trade union related to the skills they taught, specifically the International Alliance of Theatrical Stage Employees (IATSE) and the Directors' Guild of America (DGA).

Initially, the FITP was hosted in three separate locations by Quinnipiac University, Middlesex Community College and Norwalk Community College, respectively. Due to reductions of funding in 2009, the FITP was offered at Quinnipiac University and Middlesex College, followed by Quinnipiac remaining the sole administrator in the subsequent years until its termination. A total of 503 graduates completed the Program to date.

By helping to establishing a skilled in-state film workforce, the Film Industry Training Program provided an additional incentive for producers to select Connecticut as a location for film and television. The state's strengthened production infrastructure supported and continues to support a range of projects, further encouraging companies to carry out long-term productions in Connecticut.

The combination of the three film tax credit programs and the related investment in building a workforce lead us to recommend maintaining this program. This analysis will be performed every three years and we can track the growth of the industry over time. It is worth noting that the performance over the more recent years (2009 through 2011) shows an improvement over the first four years of the program, in terms of private sector employment and GDP (the negative results in 2012 are due to the partial data available for that year, which will have a more complete assessment in the next tax credit study). This could indicate the growth of such a workforce which can improve the fiscal impact over time. The recent two year suspension of the credit for feature films intended for theatrical release (July 2013 to July 2015) has enabled a more directed focus toward television and digital media expansion in the state.

In addition to the investments described above, there have been related investments in restoring buildings and lodging establishments and there has been new business for the travel industry and accounting firms, among others.¹⁷ Further, since the film tax credit program was established in 2006, an industry facilitating the market for assigning credits has expanded.¹⁸ We do not know how many jobs this industry supports or what their contribution to the state's gross domestic product is. Nevertheless, these related investments and an expanded industry of which we do not account in the analysis above render the results conservative.

As this program has changed each year since its inception, the benefit to the state has changed as well. Prospective production companies take time to assess their advantage by locating activities in Connecticut. If they are convinced the program is stable and witness growth of the industry and a supportive workforce in the state, they will increasingly list Connecticut among the most competitive states for film production. For example, Blue Sky Studios, a division of Fox, brought over 300 jobs. Three NBCUniversal talk shows (Jerry Springer, The Maury Show and Steve Wilkos) relocated to Connecticut, as did NBC Sports Group bringing 113 jobs in the process and currently creating an additional 600. Recently ESPN celebrated the opening of a new state-of-the-art Digital Center 2 building on their campus which not only increased the company's digital capabilities, but will also result in the creation of at least 200 jobs in the state over the next three years.

Warner Bros Entertainment's "People's Court" is currently competing their 2nd year in production with plans to continue and ABC is in the process of renovating a Connecticut studio to begin production shortly on their flagship daily game show, "Who Wants to be a Millionaire?" These productions and operations establish ongoing concerns for the long term, create jobs and make economic and sector-building contributions that serve to catalyze the growth of a new industry and diversify the state's economy and provide new sources of fiscal revenue.

Film Production Infrastructure Tax Credit

A tax credit is available to a taxpayer that invests in a state-certified entertainment infrastructure project. The Commission on Culture and Tourism (CCT) administered this tax credit program before the legislature transferred administrative responsibility to DECD in 2009. An entity interested in obtaining this tax credit must apply to DECD. This tax credit may be applied against taxes imposed under Chapter 207 and Chapter 208 of the Connecticut General Statutes.

¹⁷ Testimonials available on request.

¹⁸ The market for tax credits predates the film tax credit programs because other credits are assignable. This secondary industry likely expanded as the film tax credits began to be traded.

For state-certified infrastructure projects costing between \$15,000 and \$150,000, each taxpayer may be allowed a tax credit equal to 10% of the investment of the taxpayer. For state-certified projects costing \$150,000 or more, but less than \$1 million, each taxpayer may be allowed a tax credit equal to 15% of the investment of the taxpayer. For state-certified projects costing \$1 million or more, each taxpayer may be allowed a tax credit equal to 20% of the investment of the taxpayer.

DECD requires an independent audit by a licensed Connecticut Certified Public Accountant of all project costs and expenditures prior to issuance of the tax credit voucher. A tax credit voucher may not be issued unless a state-certified project is at least 60% complete.

After the initial issuance of a tax credit voucher, such credit may be sold, assigned, or otherwise transferred, in whole or in part, to one or more taxpayers, provided no credit, after issuance, may be sold, assigned, or otherwise transferred, in whole or in part, more than three times. In the event of an assignment, the transferor and the transferee shall jointly submit written notice of such transfer to DECD no later than 30 days after such transfer. The notification after each transfer includes the credit voucher number, the date of transfer, the amount of such credit transferred, the tax credit balance before and after the transfer, the tax identification numbers for both the transferor and transferee and other information DECD may require. A taxpayer holding a credit voucher must claim the credit for the income year in which expenditures were made by the taxpayer for the infrastructure project.

A tax credit not used in the income year in which it is claimed may be carried forward for three succeeding income years. No carryback is allowed. An assignee of the infrastructure tax credit is allowed to carryforward any unused tax credit as provided in the statute.

The relevant statutes are CGS §12-217kk and 2007 PA 236, §2.

The credit intends to help establish a film and digital animation industry presence in Connecticut by incentivizing capital investment in plant and equipment for pre- and post-production facilities and investment in educational programs that produce the workforce needed by the film and digital animation industry.

Definitions

‘Infrastructure project’ means a capital project to provide basic buildings, facilities, or installations needed for the functioning of the digital media and motion picture industry in this state.

‘State-certified project’ means an infrastructure project undertaken in this state by an entity that (A) is in compliance with the adopted regulations, (B) is authorized to conduct business in this state, (C) is not in default on a loan made by the state or a loan guaranteed by the state, nor has ever declared

bankruptcy under which an obligation of the entity to pay or repay public funds was discharged as a part of such bankruptcy, and (D) has been approved by DECD as qualifying for the Infrastructure Project Tax Credit.

‘Eligible expenditures’ includes all expenditures for a capital project to provide buildings, facilities, or installations, whether leased or purchased, together with necessary equipment for a film, video, television, digital production facility or digital animation production facility; project development, including design, professional consulting fees and transaction costs; development, preproduction, production, postproduction and distribution equipment and system access and fixtures and other equipment.

Methodology and Modeling Strategy for the Film Production Infrastructure Tax Credit

Using data from the DECD Film Office of the breakdown of infrastructure expenditures that were eligible for the infrastructure tax credit, we model the construction and related activities associated with the credit. We calculate real estate broker fees (6% of the purchase amount), state conveyance taxes (1% of the purchase amount), and local conveyance taxes (0.25% of the purchase amount) based on the value of eligible land and building purchases. We model construction expenses (building rehabilitation and renovations) incurred by the companies as construction of new commercial and institutional buildings. We model other eligible expenditure (furniture, fixtures and equipment, and architectural services, for example) as net new industry sales in the relevant sectors. We increase the non-residential capital stock in the state by the value of construction. The claiming industries are classified by NAICS code and their cost of capital is reduced by the amount of the tax credit. State government spending is reduced by the amount of the tax credit.

Table 5.12 shows the amounts claimed and firms claiming the film production infrastructure tax credit.

Table 5.12: Film Production Infrastructure Tax Credit Expenditure and Claims

Applicant	NAICS	CT Expenditures	Date Issued	Amount of Tax Credit
Blue Sky Studios	512	\$17,940,989.00	6/8/2009	\$3,588,197.80
World Wrestling Entertainment	711	\$25,313,556.00	2/1/2010	\$5,062,711.00
Ely	531	\$6,723,934.00	2/10/2010	\$1,344,787.00
Brand Gallery	541	\$193,604.00	2/19/2010	\$29,041.00
CFC Stillwater	531	\$11,236,612.00	6/17/2010	\$2,247,322.00
ESPN	515	\$33,426,976.00	9/22/2011	\$6,685,395.00
BlueSky	512	\$7,803,086.00	3/6/2012	\$1,570,618.00
Brand Gallery	541	\$3,298,184.00	5/2/2012	\$659,637.00
		\$105,936,941.00		\$21,187,708.80

The total amount of credits issued through 2012 (that we assume is the same as the credits claimed) is almost \$21.2 million. Construction and related spending began in 2007 and totaled almost \$106 million by 2012. Six firms have received the credit and their cost of capital declined by the amount of their claim (their profit and retained earnings increased). We do not analyze a range of inducement in the analysis of the infrastructure tax credit because we assume that none of this activity would have occurred absent the credit. This case represents the largest tax cost to the state and the largest benefit in that we include 100% of the qualified expenditure in the analysis.

Table 5.13 shows the microsimulation results for the film production infrastructure tax credit. We assume for modeling purposes that the credits issued for 2012 are claimed in 2012 to synchronize costs and benefits. Otherwise, we do not know when or how much of the credit will be claimed by which industries.

Table 5.13: Economic and Fiscal Impacts of the Film Production Infrastructure Tax Credit, 2007-2012

Film Production Infrastructure Tax Credit	2007	2008	2009	2010	2011	2012	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$0	\$0	\$0	\$8,683,861	\$6,685,395	\$2,230,255	\$2,933,252	
Changes in:								
Total Employment	7	140	23	107	-106	-42	21	
Total Non-Farm Employment	5	130	20	219	-15	-14	58	
GDP	\$581,253	\$10,378,374	\$1,529,899	\$7,891,441	-\$4,404,558	\$162,627	\$2,689,839	
State Revenues	\$87,933	\$2,168,264	\$273,421	\$2,659,701	\$260,689	\$120,889	\$928,483	\$0.32
State Expenditures	\$10,992	-\$670,597	\$159,496	-\$255,517	\$1,208,649	\$616,535	\$178,260	
Net State Revenue	\$76,942	\$2,838,861	\$113,926	\$2,915,218	-\$947,960	-\$495,646	\$750,223	

Recommendation

Table 5.13 shows that on average each year the infrastructure tax credit claim was \$2.93 million while net state revenue averaged \$750,223 above the baseline each year meaning that as modeled that the state received around \$750,000 more net revenue each year had the infrastructure tax credit program not existed. Because credit applicants provided no information on employment or procurement in the new facilities, for this analysis we assume there is no net new permanent employment associated with the infrastructure projects. This is clearly a conservative assumption. The economic and fiscal impacts of construction and related activities dissipate quickly upon completion. Therefore, the analysis presented here represents a partial picture of the benefit of the infrastructure projects undertaken by the six firms in Table 5.12. Because we have no knowledge of the totality of net new economic activity the infrastructure projects facilitate, we cannot determine the entire net benefit of the infrastructure tax credit program; here we analyze it in isolation.

Given that the program is relatively new, that in isolation it benefits the state with new net revenue including its tax cost and we do not know what other benefits (such as net new jobs and procurement) accrue to the state, we recommend that this program continue and that we collect related job creation and operational data that the infrastructure tax credit program facilitates.

Digital Animation Tax Credit

A Digital Animation Tax Credit is available to state-certified digital animation production companies that engage in digital animation production activities on an ongoing basis. The Commission on Culture and Tourism (CCT) administered this tax credit program before the legislature transferred administrative responsibility to DECD in 2009. The relevant statutes are CGS §12-217II and 2007 PA 236, §3 amended by 2007 PA 4, §71 (June Spec. Sess.). This tax credit may be applied to taxes imposed under Chapters 207 and 208 of the Connecticut General Statutes. A digital animation production company receiving a digital animation tax credit is not be eligible for and cannot receive the film production tax credit. For income years beginning on or after January 1, 2007, a state-certified animation production company incurring production expenses or costs in excess of \$50,000 shall be eligible for a tax credit equal to 30% of such production expenses or costs.

The credit intends to help establish a digital animation industry presence in Connecticut by incentivizing increased employment and capital investment in plant and equipment for digital animation facilities.

Definitions

‘Digital animation production company’ means a corporation, partnership, limited liability company, or other business entity that is engaged exclusively in digital animation production activity on an ongoing basis, and that is qualified by the Secretary of the State to engage in business in the state.

‘State-certified digital animation production company’ means a digital animation production company that: (A) maintains studio facilities located within the state at which digital animation production activities are conducted, (B) employs at least two hundred full-time employees within the state, (C) is in compliance with regulations adopted, and (D) has been certified by DECD.

‘Digital animation production activity’ means the creation, development, and production of computer-generated animation content for distribution or exhibition to the public.

‘Full-time employee’ means an employee required to work at least 35 hours or more per week, and who is not a temporary or seasonal employee.

‘Production expenses or costs’ means all expenditures clearly and demonstrably incurred in the state in the development, preproduction, production or postproduction costs of a digital animation production activity. The statute enumerates those types of expenses that qualify and certain types of expenses that are specifically excluded.

Tax Credit Voucher

Any state-certified digital animation production company may apply to DECD no more than twice during the income year for a digital animation tax credit voucher. There must be independent certification by a licensed Connecticut Certified Public Accountant (CPA) of the production expenses or costs incurred during the period for which the voucher is issued. The voucher will list the amount of the available tax credit.

Assignment and Carry forward/Carry back Limitations

After the initial issuance of a tax credit, such credit may be sold, assigned, or otherwise transferred, in whole or in part, to one or more taxpayers provided no credit, after issuance, may be sold, assigned or otherwise transferred, in whole or in part, more than three times. In the event of an assignment, the transferor and the transferee shall jointly submit written notice of such transfer to DECD no later than 30 days after such transfer.

The notification that is provided to DECD after each transfer shall include the credit voucher number, the date of transfer, the amount of such credit transferred, the tax credit balance before and after the transfer, the tax identification numbers for both the transferor and transferee, and such other

information as DECD may require. A taxpayer that receives the credit by assignment must claim the credit only for an income year in which the production expenses or costs were incurred.

A tax credit not used in the income year in which it is claimed may be carried forward for three succeeding income years. No carry back is allowed. An assignee of the tax credit may carryforward any unused tax credit as provided in the statute.

Methodology and Modeling Strategy for the Digital Animation Tax Credit

We model the impact of the digital animation tax credit by accounting that the sole credit recipient, Blue Sky Studios, would not have relocated to the state but for the digital animation tax credit and the package of other incentives presented to the company. These include a DECD loan with forgiveness, a CDA sales tax exemption for construction-related expenses and the film infrastructure tax credit. Under this scenario, accounting for the impact of the tax credit would have to account for all activities related to the company's presence in Connecticut. This includes expenses incurred by the company in the state in 2008 for relocation, the jobs created by the company in 2009 and other incentives granted to the company by the state.

The digital animation tax credits averaged \$12.62 million per year from 2008-2012. Blue Sky spent \$11.12 million for leasehold improvements to an existing building, \$0.7 million in architectural and engineering fees, and \$6.1 million for furniture, fixtures and equipment (FF&E), all in 2008.

The company had an annual average of 422 jobs through 2012. We allocate these jobs into executive (5%) and non-executive (95%) jobs and use the average annual wages paid by the company to calculate a weighted average wage. The executive/non-executive employment allocation and company wages are based on data provided by the company to DECD for prior economic impact analyses. Blue Sky Studios' average annual wages are higher than the industry average wage in the Connecticut economic model (REMI); we therefore adjust the wage upwards in the motion picture and sound recording industry in the model to reflect increased purchasing power. Recent data provided by the company indicated that 70% of its employees reside outside Connecticut, down from 93% in 2009; we make a residence adjustment to account for the portion of the payroll that leaves the state, adjusting it annually to represent the declining fraction of out-of-state resident employees.

The state granted an \$8 million loan (for ten years at 3%, with principal and interest payments deferred for the first five years and the possibility of forgiveness of \$6 million in year six provided the company met a target of 300 jobs created in the state) and a \$750,000 sales tax exemption for construction-related expenses. We estimate a portion of the reduction in the company's capital cost as the difference between what the company would have paid for a similar loan in the capital market and the actual payments made for the state loan in a given year. We assume the capital market interest rate

for Blue Sky is 5%. From 2009 to 2012, the company’s cost of capital is reduced by the payment it would have had to make to the capital market for an \$8 million, 10-year loan with 5% interest (it makes no payment for the state loan in these years because of the five-year deferment). The state bonds the loan and incurs debt service that we model as reduced state spending (we assume taxes do not increase to cover increased debt service). We model the sales tax exemption as a one-time reduction in state government spending (we assume taxes do not increase to cover forgone tax revenue).

In addition to the reduction in the cost of capital associated with the state loan, we further reduce the company’s cost of capital in the amount of the credits it claimed under the digital animation tax credit and the film infrastructure tax credit because we assume the company would not have relocated to Connecticut without the entire package of incentives that included both film tax credits.

Table 5.14 shows the microsimulation results for the digital animation and film production infrastructure tax credits combined with the DECD loan and CDA sales tax exemption offset with the private benefit of net new jobs, construction and investment in plant and equipment. We use payroll data provided by the company and include a residence adjustment for payroll that leaves the state with the employees that reside out-of-state.

Table 5.14: Economic and Fiscal Impact of the Digital Animation Tax Credit

Digital Animation Tax Credit	2008	2009	2010	2011	2012	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$0	\$18,107,562	\$15,000,000	\$15,000,000	\$15,000,000	\$12,621,512	
Changes in:							
Total Employment	187	83	305	404	524	301	
Total Non-Farm Employment	193	365	476	563	685	457	
GDP	\$11,332,833	\$27,609,730	\$48,131,076	\$61,290,859	\$78,610,552	\$45,395,010	
State Revenues	\$1,179,601	-\$957,930	\$91,543	\$577,130	\$1,211,000	\$420,269	\$0.03
State Expenditures	-\$1,026,602	\$1,796,474	-\$526,132	-\$1,366,006	-\$2,462,000	-\$716,853	
Net State Revenue	\$2,206,204	-\$2,754,404	\$617,675	\$1,943,136	\$3,673,000	\$1,137,122	

Table 5.14 shows that the claims for the digital animation tax credits combined averaged \$12.62 million from 2008 through 2012 while net state revenue averaged \$1.137 million over the period. In this analysis, we took account of the entire project’s costs and benefits, which DECD is uniquely positioned to do. In addition, history has shown that more of Blue Sky’s workforce is relocating to Connecticut; the percent of employees who live outside the state has dropped from 93% in 2009 to 70% currently, according to the company. This reduces the payroll leaving the state and increases household consumption and related taxes (and net state revenue) in Connecticut.

Recommendation

Based on the foregoing analysis of the costs and benefits of the totality of economic activity associated with Blue Sky's relocation to Connecticut, we recommend that the digital animation tax credit be maintained. As this analysis will be repeated every three years, we can track the costs and benefits of the program as the industry responds to the film and digital animation incentives offered in Connecticut.

Enterprise Zone Tax Credit for Qualifying Corporations

A tax credit may be applied against the corporation business tax imposed under Chapter 208 of the Connecticut General Statutes by a qualifying corporation established in an area designated for enterprise zone benefits that satisfies certain employment levels. The credit amount is equal to:

- 100% of the corporation business tax liability in years 1 through 3; and
- 50% of the corporation business tax liability in years 4 through 10.

The relevant statutes are CGS §12-217v, 32-9p, and 32-70.

The Enterprise Zone Tax Credit for Qualifying Corporations seeks to reward firms of a certain size in any industry that are located in certain areas of certain towns in the state (Enterprise Zones). Qualifying businesses in these areas need not expand to obtain the credit; by virtue of their location, qualifying businesses may obtain a tax credit for ten years. The putative intent of this credit is to encourage location of firms to and reward firms established in areas with enterprise zone benefits, which at the time of their designation were distressed areas. The benefit to firms is a reduced state corporate tax liability that we assume translates into a lower cost of capital. If the program is successful, firms in enterprise zones may improve the economic condition of their workers and at some point, these areas may no longer be distressed.

'Qualifying corporation' means a corporation that was incorporated on or after January 1, 1997 in an enterprise zone or other area designated as having enterprise zone level benefits and which either:

- Has 375 or more employees, at least 40% of whom:
 - Are residents of the municipality in which the enterprise zone is located; and
 - Qualify under the federal Workforce Investment Act (WIA); or
- Has fewer than 375 employees, at least 150 of whom:
 - Are residents of the municipality in which the enterprise zone is located; and
 - Qualify under the federal WIA.

'Qualified Manufacturing Plant' means a manufacturing facility designated by the DECD commissioner as a Qualified Manufacturing Plant. The benefits available to an eligible corporation completing an approved project in a Qualified Manufacturing Plant are the same as in an Enterprise Zone and subject to the same qualifying terms and conditions.

Recommendation:

This tax credit has been on the books since 1997 and has had no claims and we perform no economic analysis because this program has had no effect on the economic development of the state. We feel the qualifying thresholds are too high which explains the absence of claims. Given other incentive programs available to firms in enterprise zones, we recommend this program be eliminated.

Service Facility Tax Credit

A tax credit may be applied against the portion of the corporation business tax imposed under Chapter 208 that is allocable to a service facility located outside of an Enterprise Zone in a Targeted Investment Community. The amount of the tax credit depends upon the number of new employees working at the facility.

There are six credit percentages in the chart below that a firm may apply against the portion of the tax imposed under Chapter 208 allocable to the service facility. The percentage varies with the number of new employees occupying the service facility:

Number of New Employees Working at the Facility	Credit Percentage
300 – 599	15%
600 – 899	20%
900 – 1,199	25%
1,200 – 1,499	30%
1,500 – 1,999	40%
2,000 or more	50%

Recommendation:

This tax credit program has had no claims and therefore we perform no economic analysis. Given other incentive programs available to firms in enterprise zones, we recommend this program be eliminated.

Manufacturing Facility Tax Credit for Facilities Located in an Enterprise Zone (or Other Area Having Enterprise Zone Benefits)

A tax credit equal to 50% of the tax imposed under Chapter 208 of the Connecticut General Statutes allocable to a manufacturing or service industry facility located within a designated Enterprise Zone (or other area having Enterprise Zone benefits) is available to a firm that meets certain employment criteria. If it does not meet such criteria, the facility may qualify for the 25% Manufacturing Facility Credit, which apparently has no employment threshold (see below).¹⁹

The Manufacturing Facility tax credit for facilities located in an Enterprise Zone (or other area having Enterprise Zone benefits) aims to reward firms located in and those that would locate to an Enterprise Zone or other area described below having such benefits.

Firms located in such areas need not expand their employment or plant and equipment to receive a tax credit under this program. The incentive provided may induce firms to locate to an Enterprise Zone or other area having such benefits and all qualifying firms receive a reduction in their Connecticut tax liability for nine years. It is not clear whether qualifying firms may re-apply for these benefits in consecutive or non-consecutive periods. The relevant statutes are CGS §§12-217e, 32-9p and 32-70 and Conn. Agencies Regs. §32-9p-5.

‘Manufacturing facility’ means any plant, building or other real property improvement that is constructed, renovated, expanded or acquired and is used for one of the following purposes:

- Manufacturing, processing, or assembling of raw materials, parts or manufactured products;
- Research and development facilities directly related to manufacturing;
- The significant servicing, overhauling, or rebuilding of machinery and equipment for industrial use;
- The warehousing and distribution in bulk of manufactured products on other than a retail basis (new construction only); or
- Certain service sectors as defined by the Commissioner of DECD in Conn. Agencies Regs. §32-9p-5. These service sectors include financial institutions, insurance firms,

¹⁹ CGS §12-217e states, “(a) There shall be allowed as a credit against the tax imposed by this chapter an amount equal to twenty-five per cent of that portion of such tax which is allocable to any manufacturing facility, provided, for any such facility which is located in an enterprise zone designated pursuant to section 32-70 or in a municipality with an entertainment district designated under section 32-76 or established under section 2 of public act 93-311* and which became eligible as a manufacturing facility after the designation of such zone and for which not less than one hundred fifty full-time employees or thirty per cent of the full-time employment positions directly attributable to the manufacturing facility were, during the last quarter of the income year of the taxpayer, held by employees of the taxpayer who at the time of employment were (1) residents of such zone, or (2) residents of such municipality and eligible for training under the Federal Comprehensive Employment Training Act or any other training program that may replace the Comprehensive Employment Training Act, a credit of fifty per cent shall be allowed.” The lack of clear employment criteria for the 25% and 50% credits resulted in no employment criteria to qualify for the 25% credit.

laboratories, research facilities, various transportation and (non-manufacturing) warehousing operations, commercial fishing operations and courier services. Retail and wholesale operations are not eligible for this credit.

To qualify for the 50% tax credit, the corporation must, during the last quarter of its income year, either:

- Employ 150 or more full-time employees who at the time of employment were:
 - Residents of the Enterprise Zone (or other area having Enterprise Zone benefits); or were
 - Residents of the municipality eligible for training under the federal Workforce Investment Act (WIA); or
- Have 30% or more of its full-time employment positions directly attributable to the manufacturing facility held by employees who at the time of employment were:
 - Residents of the Enterprise Zone (or other area having Enterprise Zone level benefits); or were
 - Residents of the municipality eligible for training under the federal WIA.

The credit period is ten years and begins with the first full income year following the year of issue of the eligibility certificate and continues for the following nine income years.

If within the ten-year period the facility ceases to qualify as a manufacturing facility or the taxpayer ceases to occupy the property, the entitlement to the credit terminates and there is no pro-rata application of the credit during the income year in which the entitlement or occupancy terminates. No carryforward, carry back or assignment is allowed.

History of Claims for the 25% and 50% Manufacturing Facilities Tax Credit

Table 5.14 shows the claims (cost to the state) of the 25% and 50% Manufacturing Facilities tax credit by firms aggregated by NAICS industry code by year. We model this tax credit program by reducing state government spending and the industry's cost of capital in the amount of the claim by industry each year for which we have data. There is no need to differentiate between the 25% and 50% credit as the economic and fiscal impacts proceed from reduced state spending and the industry's reduced cost of capital that arises from increased profits for firms claiming either credit. Further, there is no need to apply a range of inducement assumptions because qualifying firms in enterprise zones need do nothing more than business as usual to claim this tax credit. We cannot determine whether businesses located to or expanded in the enterprise zone because of the tax credit or if they did, by how much. If we could, such relocation or expansion may not be net new to the state reflecting a redistribution of facilities to take advantage of the tax credit. Businesses may qualify for the credit if they are acquired. If this is the case, there may no net new economic activity because of the acquisition.

Notwithstanding, such activity may have the desirable effect of ameliorating the distressed economic condition of the enterprise zone and its vicinity.

For certain industry groups, Table 5.14 shows equal distributions of credit amounts by NAICS code in 2001 and earlier because before 2001 DRS organized the credit claims by the Standard Industrial Classification (SIC) code that maps one-to-many into 2007 NAICS codes. The NAICS codes replaced SIC codes in 2001. DECD distributes a given dollar amount in a given SIC industry in a given year equally among the 2007 NAICS codes to which it maps because this procedure does not favor one NAICS industry over another and it is an artificial construct to accommodate the NAICS industry organization built into current economic models. Notwithstanding, the mapping of SIC industries to NAICS industries, it appears that firms in industries specifically excluded from receiving the credit according to Conn. Agencies Regs. §32-9p-5 (for example, retail and wholesale operations) received it.²⁰

Table 5.14 shows that from 1995 through 2010 (excluding 2002 because of the lack of data) an average of \$20.3 million was claimed by firms in a variety of industries. Claims varied from \$62 in the Accommodations sector in 1996 to a high of \$1.8 million in the Machinery Manufacturing sector in 2007. Over the entire period, the highest total claims came from the Transportation Equipment Manufacturing sector (\$3.42 million from 1995-2010). Total per year claims peaked in 2007 at \$3.47 million.

²⁰ See <http://www.ct.gov/ecd/cwp/view.asp?a=1095&Q=307630&PM=1#manufacturing> for this DECD regulation that is consistent with CGS §32-9p.

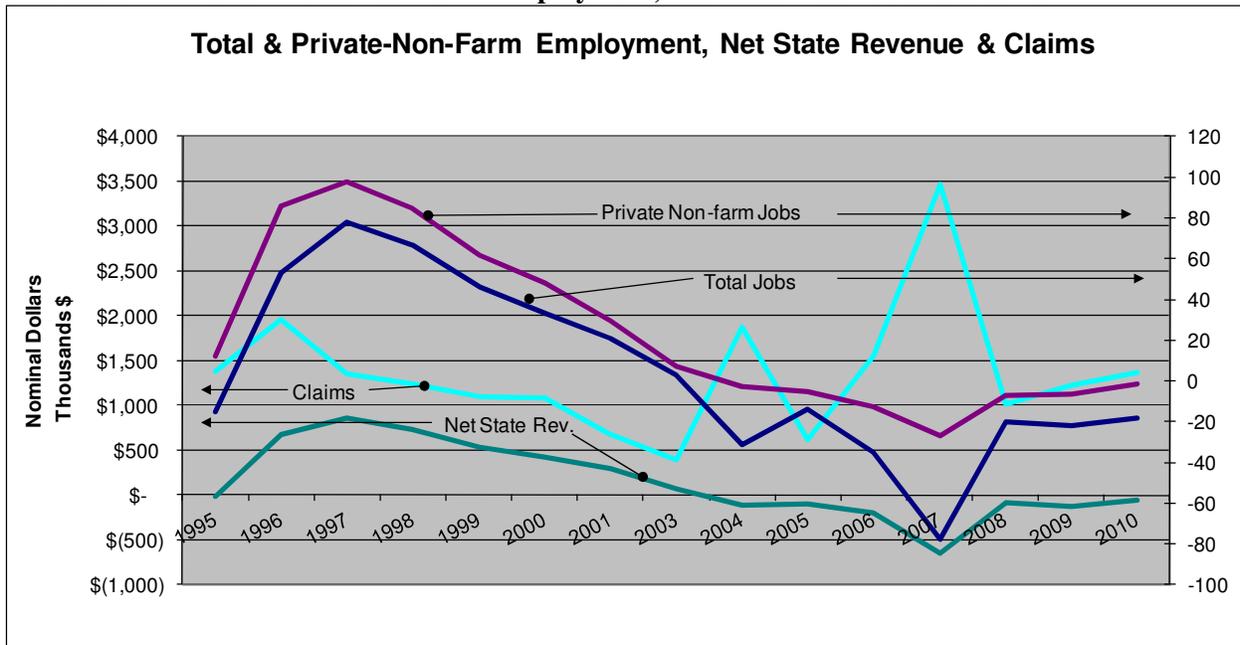
Table 4.4: Manufacturing Facilities Tax Credit: Income Years 1995 through 2010

Manufacturing Facilities Tax Credit for Facilities in a Targeted Investment Community or Enterprise Zone		Actual and Imputed Credits Claimed															Industry Totals
Industry	NAICS Code	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	
Forestry and Logging	113	\$715	\$1,647	\$962	\$776	\$1,223	\$351	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,673
Oil and Gas Extraction	211	\$52,832	\$171,134	\$87,950	\$57,311	\$31,508	\$31,799	\$13,642	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$446,176
Mining (except oil and gas)	212	\$91,707	\$23,981	\$21,730	\$26,089	\$20,342	\$21,449	\$7,239	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$212,537
Construction of Buildings	236	\$257	\$258	\$300	\$167	\$3,002	\$3,675	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,659
Heavy and Civil Engineering Construction	237	\$257	\$258	\$300	\$167	\$3,002	\$3,675	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,659
Specialty Trade Contractors	238	\$257	\$258	\$300	\$167	\$3,002	\$3,675	\$0	\$4,835	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,494
Food Manufacturing	311	\$26,969	\$5,615	\$26,914	\$3,879	\$8,761	\$20,547	\$4,089	\$19,091	\$16,580	\$17,580	\$15,044	\$9,172	\$3,077	\$3,218	\$3,284	\$183,821
Beverage and Tobacco Product Manufacturing	312	\$26,969	\$5,615	\$26,914	\$3,879	\$8,761	\$20,547	\$4,089	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$96,775
Textile Mills	313	\$12,858	\$12,863	\$3,463	\$13,964	\$20,150	\$58	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,417
Textile Product Mills	314	\$12,858	\$12,863	\$3,463	\$13,964	\$20,150	\$58	\$63	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,417
Apparel Manufacturing	315	\$13,916	\$13,916	\$4,513	\$15,101	\$20,865	\$1,049	\$128	\$147	\$105	\$0	\$0	\$0	\$0	\$0	\$0	\$69,741
Leather and Allied Product Manufacturing	316	\$16,249	\$16,882	\$17,061	\$19,668	\$8,959	\$33,169	\$10,279	\$0	\$0	\$0	\$4,368	\$242	\$92	\$0	\$0	\$126,769
Wood Product Manufacturing	321	\$2,676	\$4,303	\$3,794	\$5,094	\$3,679	\$7,752	\$2,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,579
Paper Manufacturing	322	\$55,083	\$46,638	\$33,493	\$45,426	\$43,207	\$17,863	\$6,286	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$247,994
Printing and Related Support Activities	323	\$24,499	\$40,508	\$59,698	\$11,039	\$4,859	\$9,187	\$2,520	\$242	\$202	\$199	\$0	\$0	\$0	\$0	\$0	\$152,953
Petroleum and Coal Products Manufacturing	324	\$4,075	\$4,085	\$5,237	\$4,420	\$7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,825
Chemical Manufacturing	325	\$68,023	\$186,763	\$103,961	\$75,941	\$39,752	\$63,976	\$23,855	\$8,046	\$6,021	\$24,779	\$17,101	\$4,207	\$3,603	\$4,452	\$6,963	\$637,343
Plastics and Rubber Products Manufacturing	326	\$20,334	\$20,347	\$23,759	\$23,806	\$12,572	\$33,605	\$10,694	\$4,310	\$13,536	\$2,457	\$104	\$804	\$271	\$67	\$0	\$166,467
Nonmetallic Mineral Product Manufacturing	327	\$91,707	\$23,981	\$21,730	\$26,089	\$20,342	\$21,449	\$7,239	\$17,710	\$18,446	\$15,254	\$17,377	\$15,569	\$0	\$0	\$0	\$296,892
Primary Metal Manufacturing	331	\$4,918	\$18,167	\$9,462	\$7,696	\$71,742	\$54,738	\$686	\$1,301	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$168,710
Fabricated Metal Product Manufacturing	332	\$109,325	\$85,790	\$103,592	\$102,052	\$94,811	\$81,307	\$48,603	\$19,298	\$15,700	\$15,016	\$29,861	\$2,139	\$10,588	\$697	\$727	\$719,506
Machinery Manufacturing	333	\$110,769	\$179,092	\$89,052	\$104,201	\$97,847	\$84,287	\$49,257	\$11,336	\$2,146	\$619	\$11,874	\$1,823,326	\$165,578	\$246,338	\$168,022	\$3,143,744
Computer and Electronic Product Manufacturing	334	\$48,255	\$124,565	\$55,603	\$50,210	\$35,416	\$30,492	\$13,936	\$8,493	\$9,645	\$5,935	\$7,311	\$6,357	\$6,295	\$0	\$0	\$402,514
Electrical Equipment, Appliance and Component Manufacturing	335	\$46,272	\$97,672	\$52,980	\$46,996	\$31,623	\$26,566	\$12,596	\$0	\$0	\$30,017	\$25,139	\$14,184	\$15,980	\$9,547	\$409	\$409,982
Transportation Equipment Manufacturing	336	\$58,847	\$110,279	\$60,684	\$60,637	\$55,176	\$63,927	\$42,112	\$51,437	\$1,446,185	\$81,044	\$110,325	\$254,003	\$82,902	\$290,765	\$656,899	\$3,425,221
Furniture and Related Product Manufacturing	337	\$66,916	\$59,727	\$48,221	\$64,710	\$56,147	\$50,040	\$16,651	\$0	\$0	\$2,407	\$2,239	\$0	\$1,887	\$937	\$0	\$369,883
Miscellaneous Manufacturing	339	\$61,484	\$137,538	\$68,781	\$64,422	\$41,203	\$55,268	\$21,868	\$34,111	\$8,869	\$6,886	\$2,071	\$1,488	\$5,336	\$5,504	\$5,694	\$520,524
Merchant Wholesalers, Durable Goods	423	\$24,685	\$31,813	\$19,903	\$27,461	\$41,588	\$30,097	\$14,775	\$11,191	\$120,032	\$170,017	\$463,105	\$589,785	\$557,830	\$266,569	\$270,838	\$2,639,689
Merchant Wholesalers, Nondurable Goods	424	\$14,928	\$10,052	\$44,742	\$8,704	\$8,747	\$11,363	\$72,869	\$34,149	\$94,254	\$110,315	\$122,935	\$78,556	\$84,368	\$100,871	\$43,209	\$840,060
Wholesale Electronic Markets and Agents and Brokers	425	\$25,414	\$33,275	\$36,608	\$27,415	\$42,074	\$31,340	\$14,622	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$210,749
Furniture and Home Furnishings Stores	442	\$9,304	\$16,529	\$8,591	\$10,093	\$8,330	\$152	\$1,659	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,659
Electronics and Appliance Stores	443	\$8,302	\$15,710	\$4,595	\$8,981	\$8,785	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,373
Building Material and Garden Equipment and Supplies Dealers	444	\$30,426	\$70,331	\$53,725	\$51,340	\$14,586	\$9,989	\$74,351	\$0	\$0	\$0	\$652,362	\$534,168	\$0	\$0	\$0	\$1,491,277
Food and Beverage Stores	445	\$0	\$0	\$0	\$0	\$0	\$2,214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,214
Health and Personal Care Stores	446	\$8,302	\$8,301	\$1,006	\$8,981	\$8,785	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,375
Clothing and Clothing Accessories Stores	448	\$3,148	\$3,117	\$3,593	\$3,409	\$3,078	\$706	\$1,703	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,754
Sporting Goods, Hobby, Book and Music Stores	451	\$3,148	\$3,117	\$3,593	\$3,409	\$3,078	\$706	\$1,703	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,754
Miscellaneous Store Retailers	453	\$11,494	\$11,501	\$1,260	\$12,400	\$21,491	\$91,368	\$127,674	\$120,491	\$80,541	\$62,405	\$0	\$63,108	\$38,382	\$118,242	\$36,945	\$797,302
Nonstore Retailers	454	\$0	\$0	\$0	\$0	\$0	\$2,214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,214
Truck Transportation	484	\$5,617	\$5,631	\$192	\$6,093	\$1,037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,570
Support Activities for Transportation	488	\$19,032	\$19,715	\$8,643	\$20,498	\$25,222	\$38,858	\$29,567	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161,536
Postal Service	491	\$841	\$1,477	\$747	\$765	\$631	\$1,498	\$51	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,010
Couriers and Messengers	492	\$5,617	\$5,631	\$192	\$6,093	\$1,037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,570
Warehousing and Storage	493	\$5,617	\$5,631	\$192	\$6,093	\$1,037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,570
Publishing Industries (except Internet)	511	\$22,538	\$37,851	\$56,865	\$6,721	\$2,403	\$1,786	\$240	\$456	\$3,930	\$5,043	\$905	\$826	\$759	\$669	\$727	\$141,720
Motion Picture and Sound Recording Industries	512	\$22,538	\$37,851	\$56,865	\$6,721	\$2,403	\$8,179	\$240	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$134,797
Data Processing, Hosting and Related Services	518	\$841	\$39,555	\$747	\$765	\$631	\$1,498	\$51	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$44,088
Other Information Services (now includes NAICS 516: Internet Publishing and Broadcasting)	519	\$23,379	\$39,329	\$57,612	\$7,485	\$3,034	\$9,677	\$291	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$140,807
Credit Intermediation and Related Activities	522	\$841	\$1,477	\$747	\$765	\$631	\$1,498	\$51	\$0	\$0	\$0	\$0	\$0	\$23,917	\$19,691	\$14,284	\$63,902
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	\$2,303	\$322	\$2,925	\$16,738	\$21,669	\$9,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,066	\$17,663	\$85,003
Insurance Carriers and Related Activities	524	\$18,812	\$18,860	\$4,965	\$20,407	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,043
Funds, Trusts and Other Financial Vehicles	525	\$21,115	\$19,181	\$7,890	\$37,145	\$21,669	\$9,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$116,317
Real Estate	531	\$6,559	\$30,281	\$203	\$6,103	\$1,048	\$17	\$4,744	\$11,901	\$2,107	\$1,600	\$4,875	\$3,804	\$3,950	\$0	\$0	\$77,194
Rental and Leasing Services	532	\$0	\$0	\$0	\$0	\$0	\$0	\$8,699	\$4,359	\$1,003	\$462	\$3,155	\$5,105	\$2,296	\$101,530	\$61,884	\$188,493
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	533	\$2,303	\$322	\$2,925	\$16,738	\$21,669	\$9,317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,274
Professional, Scientific and Technical Services	541	\$42,061	\$80,273	\$29,898	\$43,163	\$46,854	\$55,874	\$24,393	\$4,198	\$4,154	\$37,338	\$39,448	\$31,537	\$7,967	\$50	\$2,912	\$450,119
Management of Companies and Enterprises	551	\$2,303	\$322	\$2,925	\$16,738	\$21,669	\$9,317	\$0	\$33,141	\$25,602	\$30,268	\$20,167	\$29,189	\$125	\$47,583	\$77,411	\$316,780
Administrative and Support Services	561	\$841	\$1,477	\$747	\$765	\$631	\$1,498	\$51	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,010
Waste Management and Remediation Services	562	\$5,617	\$5,631	\$192	\$6,093	\$1,037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,570
Ambulatory Health Care Services	621	\$0	\$0	\$0	\$0	\$0	\$0	\$263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$263
Accommodation	721	\$0	\$62	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$62
Personal and Laundry Services	812	\$841	\$1,477	\$747	\$765	\$631	\$1,498	\$51	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,010
Totals		\$1,377,793	\$1,960,647	\$1,347,750	\$1,236,418	\$1,093,594	\$1,079,807	\$676,223	\$400,245	\$1,869,058	\$617,235	\$1,549,934	\$3,469,808	\$1,013,317	\$1,231,746	\$1,368,808	\$20,292,383

Results for the Manufacturing Facilities Tax Credit

Chart 5.2 shows the 16-year pattern of the changes in total employment, private non-farm employment and net state revenue²¹ with respect to the baseline or status quo forecast of the Connecticut economy as a result of the 25% and 50% Manufacturing Facilities Tax Credit. In addition, we plot the actual value of claims on the same graph (right-hand scale) to show correlation with economic activity. Table 5.15 shows details of changes in employment, state GDP, state revenue and state expenditure with respect to the baseline or status quo forecast of the Connecticut economy.²² We do not know the companies' employment levels or other relevant data, and there is no activity required other than to locate in an Enterprise Zone. Given that the assumed drivers of new economic activity are a reduced cost of capital for firms claiming the credit and an offsetting reduction in state expenditure across the board, we have a predictable pattern of the state economy's response to these shocks. As the claims in each year decline from 1996 through 2003, the number of jobs and net state revenue decline as well. As claims trend up after 2003, the benefit to firms increases as they reduce their cost of capital more than in earlier years; however, the spike in claims in 2004, 2006 and 2007 reduces state expenditure that manifests in reduced public sector employment that more than offsets the gain in private sector jobs.²³

Chart 5.2: Total and Private Non-farm Employment, Net State Revenue and Claims



²¹ Net state revenue is the difference between domestic sources of state revenue and uses of state funds.

²² Negative changes from the baseline forecast represent resources flowing from shrinking sectors to growing sectors in a dynamic economy.

²³ To approximate a balanced state budget, we model the tax cost of the credit as reduced state government spending across the board. The economic model responds by reducing state and local government employment.

Table 5.15: Economic and Fiscal Impacts of the Manufacturing Facilities Tax Credit

Economic Variable	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average
Total New Employment	-15	53	78	67	46	33	21	3	-31	-14	-35	-78	-20	-22	-18	4.53
Utilities	-0.01	0.09	0.12	0.1	0.07	0.06	0.04	0.02	-0.01	0.01	-0.01	-0.05	0.01	0.01	0.02	0.03
Construction	12.46	58.12	61.2	51.45	34.93	26.12	12.99	-1.71	-8.62	-11.17	-13.89	-16.82	-12.3	-11.32	-9.19	11.48
Manufacturing	0.85	3.43	3.74	3.4	2.72	2.08	1.24	0.4	0.5	0.17	-0.06	-0.34	-0.32	-0.5	-0.46	1.12
Wholesale Trade	0.22	2.41	3.18	3.27	2.98	2.78	2.5	1.88	1.91	1.39	1.23	0.57	0.81	0.62	0.6	1.76
Retail Trade	1.01	6.71	8.04	7.95	6.85	5.95	5.31	3.43	4.29	2.29	3.66	2.08	1.86	1.66	1.8	4.19
Transportation and Warehousing	0.02	0.32	0.4	0.39	0.32	0.27	0.24	0.13	0.08	0.14	0.04	-0.09	0.18	0.18	0.23	0.19
Information	0.04	0.73	0.97	0.94	0.81	0.72	0.61	0.46	0.29	0.34	0.18	-0.04	0.26	0.23	0.25	0.45
Finance and Insurance	-0.08	0.61	0.78	0.53	0.24	0.02	-0.2	-0.37	-0.35	-0.2	-0.26	-0.38	0.27	0.43	0.61	0.11
Real Estate and Rental and Leasing	0.05	1.8	2.06	1.51	0.77	0.2	-0.34	-0.83	-1.03	-0.73	-0.93	-1.24	0.08	0.26	0.66	0.15
Professional and Technical Services	0.38	5.31	7.02	6.94	6.12	5.66	4.84	3.6	2.9	3.43	2.17	0.85	3.08	2.9	3.17	3.89
Management of Companies and Enterprises	0.05	0.17	0.19	0.16	0.12	0.09	0.04	0.04	0.12	0.12	0.14	0.19	0.22	0.26	0.32	0.15
Administrative and Waste Services	-1.08	0.62	1.72	1.57	1.1	0.82	0.76	0.4	-0.98	0.14	-0.89	-2.82	0.17	-0.02	0.18	0.11
Educational Services	-0.2	0.12	0.4	0.39	0.33	0.27	0.23	0.14	-0.16	0.05	-0.2	-0.6	-0.02	-0.05	-0.02	0.05
Health Care and Social Assistance	-0.82	2.08	3.2	2.62	1.74	1.16	0.67	-0.09	-0.64	-0.61	-1.86	-4.12	-0.61	-0.46	0.15	0.16
Arts, Entertainment, and Recreation	-0.07	0.52	0.71	0.61	0.45	0.35	0.24	0.08	-0.04	0.03	-0.1	-0.35	0.06	0.08	0.14	0.18
Accommodation and Food Services	-0.37	0.88	1.51	1.39	1.13	0.89	0.73	0.31	-0.03	0.21	-0.23	-1.05	0.2	0.26	0.44	0.42
Other Services, except Public Administration	-0.44	1.82	2.54	2.1	1.4	0.95	0.55	-0.09	-0.66	-0.4	-0.9	-2.29	-0.32	-0.18	0.05	0.28
Private Non-Farm Employment	11.96	85.69	97.41	84.84	61.52	47.85	29.79	7.08	-2.93	-5.37	-12.7	-27.1	-7.08	-6.35	-1.46	24.21
State Government	-27.71	-36.79	-23.85	-21.83	-18.91	-18.08	-10.74	-6.05	-29.3	-9.12	-23.04	-50.57	-13.76	-16.71	-18.14	-21.64
Local Government	0.61	4.2	4.81	4.36	3.52	2.99	2.29	1.25	1.01	0.79	0.49	-0.12	0.82	0.85	1.1	1.93
New Gross Domestic Product	\$ (781,525)	\$2,933,949	\$4,624,783	\$4,274,065	\$3,354,148	\$2,731,729	\$2,220,847	\$1,090,775	\$ (815,354)	\$ 320,000	\$ (1,221,716)	\$ (4,438,656)	\$ 263,299	\$ 33,019	\$514,903	\$1,006,951
State Revenues at State Average Rates	\$ 27,461	\$ 478,412	\$ 624,097	\$ 604,831	\$ 542,316	\$ 491,502	\$ 425,715	\$ 291,417	\$ 317,530	\$ 172,173	\$ 194,438	\$ (18,196)	\$ 94,444	\$ 66,326	\$125,269	\$295,849
State Expenditures at State Average Rates	\$ 41,191	\$ (196,993)	\$ (229,553)	\$ (129,607)	\$ 7,329	\$ 75,616	\$ 131,585	\$ 218,562	\$ 434,515	\$ 266,868	\$ 397,714	\$ 627,749	\$ 179,443	\$ 198,977	\$183,086	\$147,099
Net New State Revenues	\$ (13,730)	\$ 675,404	\$ 853,650	\$ 734,438	\$ 534,987	\$ 415,886	\$ 294,130	\$ 72,854	\$ (116,985)	\$ (94,695)	\$ (203,276)	\$ (645,944)	\$ (84,999)	\$ (132,651)	\$ (57,817)	\$148,750

Recommendation:

We recommend eliminating the Manufacturing Facilities tax credit program because, as configured, it does not generate sufficient employment or net new tax revenue on average annually (see Table 5.15) to justify its continuation. We believe the job thresholds and qualifying criteria are too high (too strict) for the 50% credit and given the zero job creation threshold interpretation for the 25% credit (see footnote 15), the net benefit is too small to justify continuing the program.

In addition, corporate business tax credits are provided for qualifying service facilities located outside of an Enterprise Zone in a Targeted Investment Community on a sliding scale based on the number of full-time jobs created. This corporate tax credit is part of the Urban Jobs program (see Property Tax Abatement for Investment in Enterprise Zones on page 72).

The state offers other incentives to the manufacturing sector, such as Manufacturing Assistance Act (MAA) loans. The newly created Advanced Manufacturing Fund is expected to assist manufacturers with meeting growing supply chain demand and creating jobs. These incentives may be more direct and beneficial to job creation in Connecticut's manufacturing sector.

Property Tax Exemptions for Machinery and Equipment

There are local property tax exemptions for purchases of manufacturing machinery, certain biotech capital purchases and for commercial motor vehicles provided under CGS §12-81 exemptions 60, 70 and 72. Table 5.16 shows the dollar amount, the number of claiming firms and the distribution of investment among motor vehicles, biotech equipment and other machinery and equipment for years in which we have data for this detail. The exemption reduces the firm's property tax liability (increases its profit) and normally reduces its cost of capital.

In this case, however, the exemption does not reduce the firm’s cost of capital because we assume the firm uses the tax credit to increase shareholder value.²⁴ In other credit and abatement program analyses, we know the distribution of claims by industry and can assign a dollar value to capital cost changes by industry. The assumption in this case of using increased profit from the cost savings from the property tax exemption for increasing shareholder value is needed because we cannot categorize the property tax exemption for machinery and equipment by NAICS industry and we therefore cannot assign a capital cost reduction equal to a fraction of the claim amount by industry as the economic model requires. Including capital cost reductions as we do in other tax credit analyses, confers an additional, small benefit to firms that would create additional capital-labor substitution beyond what the property tax exemption itself induces.

Table 5.16: Machinery and Equipment Property Tax Exemptions

Fiscal Year	Number of Firms	Amount Claimed and Revenue Forgone
2010-2011		\$47,893,202
2009-2010		\$57,348,215
2008-2009		\$57,348,214
2007-2008		\$57,348,214
2006-2007		\$50,243,714
2005-2006		\$52,823,972
2004-2005		\$50,729,720
2003-2004		\$50,578,199
2002-2003		\$56,143,514
2001-2002		\$76,401,238
2000-2001	4,666	\$76.1 million [\$1 mil for motor vehicles]
1999-2000	4,575 [19 biotech]	\$70.5 million [\$7.1 million biotech]
1998-1999	4,472	\$68.3 million
1997-1998	4,109	\$61.8 million

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We do not have the value of the equipment purchased and do not know if these purchases represent additions to municipalities’ grand lists, as they could be purchases to replace current equipment. We make some assumptions to estimate

²⁴ Profits may be allocated to retained earnings, increasing worker compensation or dividends, debt repayment or a combination of these. We have no evidence of how firms actually allocate their profit in the presence of these incentives and our assumptions are a convenience for modeling.

the value of the additions to the grand list. First, we use the state’s average equalized mill rate (EMR) for each year to calculate the value of the machinery and equipment that property taxes were paid for. We need to use the state average EMR as we do not know where in the state the claiming companies are located. We then calculate the change in the machinery and equipment value from year to year and count the positive changes as net new additions to the grand lists. We then use 20%, 50% and 100% of these estimated new additions to the grand list as the range of full investment relevant to the tax credit. The economic model calculates the increase in the non-residential stock of capital in the state as a consequence of the firms’ capital spending.

We assume the state reimburses municipalities granting an exemption in full for their loss of property tax revenue. The state’s payments in turn reduce state spending across the board to maintain a balanced budget as we assume taxes are not increased to cover the unanticipated payments to municipalities.

Table 5.17: Economic and Fiscal Impact of Machinery and Equipment Property Tax Exemptions

Economic Variable	Average Annual Change From Baseline		
	20% Case	50% Case	100% Case
Total Employment (Jobs)	-1,350	-924	-214
Non-farm Employment (Jobs)	-339	58	719
State Gross Domestic Product	-90,210,033	-66,122,579	-26,021,983
State Revenue	-\$8,009,298	-\$3,011,853	\$5,307,738
State Expenditure	-\$4,620,018	-\$2,852,700	\$89,679
Net State Revenue	-\$3,389,279	-\$159,154	\$5,218,059

Table 5.17 shows the annual average changes from the baseline forecast of the Connecticut economy of total employment (full- and part-time jobs) in all sectors including self-employed and sole proprietorships. This incentive program stimulates firms to buy capital equipment for replacement or additions as well as to expand facilities, which in turn stimulates sectors of the state economy engaged in capital goods production and construction and allows firms purchasing such equipment to maintain or increase production. No matter what the level of investment, the state reduces expenditure across the board to accommodate forgone revenue as shown in Table 5.16 to maintain a balanced budget. The reduction in state spending manifests primarily in reduced public sector employment in the REMI model as the difference between the changes in private non-farm employment and total employment illustrates. The average amount claimed (average forgone revenue) over the period SFY 1998 through SFY 2011 is \$58.6 million and the number of firms based on limited data claiming the property tax exemption is between four thousand and five thousand.

The results imply that the machinery and equipment property tax exemption does not create sufficient new economic activity to offset its tax cost. Most of the decline in jobs below the baseline forecast occurs in the public sector in response to the assumed reduction in state spending to maintain a balanced budget. The decline in private sector jobs below the baseline is due in part to substituting capital for labor as the price of the former declines relative to the price of the latter.

Recommendation

It is difficult to make a recommendation on the continuity of this credit as we do not know the size of the average claim and who applies for the credit (industry-wise). It is possible a few companies account for a large portion of the credits and for them it is a significant factor affecting their location decision; or it could be many companies making smaller claims. We recommend more data collection on this particular credit to assess its significance and until such data is available, to let it continue.

Property Tax Abatements for Investment in Enterprise Zones

Connecticut was the first state to establish Enterprise Zones. In 1982, enterprise zones were designated in six municipalities; there are currently 17 Targeted Investment Communities with Enterprise Zones in the following municipalities:

Bridgeport	Meriden	Norwich
Bristol	Middletown	Southington
East Hartford	New Britain	Stamford
Groton	New Haven	Waterbury
Hartford	New London	Waterbury
Hamden	Norwalk	Windham

ZONE DESIGNATION

CGS §32-70 designates the establishment of the state’s Enterprise Zones. A zone consists of a census tract or several contiguous tracts within a targeted investment community. In order for a community to be eligible to establish a traditional Enterprise Zone, it must meet certain criteria related to social and economic conditions.

Primary census tracts must meet at least one of the following:

- a poverty rate of at least 25%
- an unemployment rate of two times the state average
- at least 25% of the tract’s population receives public assistance

Secondary census tracts must meet lower thresholds:

- a poverty rate of 15%

- an unemployment rate of at least 1.5 times the state average
- at least 15% of the tract's population receiving public assistance

East Hartford, Groton and Southington were designated enterprise zone municipalities with special legislation due to the impact of severe defense industry cutbacks with each municipality losing at least 2,000 jobs. The above poverty criteria did not apply.

A municipality containing a designated Enterprise Zone, described above, is defined in CGS §32-222(u) as a Targeted Investment Community. By statute, a municipality may have only one Enterprise Zone. However, a Targeted Investment Community may, if certain conditions obtain, designate other areas within the municipality as having the equivalent of Enterprise Zone level benefits.

Such designations include:

- Entertainment District (CGS §32-76) - A Targeted Investment Community may, with the approval of the DECD commissioner, designate an area within the municipality as an Entertainment District. Once an Entertainment district is designated, projects eligible for Enterprise Zone level benefits would include, but not limited to, facilities producing live or recorded multimedia products and support business necessary to sustain such operations. An eligible entertainment related project taking place anywhere within a municipality, with an approved Entertainment District, is eligible for Enterprise Zone level benefits. In the event that an eligible entertainment related project takes place within the boundaries of the designated Entertainment District, the municipality has the option of providing 100% property tax abatement for the eligible project for up to seven years, rather than the standard tax abatement of 80% for five years. Entertainment related to gambling or gaming facilities, or facilities whose primary source of revenue is the sale of alcoholic beverages are specifically excluded per statute. In addition, video arcades and theme parks do not fall within the range of definitions provided in statute. However, within the designated district, the municipality may provide a 100%, seven-year property tax abatement for any real property improvement (cf. CGS §32-76a). Currently, Entertainment Districts exist in Bridgeport, New Britain, Stamford, and Windham. Real estate transactions occurring in Entertainment Districts do not have to pay state real estate conveyance taxes (CGS §12-498(b)(3)).
- Qualified Manufacturing Plant (CGS §32-75c) - Any Targeted Investment Community with a manufacturing plant having an area of at least 500,000 square feet, which is located outside the Enterprise Zone may, with the approval of the DECD commissioner, designate such a facility a Qualified Manufacturing Plant. An eligible company completing an approved project in such a facility is eligible for the same benefits and subject to the same conditions, as those who qualify

for benefits in an Enterprise Zone. Bristol and New Britain appear to be the only Targeted Investment Communities that have facilities eligible for such designations. Each municipality has applied for and received such a designation for specific facilities.

- Railroad Depot Zone (CGS §32-75a) - Any Targeted Investment Community with an abandoned or underutilized railroad depot area, which is located outside of the existing Enterprise Zone may, with the approval of the DECD commissioner, designate this area and a reasonable amount of adjacent area as a Railroad Depot Zone. For the purpose of this designation, a railroad depot is defined as an area that abuts an active or inactive rail line and contains vacant or underutilized manufacturing or warehousing facilities that originally depended on railroad access to operate. An eligible project taking place in such a designated area is eligible for the same benefits and subject to the same conditions as those that qualify for benefits in an Enterprise Zone. Currently, East Hartford, Hamden and Norwich have applied for and received such a designation.

Benefits for Firms in an Enterprise Zone

- 1) A five year, 80% abatement of local property taxes on qualifying real and personal property subject to the property being new to the grand list of the municipality as a direct result of a business expansion or renovation project or in the case of an existing building, having met the vacancy requirement. The property tax abatement is for a five-year period and takes effect with the start of the first full assessment year following the issuance of a “Certificate of Eligibility.” Statutory reference to these benefits appears in CGS §§32-9p, 2-9r, 32-9s, 12-81 exemptions 59 and 60.
- 2) A ten-year, 25% credit on that portion of the state’s corporation business tax that is directly attributable to a business expansion or renovation project as determined by DRS. The corporation tax credit is available for a ten-year period and takes effect with the start of the business’ first full fiscal year following the issuance of a “Certificate of Eligibility.” The corporate tax credit increases to 50% if a minimum of 30% of the new full time positions are filled by either zone residents or are residents of the municipality and are Workforce Investment Act (WIA) eligible. The statutory reference for this benefit is CGS §12-217(e). We describe this program above under the Manufacturing Facilities tax credit program.
- 3) As of January 1, 1997, newly formed corporations located in a zone qualify for a 100% corporate tax credit for their first three taxable years and a 50% tax credit for the next seven taxable years. This is subject to corporation having at least 375 employees at least 40% of whom are either zone residents or residents of the municipality and who qualify for the WIA or the corporation has less than 375 employees at least 150 of whom are zone residents or who reside in the municipality and qualify for the WIA. We describe this program above under the Enterprise Zone Tax Credit for Qualifying Corporations. Note that there have been no claims for this credit.

- 4) Public Act 96-264 (CGS §32-229) A business engaged in biotechnology, pharmaceutical, or photonics research, development or production with not more than 300 employees, is eligible for Enterprise Zone benefits if it is located in a municipality with (1) a major research university with programs in biotechnology, pharmaceuticals, or photonics and (2) an Enterprise Zone. Benefits are subject to the same conditions as those for businesses located in an Enterprise Zone.

Firms that locate or expand in certain census tracts in certain towns designated as enterprise zones described above under benefits (1) and (4) may apply for a property tax abatement equal to a fraction of the increase in the Grand List (the value of the new plant and equipment) as a result of their investment.

A description of Connecticut's enterprise zone programs follows the impact analysis. The firm's property tax abatement is equal to 80% of the assessed value (which is 70% of market value) of new plant and equipment multiplied by the appropriate mill rate implying that the grand list increases are perhaps 50 times larger considering a mill rate of 20.

The municipality absorbs 40% of the abatement and the state reimburses the municipality for 40% of the abatement. We model the state's 'cost' as reduced government spending to balance the budget in the REMI model as we assume taxes are not raised to cover the payments to municipalities. Municipalities in turn forgo an equal amount of tax revenue and we reduce local government spending correspondingly. We model the enterprise zone property tax abatement as 20%, 50% and 100% of half the abatement (claim) amount in increased investment in construction and half the abatement amount in increased investment in producers' durable equipment. This captures the range of inducement up to the amount of the claim split equally between plant and equipment.²⁵ This acknowledges the fact that the investments are as much as 50 times greater than the abatements. For example, if a firm received an abatement of \$10,000 and the assumed mill rate is 20, then the investment in plant and equipment needed to be \$1.78 million in market value or \$1.25 million in assessed value. Our assumption is that the incremental investment is a portion of the abatement.

Table 5.18 shows the dollar amounts claimed each fiscal year since SFY 2003. Data are from the OPM Municipal Grants database.

²⁵ We could extract the amounts spent on real estate (plant) and personal property (equipment) from OPM paper records but we did not due to human resource and time constraints.

Table 5.18: Enterprise Zone Property Tax Abatements, SFY 2003 – SFY 2013

Fiscal Year	State	Local	Business	Total
2012 - 13	\$5,800,000	\$5,800,000	\$2,900,000	\$14,500,000
2011 - 12	\$5,800,000	\$5,800,000	\$2,900,000	\$14,500,000
2010 - 11	N/A			
2009 - 10	\$7,265,292	\$7,265,292	\$3,632,646	\$18,163,230
2008 - 09	\$6,328,289	\$6,328,289	\$3,164,145	\$15,820,723
2007 - 08	\$7,046,907	\$7,046,907	\$3,523,454	\$17,617,268
2006 - 07	\$7,098,291	\$7,098,291	\$3,549,145	\$17,745,726
2005 - 06	\$7,486,278	\$7,486,278	\$3,743,139	\$18,715,695
2004 - 05	\$7,000,000	\$7,000,000	\$3,500,000	\$17,500,000
2003 - 04	\$8,101,651	\$8,101,651	\$4,050,826	\$20,254,128
2002 - 03	\$5,988,760	\$5,988,760	\$2,994,380	\$14,971,900
TOTAL	\$67,915,468	\$67,915,468	\$33,957,735	\$169,788,670
N/A=data not reported				

Table 5.19 shows the dollar amounts claimed by NAICS industry group by year. We transcribed claim amounts for each company from OPM paper records and matched the DECD-assigned certification number with DECD records to extract the NAICS code from DECD records for each company. We aggregated claims by NAICS code. OPM records from which we transcribed individual firm claim data are for the grand list year that runs from October 1 through September 30. Discrepancies in Table 4.20 with OPM’s Municipal Grants data in Table 4.19 arise from OPM adjustments to the grand list records because of late or erroneous submissions by municipalities. We did not pick up adjustments for the economic analysis. Adjusted grand list year data appears in an OPM fiscal year report dated two years hence (for example, grand list 2003 claims appear in SFY 2005 OPM reports). OPM’s available paper records date from grand list year 2003. For its Annual Report, DECD captured Table 5.18 data for fiscal years before SFY 2005 reported in Table 5.19 from earlier versions of the Municipal Grants database that reports claims by municipality aggregated and adjusted from firm-level data.

Table 5.19: Enterprise Zone Property Tax Abatements by NAICS Industry and Year

NAICS Industry	Industry Description	Fiscal Year										Totals	Annual Average
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014		
23	Construction	\$ 2,194	\$ 19,013	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,765	\$ 14,861	\$ 25,840	\$ 73,674	\$ 7,367
42	Wholesale Trade	\$ 97,076	\$ 187,575	\$ 19,013	\$ 236,537	\$ 406,423	\$ 364,895	\$ 116,678	\$ 250,874	\$ 215,914	\$ 215,516	\$ 2,110,500	\$ 211,050
44	Retail Trade	\$ 43,262	\$ 27,191	\$ 187,575	\$ 883,906	\$ 664,609	\$ 660,156	\$ 639,655	\$ 132,399	\$ 84,405	\$ 3,997	\$ 3,327,153	\$ 332,715
55	Management of Companies & Enterprises	\$ 62,508	\$ 67,657	\$ 27,191	\$ 542,198	\$ 579,663	\$ 454,756	\$ 440,487	\$ 896	\$ -	\$ 11,374	\$ 2,186,731	\$ 218,673
311	Food Manufacturing	\$ 159,316	\$ 170,840	\$ 67,657	\$ 132,082	\$ 157,799	\$ 335,778	\$ 267,389	\$ 344,013	\$ 248,331	\$ 128,136	\$ 2,011,342	\$ 201,134
312	Beverage & Tobacco Product Manufacturing	\$ 191,694	\$ 188,117	\$ 170,840	\$ -	\$ 212,009	\$ 175,849	\$ 4,034	\$ 45	\$ 5,087	\$ 3,671	\$ 951,345	\$ 95,135
313	Textile Mills	\$ 38,837	\$ 35,725	\$ 188,117	\$ -	\$ 14,112	\$ 14,199	\$ 13,724	\$ 13,103	\$ 13,452	\$ 3,070	\$ 334,338	\$ 33,434
314	Textile Product Mills	\$ 6,793	\$ 30,093	\$ 35,725	\$ 24,090	\$ 26,076	\$ 27,395	\$ 30,428	\$ -	\$ -	\$ 17,795	\$ 198,395	\$ 19,839
315	Apparel Manufacturing	\$ 17,642	\$ 1,422	\$ -	\$ -	\$ -	\$ 3,272	\$ 3,597	\$ 3,857	\$ 3,070	\$ 12,451	\$ 45,312	\$ 4,531
316	Leather & Allied Product Manufacturing	\$ -	\$ 5,027	\$ 30,093	\$ -	\$ 3,100	\$ 3,111	\$ -	\$ -	\$ -	\$ 33,970	\$ 75,301	\$ 7,530
321	Wood Product Manufacturing	\$ 61,800	\$ 99,169	\$ 1,422	\$ 51,257	\$ 63,134	\$ 45,619	\$ 45,970	\$ 46,117	\$ -	\$ 59,472	\$ 473,959	\$ 47,396
322	Paper Manufacturing	\$ 136,954	\$ 126,964	\$ 5,027	\$ 11,358	\$ 11,001	\$ 11,078	\$ 12,061	\$ 30,445	\$ 152	\$ 62,045	\$ 407,085	\$ 40,708
323	Printing & Related Support Activities	\$ 110,228	\$ 139,226	\$ 99,169	\$ 70,200	\$ 88,180	\$ 89,884	\$ 57,124	\$ 65,492	\$ 23,680	\$ 500,222	\$ 1,243,405	\$ 124,340
324	Petroleum & Coal Products Manufacturing	\$ 17,981	\$ 18,121	\$ 126,964	\$ 14,092	\$ 15,286	\$ -	\$ -	\$ -	\$ -	\$ 415,863	\$ 608,307	\$ 60,831
325	Chemical Manufacturing	\$3,780,584	\$3,546,213	\$ 139,226	\$ 2,076,307	\$ 2,017,812	\$ 2,727,397	\$2,450,769	\$ 96,624	\$ 118,527	\$ 75,482	\$ 17,028,940	\$1,702,894
326	Plastics & Rubber Products Manufacturing	\$ 157,797	\$ 110,464	\$ 18,121	\$ 60,040	\$ 43,567	\$ 49,338	\$ 27,545	\$ 33,672	\$ 19,891	\$ 52,813	\$ 573,249	\$ 57,325
327	Nonmetallic Mineral Product Manufacturing	\$ 44,678	\$ 61,867	\$3,546,213	\$ 40,513	\$ 24,889	\$ 18,429	\$ 8,029	\$ 22,038	\$ 599	\$ 116,381	\$ 3,883,636	\$ 388,364
331	Primary Metals Manufacturing	\$ 38,922	\$ 142,153	\$ 110,464	\$ 51,188	\$ 33,410	\$ 29,491	\$ 277,433	\$ 349,512	\$ 559,461	\$ 46,637	\$ 1,638,671	\$ 163,867
332	Fabricated Metal Product Manufacturing	\$1,806,883	\$ 374,049	\$ 61,867	\$ 322,046	\$ 488,554	\$ 637,836	\$ 544,911	\$ 603,725	\$ 385,561	\$ 123,895	\$ 5,349,327	\$ 534,933
333	Machinery Manufacturing	\$ 228,131	\$ 189,568	\$ 142,153	\$ 219,762	\$ 200,545	\$ 108,403	\$ 112,680	\$ 87,291	\$ 68,756	\$ 11,719	\$ 1,369,008	\$ 136,901
334	Computer & Electronic Product Manufacturing	\$ 103,812	\$ 118,577	\$ 374,049	\$ 69,452	\$ 77,656	\$ 79,426	\$ 67,767	\$ 91,570	\$ 30,604	\$ 13,803	\$ 1,026,716	\$ 102,672
335	Electrical Equipment, Appliance & Component Manufacturing	\$ 266,332	\$ 283,505	\$ 189,568	\$ 51,319	\$ 11,726	\$ 42,207	\$ 5,632	\$ 117,039	\$ 137,646	\$ 405,768	\$ 1,510,743	\$ 151,074
337	Furniture & Related Product Manufacturing	\$ 95,480	\$ 63,315	\$ 118,577	\$ 105,952	\$ 66,739	\$ 72,751	\$ 81,009	\$ 7,526	\$ 59,327	\$ 899,503	\$ 1,570,179	\$ 157,018
339	Miscellaneous Manufacturing	\$ 134,524	\$ 118,336	\$ 283,505	\$ 187,141	\$ 147,572	\$ 158,198	\$ 180,206	\$ 2,957,042	\$ 185,275	\$ 633,930	\$ 4,985,729	\$ 498,573
488	Support Activities for Transportation	\$ 15,053	\$ 34,333	\$ 63,315	\$ 44,536	\$ 96,734	\$ 16,242	\$ -	\$ -	\$ -	\$ 11,719	\$ 281,933	\$ 28,193
492	Couriers & Messengers	\$ 18,213	\$ 4,863	\$ 118,336	\$ 6,091	\$ 6,480	\$ -	\$ -	\$ -	\$ -	\$ 13,803	\$ 167,785	\$ 16,779
511	Publishing Industries (except Internet)	\$ 3,752	\$ 4,220	\$ 34,333	\$ 35,517	\$ 61,843	\$ 49,661	\$ 50,837	\$ 10,551	\$ 7,578	\$ 405,768	\$ 664,060	\$ 66,406
512	Motion Picture & Sound Recording Industries	\$ 2,871	\$ 2,935	\$ 4,863	\$ 1,148	\$ 5,981	\$ -	\$ -	\$ 11,324	\$ 12,064	\$ 899,503	\$ 940,688	\$ 94,069
515	Broadcasting (except Internet)	\$ 30,870	\$ 24,170	\$ -	\$ -	\$ 74,892	\$ 71,904	\$ 101,108	\$ -	\$ 99,196	\$ -	\$ 402,140	\$ 40,214
516 ‡	Internet publishing and broadcasting	\$ 727	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 122,690	\$ 658,864	\$ -	\$ 782,280	\$ 78,228
517	Telecommunications	\$ 29,755	\$ 2,419	\$ -	\$ 2,477	\$ -	\$ -	\$ -	\$ 637,501	\$ 90,023	\$ 106,808	\$ 868,984	\$ 86,898
518	Data Processing, Hosting & Related Services	\$ -	\$ 101,558	\$ 4,220	\$ 90,526	\$ 96,538	\$ 98,315	\$ 3,913	\$ -	\$ 14,618	\$ 16,299	\$ 425,986	\$ 42,599
522	Credit Intermediation & Related Activities	\$ 241,513	\$ 248,853	\$ 2,935	\$ 10,493	\$ 68,000	\$ 129,328	\$ 100,136	\$ 122,690	\$ 610	\$ 405,768	\$ 1,330,324	\$ 133,032
523	Securities, Commodity Contracts & Other Financial Investments & Related Activities	\$ -	\$ -	\$ 24,170	\$ 24,449	\$ 58,789	\$ 69,902	\$1,283,888	\$ 637,501	\$ 3,000	\$ 899,503	\$ 3,001,202	\$ 300,120
524	Insurance Carriers & Related Activities	\$ -	\$ -	\$ -	\$ 34,908	\$ 40,273	\$ 41,917	\$ 42,737	\$ 22,962	\$ 2,579	\$ 633,930	\$ 819,306	\$ 81,931
531	Real Estate	\$ -	\$ 47,714	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 39,295	\$ 53,228	\$ 4,789	\$ 145,026	\$ 14,503
541	Professional, Scientific & Related Technical Services	\$ 108,953	\$ 80,813	\$ 2,419	\$ 43,624	\$ 55,331	\$ 55,999	\$ 108,543	\$ 46,617	\$ 2,873,869	\$ 106,808	\$ 3,482,977	\$ 348,298
561	Administrative & Support Services	\$ 61,099	\$ 336,027	\$ 101,558	\$ 329,732	\$ 3,060	\$ 3,060	\$ 3,527	\$ -	\$ 7,060	\$ 16,299	\$ 861,422	\$ 86,142
562	Waste Management & Remediation Services	\$ 30,150	\$ 29,315	\$ 248,853	\$ 18,508	\$ -	\$ -	\$ -	\$ -	\$ 6,052,072	\$ 3,528	\$ 6,382,427	\$ 638,243
711	Performing Arts, Spectator Sports & Related Industries	\$ 620	\$ 614	\$ -	\$ 4,669	\$ 4,457	\$ 13,220	\$ -	\$ 15,222	\$ -	\$ 27,945	\$ 66,748	\$ 6,675
811	Repair & Maintenance	\$ 33,711	\$ 7,346	\$ 47,714	\$ 16,021	\$ 24,544	\$ 9,055	\$ 2,979	\$ 6,617	\$ -	\$ 12,229	\$ 160,216	\$ 16,022
3363	Motor Vehicle Parts Manufacturing	\$ 7,773	\$ 8,942	\$ 80,813	\$ 5,656	\$ 5,729	\$ 5,713	\$ 7,867	\$ 7,526	\$ -	\$ 25	\$ 130,043	\$ 13,004
3364	Aerospace Product & Parts Manufacturing	\$ 75,309	\$ 70,548	\$ 336,027	\$ 48,029	\$ 25,337	\$ 12,619	\$ 13,058	\$ 33,786	\$ -	\$ 17,269	\$ 631,981	\$ 63,198
3366	Ship & Boat Building	\$ 72,279	\$ 188	\$ 29,315	\$ 267,792	\$ 274,970	\$ 518,777	\$ 699,608	\$ 2,923,256	\$ -	\$ 2,895,168	\$ 7,681,352	\$ 768,135
	Totals	\$8,336,078	\$7,129,044	\$7,041,407	\$ 6,133,616	\$ 6,256,819	\$ 7,205,179	\$7,805,328	\$ 9,902,581	\$ 12,049,359	\$ 10,350,512	\$ 82,209,923	\$7,129,639

Results for Enterprise Zone Property Tax Abatements

There are two sets of results for the Enterprise Zone Property Tax Abatement modeling. The first, shown directly below, uses the methodology used in the 2010 tax credit study (the first edition of this report) and covers years 2005 through 2014. The second set of results shown immediately after is obtained using a new methodology that incorporates a more complete assessment of the investments that generate the EZ abatement. However due to data limitations we could use this new methodology only for state fiscal years 2012 through 2014. We present both sets of results in order to take account of the full period of the availability of the program.

Enterprise Zone Property Tax Abatements, 2010 methodology for SFY 2005-SFY 2014

Tables 5.20 through 5.22 display results (that is, changes from the baseline forecast of the Connecticut economy) for the range of inducements we assume the Enterprise Zone property tax abatement elicits. Under this methodology, we assume the EZ property tax abatement program induces investments equal to 20%, 50% and 100% of the value of the abatement. The balance of the abatement reduces the firm's capital cost. Table 5.20 displays net economic and fiscal impacts for the 20% case.

In this case, the incentive produces a net revenue loss to the state over the period because the induced investment and concomitant additional economic activity do not on average create sufficient tax revenue from all sources to offset the tax cost. In other words, if we assume firms invested 80% of their abatement amount in any case while the state and the municipalities lost \$8.4 million in 2005 for example, the modeled response of the state's and the municipalities' reductions in spending to maintain their respective balanced budgets is to reduce public sector employment (or forgo hiring and/or leave open positions unfilled) which is greater in most years than private sector employment increases. In the first two years in which private, non-farm employment decreases below the baseline forecast (2005 and 2006), the initial shock of reduced public spending ripples through the economy reflecting reduced state and local demand for private sector goods and services. In the years following 2006, there is a cumulative effect of the Enterprise Zone private investment building demand for private sector goods and services that gradually increases over time. This demand and the associated increases in private sector jobs are insufficient to offset the roughly constant tax cost that we model as reduced public spending across the board that manifests as reduced public sector employment (or forgone hiring and/or open positions left unfilled).

Table 5.21 displays results for the 50% case in which half of the investment would have occurred absent the credit. In this case, the incentive produces a net revenue loss to the state over the period because the induced investment does not on average each year create sufficient tax revenue from all sources to offset the tax cost. The explanation is identical to the previous case except that more of the investment is assumed to be undertaken because of the abatement.

Table 5.20: Results for Enterprise Zone Property Tax Abatements, 20% Case

Economic Variable	Fiscal										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual Average
Total New Employment Change	-403	-307	-270	-206	-196	-228	-235	-170	-146	-199	-236
Total Claims	\$7,997,753	\$6,983,993	\$6,941,225	\$6,053,765	\$6,226,812	\$7,338,423	\$7,810,455	\$6,523,250	\$6,101,141	\$7,566,371	\$6,954,319
Employment Change in:											
Utilities	-1	0	0	0	0	0	0	0	0	0	0
Construction	-16	-14	-12	-10	-9	-11	-11	-9	-6	-9	-11
Manufacturing	1	5	7	8	7	7	7	8	8	8	7
Wholesale Trade	-5	-3	-1	0	0	0	0	1	1	0	-1
Retail Trade	-14	-10	-5	0	0	-1	-2	-2	-2	-5	-4
Transportation and Warehousing	-1	-1	0	0	1	1	1	1	1	1	0
Information	-2	-1	0	0	0	0	0	1	1	0	0
Finance and Insurance	-3	-1	0	1	2	2	6	7	6	7	3
Real Estate and Rental and Leasing	-6	-4	-2	0	0	0	1	2	3	3	0
Professional and Technical Services	-11	-5	-1	3	4	4	5	8	9	9	3
Management of Companies and Enterprises	0	1	2	2	3	3	3	3	2	2	2
Administrative and Waste Services	-18	-12	-9	-6	-6	-7	-8	-5	-4	-7	-8
Educational Services	-4	-3	-3	-2	-2	-2	-3	-2	-2	-2	-3
Health Care and Social Assistance	-20	-14	-12	-8	-8	-10	-11	-7	-6	-9	-11
Arts, Entertainment, and Recreation	-3	-2	-2	-1	-1	-1	-1	-1	-1	-1	-1
Accommodation and Food Services	-9	-7	-6	-5	-4	-5	-5	-4	-3	-4	-5
Other Services, except Public Administration	-13	-9	-7	-4	-4	-6	-6	-3	-3	-5	-6
Private Non-Farm Employment	-125	-79	-52	-22	-17	-26	-25	-3	5	-13	-36
State Government	-138	-114	-109	-92	-90	-101	-106	-85	-76	-94	-101
Local Government	-140	-115	-109	-91	-89	-100	-104	-83	-74	-92	-100
New Gross Domestic Product	-\$26,184,883	-\$18,701,056	-\$14,437,974	-\$9,991,966	-\$8,771,400	-\$10,194,830	-\$10,419,681	-\$3,967,432	-\$2,689,462	-\$6,853,560	-\$11,221,224
New State Revenues	-\$1,992,792	-\$1,692,560	-\$1,432,895	-\$1,190,343	-\$1,208,948	-\$1,390,000	-\$1,490,832	-\$1,352,921	-\$1,312,893	-\$1,631,661	-\$1,469,585
New State Expenditures	\$910,256	\$55,740	-\$300,799	-\$692,495	-\$803,397	-\$719,000	-\$763,474	-\$1,250,891	-\$1,444,286	-\$1,114,951	-\$612,330
Net New State Revenues	-\$2,903,048	-\$1,748,300	-\$1,132,096	-\$497,848	-\$405,552	-\$671,000	-\$727,357	-\$102,030	\$131,394	-\$516,710	-\$857,255

Table 5.21: Results for Enterprise Zone Property Tax Abatements, 50% Case

Economic Variable	Fiscal	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual Average
Total Employment Change		-377.7	-297.9	-271.7	-215.6	-208.5	-239.3	-249.8	-189.5	-166.7	-216.1	-243
Total Claims		\$7,997,753	\$6,983,993	\$6,941,225	\$6,053,765	\$6,226,812	\$7,338,423	\$7,810,455	\$6,523,250	\$6,101,141	\$7,566,371	\$6,954,319
Employment Change in:												
Utilities		-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0
Construction		6	1.5	-0.7	-2.9	-4	-5.4	-6.7	-8.4	-8.5	-9	-4
Manufacturing		0.9	3.6	5	5.5	5.3	5.2	5.2	5.8	6.1	5.8	5
Wholesale Trade		-4.5	-2.7	-1.4	0	0.3	0.3	0.4	1.1	1.4	0.9	0
Retail Trade		-14.1	-10.4	-6.5	-2.7	-2.3	-3.1	-3.8	-3	-2.4	-4.7	-5
Transportation and Warehousing		-1.4	-0.8	-0.4	0.1	0.3	0.3	0.2	0.6	0.7	0.4	0
Information		-1.5	-0.8	-0.3	0.1	0.3	0.3	0.3	0.6	0.7	0.4	0
Finance and Insurance		-3.4	-1.6	-0.5	0.6	1.2	1.3	3.6	4.9	4.5	5	2
Real Estate and Rental and Leasing		-6.5	-4.3	-3.4	-1.8	-1.2	-1.4	-1.1	0.6	1.4	0.9	-2
Professional and Technical Services		-9.3	-4.5	-1.5	2	3.4	3.4	4.3	7	7.8	7.2	2
Management of Companies and Enterprises		0.2	0.6	1.3	1.7	2	2.1	2.1	1.9	1.7	1.5	2
Administrative and Waste Services		-17.4	-12.5	-10.5	-7.3	-7.3	-8.9	-9.6	-6.6	-5.6	-8.2	-9
Educational Services		-3.5	-3	-2.9	-2.4	-2.4	-2.7	-2.9	-2.3	-2.1	-2.5	-3
Health Care and Social Assistance		-19.5	-14.4	-12.8	-9.6	-9.5	-11.5	-12.5	-8.8	-7.8	-10.9	-12
Arts, Entertainment, and Recreation		-2.8	-2.1	-1.8	-1.3	-1.2	-1.4	-1.5	-1.1	-1	-1.3	-2
Accommodation and Food Services		-9.3	-7.7	-7.1	-5.7	-5.4	-6.3	-6.6	-5.1	-4.5	-5.7	-6
Other Services, except Public Administration		-13	-9.2	-7.8	-5.5	-5.5	-6.6	-7	-4.7	-3.9	-5.7	-7
Private Non-Farm Employment		-99.9	-68.6	-51.5	-29.5	-26.1	-34.7	-35.6	-17.6	-11.5	-26.1	-40
State Government		-138	-114	-109.8	-93	-91.3	-102.4	-107.2	-86.3	-77.9	-95.2	-102
Local Government		-139.8	-115	-110.3	-92.9	-91.1	-102.2	-106.9	-85.7	-77.2	-94.7	-102
New Gross Domestic Product		-\$28,689,524	-\$21,623,096	-\$19,130,315	-\$13,988,753	-\$13,031,794	-\$15,674,552	-\$16,150,506	-\$10,315,323	-\$8,471,805	-\$13,295,906	-\$16,037,157
New State Revenues at State Average Rates		-\$1,799,941	-\$1,592,581	-\$1,367,266	-\$1,122,965	-\$1,155,967	-\$1,400,000	-\$1,504,877	-\$1,326,394	-\$1,251,367	-\$1,588,249	-\$1,410,961
New State Expenditures at State Average Rates		\$1,028,538	\$176,953	-\$182,302	-\$655,063	-\$770,644	-\$800,000	-\$902,926	-\$1,428,424	-\$1,564,209	-\$1,270,599	-\$636,868
Net New State Revenues		-\$2,828,479	-\$1,769,534	-\$1,184,964	-\$467,902	-\$385,322	-\$600,000	-\$601,951	\$102,030	\$312,842	-\$317,650	-\$774,093

Table 5.22: Results for Enterprise Zone Property Tax Abatements, 100% Case

Economic Variable	Fiscal Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Annual Average
Total New Employment Change	-334	-281	-274	-232	-228	-258	-272	-219	-198	-243	-254
Total Claims	\$7,997,753	\$6,983,993	\$6,941,225	\$6,053,765	\$6,226,812	\$7,338,423	\$7,810,455	\$6,523,250	\$6,101,141	\$7,566,371	\$6,954,319
Employment Change in:											
Utilities	-1	0	0	0	0	0	0	0	0	0	0
Construction	43	27	19	8	4	4	1	-8	-12	-8	8
Manufacturing	0	1	1	2	2	2	2	3	3	3	2
Wholesale Trade	-4	-2	-2	0	0	0	1	2	2	2	0
Retail Trade	-14	-11	-10	-7	-6	-6	-6	-4	-2	-4	-7
Transportation and Warehousing	-1	-1	-1	0	0	0	0	0	0	0	0
Information	-1	0	0	0	0	0	0	1	1	1	0
Finance and Insurance	-3	-2	-1	0	0	0	0	1	2	1	0
Real Estate and Rental and Leasing	-7	-6	-5	-4	-4	-4	-4	-2	-1	-2	-4
Professional and Technical Services	-7	-4	-2	1	2	2	3	5	6	5	1
Management of Companies and Enterprises	0	0	0	0	1	1	1	1	1	1	1
Administrative and Waste Services	-17	-14	-13	-10	-10	-11	-12	-9	-8	-11	-12
Educational Services	-3	-3	-3	-3	-3	-3	-3	-3	-2	-3	-3
Health Care and Social Assistance	-19	-15	-14	-12	-12	-14	-15	-12	-11	-14	-14
Arts, Entertainment, and Recreation	-3	-2	-2	-2	-2	-2	-2	-2	-1	-2	-2
Accommodation and Food Services	-9	-8	-8	-7	-7	-8	-9	-7	-7	-8	-8
Other Services, except Public Administration	-13	-10	-9	-8	-7	-8	-9	-7	-6	-8	-9
Private Non-Farm Employment	-58	-51	-51	-42	-41	-48	-52	-41	-36	-46	-47
State Government	-137	-114	-111	-94	-93	-104	-109	-89	-80	-98	-103
Local Government	-139	-116	-112	-96	-94	-106	-111	-90	-82	-99	-105
New Gross Domestic Product	-\$23,907,937	-\$19,869,872	-\$20,453,796	-\$17,485,941	-\$16,289,742	-\$19,115,307	-\$20,839,362	-\$17,192,205	-\$16,136,771	-\$20,560,680	-\$19,185,161
New State Revenues at State Average Rates	-\$1,278,815	-\$1,137,811	-\$1,114,778	-\$951,713	-\$944,039	-\$1,150,000	-\$1,246,039	-\$1,042,749	-\$972,938	-\$1,213,422	-\$1,105,230
New State Expenditures at State Average Rates	\$965,968	\$266,315	-\$82,036	-\$495,976	-\$682,020	-\$734,000	-\$847,748	-\$1,313,130	-\$1,513,111	-\$1,270,599	-\$570,634
Net New State Revenues	-\$2,981,661	-\$1,854,911	-\$1,363,185	-\$608,261	-\$340,832	-\$530,131	-\$517,077	\$350,456	\$696,571	\$74,018	-\$707,501

Table 5.22 displays results for the 100% case in which all of the investment (100% of the abatement value) would have occurred because of the credit. In this case, the incentive produces a net revenue loss to the state over the period because the induced investment does not on average create sufficient tax revenue from all sources to offset the tax cost. The explanation is identical to the previous case except that none of the investment is assumed to be undertaken absent the abatement.

Enterprise Zone Property Tax Abatements, New Methodology for SFY 2012-SFY 2014

In November 2013, the Connecticut Enterprise Zone tax abatement program to incentivize new plant, equipment, and community improvements, which is jointly administered by the Office of Policy and Management (OPM) and the Department of Economic and Community Development (DECD), underwent a process improvement (“lean”) review that included participation by town assessors, the Department of Revenue Services (DRS), agency personnel and other participants in all aspects of the program’s functions from initial certification of projects, assignment of industry (NAICS) codes, filing of project paperwork with DECD and OPM for the reimbursement portion of the program, and the collection of three years of additional data from OPM for paper-compiled information that included the actual assessment amounts, dollar amount of revenue losses to the state, and related data. In that lean process, it was discovered that proper attention to the “investment” generated by this tax abatement incentive program, might require an alternative measurement of that capital put in place as a result of the abatement.

Much of the investment (buildings, building additions and renovations, machinery, equipment, and site improvements) might have useful lives well beyond the five-year limit of the 80% abatement for each of five years and were permanent additions to the state’s capital stock. Moreover, the market value of the investment far exceeded the state’s 50% “revenue loss” on the amount the state reimburses the towns under the program. In a single 2012 project, for example, for which the state’s loss was about \$7,900 – an amount equally borne by the town, the 70% assessment value alone was about \$476,000, therefore with a market value (because of the state’s 70% assessment ratio) in excess of \$680,000. Although this investment does not occur in each of the five years of abatement, this full level of investment should at least be counted as new capital in the year it was first certified.

In evaluating the program three years ago, investment was taken into account, but only up to twice the level of the abatement amount: half as construction, half as producers' durable equipment, and in full as non-residential capital stock. It was assumed that capital investment was at 20%, 50%, or 100% of the corresponding abatement amount. However, with the revelation in the "lean" exercise, it became apparent that the more significant level of the "full market value of the investment" at least in the year it was first "certified" should be reflected in the model. Hence, for the three years (Grand List Years 2010, 2011, and 2012, corresponding to Fiscal Years FY 2012, FY 2013, and FY 2014) of most recently collected OPM paper-based data on assessment and revenue loss, full market value investments were entered into the economic modeling process to measure their economic impact in addition to the impact of the revenue losses resulting from abatement of local property taxes and state costs incurred in reimbursement.

The results of the alternative methodology for the Connecticut Enterprise Zone tax abatement program including the full market value of the one-time capital investment for each year 2010, 2011, and 2012 and their corresponding scenarios are shown in Tables 5.23, 5.24, and 5.25 for their assumed 20%, 50%, and 100% scenarios. **They show, indeed, that the net new revenue to the state generated by the incentive does indeed exceed revenue losses in each case and in each year, ranging from an average of \$351,000 in the 20% case for three years, and \$12.6 million in the 50% case, to well over \$27 million annually on average in the 100% case. The Enterprise Zone program also leads to substantial job creation ranging from 851 to 1,976 jobs per year on average from 2010-2012.**

Table 5.23: Results for Enterprise Zone Property Tax Abatements (2010-12) with Full Market Value of Investment, 20% Case

Economic Variable	Fiscal Year	2012	2013	2014	Annual Average
Total New Employment Change		-41	-211	-38	-97
Total Claims		\$6,523,250	\$6,101,141	\$7,566,371	\$6,730,254
Employment Change in:					
Utilities		0	0	0	0
Construction		0	0	0	0
Manufacturing		0	0	0	0
Wholesale Trade		133	15	139	96
Retail Trade		6	2	9	6
Transportation and Warehousing		4	-1	6	3
Information		6	-6	10	3
Finance and Insurance		0	-1	0	0
Real Estate and Rental and Leasing		1	0	2	1
Professional and Technical Services		0	-2	1	0
Management of Companies and Enterprises		-2	-4	-2	-3
Administrative and Waste Services		8	-1	14	7
Educational Services		0	0	0	0
Health Care and Social Assistance		-6	-10	-6	-7
Arts, Entertainment, and Recreation		-1	-2	-1	-1
Accommodation and Food Services		-4	-11	-4	-6
Other Services, except Public Administration		-1	-2	-1	-1
Private Non-Farm Employment		-3	-6	-3	-4
State Government		-2	-8	-2	-4
Local Government		138	-36	163	88
New Gross Domestic Product		-\$4,000,000	-\$12,000,000	-\$3,000,000	-\$6,333,333
New State Revenues at State Average Rates		\$664,000	-\$668,000	\$1,038,000	\$344,667
New State Expenditures at State Average Rates		-\$53,000	\$580,000	-\$546,000	-\$6,333
Net New State Revenues		\$717,000	-\$1,248,000	\$1,584,000	\$351,000

Table 5.24: Results for Enterprise Zone Property Tax Abatements (2010-12) with Full Market Value of Investment, 50% Case

Economic Variable	Fiscal Year	2012	2013	2014	Annual Average
Total New Employment Change		1,124	154	1,275	851
Total Claims		\$6,523,250	\$6,101,141	\$7,566,371	\$6,730,254
Employment Change in:					
Utilities		0	0	0	0
Construction		0	0	0	0
Manufacturing		1	0	1	1
Wholesale Trade		775	187	836	599
Retail Trade		38	16	47	34
Transportation and Warehousing		41	16	57	38
Information		97	33	124	85
Finance and Insurance		4	0	4	3
Real Estate and Rental and Leasing		13	6	17	12
Professional and Technical Services		11	0	11	7
Management of Companies and Enterprises		16	-1	15	10
Administrative and Waste Services		84	31	112	76
Educational Services		1	0	1	1
Health Care and Social Assistance		26	1	31	19
Arts, Entertainment, and Recreation		5	1	7	4
Accommodation and Food Services		47	3	52	34
Other Services, except Public Administration		7	1	9	6
Private Non-Farm Employment		20	3	24	16
State Government		35	3	39	26
Local Government		1222	301	1387	970
New Gross Domestic Product		\$109,000,000	\$16,000,000	\$127,000,000	\$84,000,000
New State Revenues at State Average Rates		\$11,000,000	\$4,000,000	\$15,000,000	\$10,000,000
New State Expenditures at State Average Rates		-\$5,000,000	\$1,000,000	-\$4,000,000	-\$2,666,667
Net New State Revenues		\$16,000,000	\$3,000,000	\$19,000,000	\$12,666,667

Table 5.25: Results for Enterprise Zone Property Tax Abatements (2010-12) with Full Market Value of Investment, 100% Case

Economic Variable	Fiscal Year			Annual Average
	2012	2013	2014	
Total New Employment Change	2,539	553	2,836	1,976
Total Claims	\$6,523,250	\$6,101,141	\$7,566,371	\$6,730,254
Employment Change in:				
Utilities	0	0	0	0
Construction	0	0	0	0
Manufacturing	2	0	2	1
Wholesale Trade	1571	392	1695	1219
Retail Trade	73	26	85	61
Transportation and Warehousing	86	36	117	80
Information	204	76	260	180
Finance and Insurance	8	1	9	6
Real Estate and Rental and Leasing	28	12	35	25
Professional and Technical Services	22	0	18	13
Management of Companies and Enterprises	37	1	32	23
Administrative and Waste Services	176	67	228	157
Educational Services	3	0	2	2
Health Care and Social Assistance	65	12	73	50
Arts, Entertainment, and Recreation	12	4	16	11
Accommodation and Food Services	108	18	116	81
Other Services, except Public Administration	17	4	19	13
Private Non-Farm Employment	46	12	54	37
State Government	80	13	86	60
Local Government	2539	673	2847	2020
New Gross Domestic Product	\$140,000,000	\$31,000,000	\$160,000,000	\$110,333,333
New State Revenues at State Average Rates	\$24,000,000	\$11,000,000	\$31,000,000	\$22,000,000
New State Expenditures at State Average Rates	-\$10,000,000	\$2,000,000	-\$8,000,000	-\$5,333,333
Net New State Revenues	\$34,000,000	\$9,000,000	\$39,000,000	\$27,333,333

Recommendation

Because of the significant economic impact when the full investment is taken into account, we recommend continuing the enterprise zone property tax abatement program. It is likely that this benefit played a role in the companies' decisions to locate in these towns. Going forward, we advocate the use of the new methodology that takes the full investment into account to estimate the range of activity that results from the abatement program.

Urban Jobs Program

The Urban Jobs Program provides benefits to eligible companies with suitably induced projects located in a Targeted Investment Community but outside of the Enterprise Zone, which are not impacted by any of the newly designated Enterprise Zone level benefit areas described above.

Benefits of the Urban Jobs Program

The benefits associated with the Urban Jobs Program in a Targeted Investment Community outside of the Enterprise Zone are provided at the discretion of the DECD commissioner and are as follows:

- A five-year, 80% property tax abatement (captured above).
- A ten-year, 25% corporation business tax credit to qualified manufacturing businesses.
- Property tax benefits for real estate and/or equipment are provided on a sliding scale for qualifying service facilities located outside of an Enterprise Zone in a Targeted Investment Community. The minimum investment is \$20 million to qualify for a five-year, forty percent property tax abatement. This benefit increases to an eighty percent, five-year tax abatement for projects with an investment greater than \$90 million. The equipment qualifies only if installed in a facility that has been newly constructed or substantially renovated or expanded.

Investment	Percent of Assessed Value Abated
\$20 million to \$39 million	40%
\$39 million to \$59 million	50%
\$59 million to \$79 million	60%
\$79 million to \$90 million	70%
More than \$90 million	80%

- Corporate business tax credits are provided for qualifying service facilities located outside of an Enterprise Zone in a Targeted Investment Community on a sliding scale based on the number of full-time jobs created. The minimum tax credit of 15% is allowed for service companies creating 300 or more jobs but less than 599 new jobs. The benefit increases to 50% for such companies creating 2000 or more new jobs at the eligible facility. The eligibility period for this tax credit is ten years.

New Employees Hired	Credit
300-599	15%
600-899	20%
900-1,199	25%
1,200-1,499	30%
1,500-1,999	40%
2,000 or more	50%

A business may not initiate a project that could qualify for incentives without first requesting and obtaining the approval of the DECD commissioner. Approval depends on the ability of the business to demonstrate 1) that the incentives are an inducement and 2) that they have an economic need that the

incentives will alleviate or that the project will represent a net economic benefit to the state and/or municipality (cf. CGS §§32-9r, 12-81(50)(b) & 60 and 12-217e(b)).

Recommendation

There have been no claims for the Urban Jobs corporate tax credit. We recommend this tax credit be eliminated because the job creation thresholds are unrealistically high and there are similar tax credits offered such as the Job Creation and the Apprenticeship in Manufacturing, Plastics and Construction tax credit programs.

Additional Enterprise Zones

The Connecticut General assembly approved legislation designating five new types of zones. In order to apply for one of these new zone designations, a municipality must meet certain specific qualifying criteria described below. These designations are:

1. Contiguous Municipality Zone (CGS §32-70(b)) - A municipality which is contiguous to an Enterprise Zone located in another municipality may, with the approval of the commissioner and the legislative body of the municipality containing the Enterprise Zone, designate one or more census tracts, or portions of such census tracts, as eligible for provision of Enterprise Zone level benefits. These designated census tracts must be immediately adjacent to an existing Enterprise Zone in the neighboring municipality. An eligible project taking place in such a designated area is eligible for the same benefits and subject to the same conditions as those projects qualifying for benefits in an Enterprise Zone in a Targeted Investment Community. Per statute, a municipality that designates such a zone under these conditions is not considered a Targeted Investment Community and no other incentive programs or benefits available within a Targeted Investment Community apply. The Town of Plainville has applied for and received such a designation.
2. Defense Plant Zone (CGS §32-56)- Any municipality with a former defense manufacturing plant which was vacant on the effective date of Substitute Senate Bill No. 481 may apply to the commissioner to provide Enterprise Zone level benefits to eligible business facilities locating in that building. Approval of the zone designation will be subject to the commissioner determining that the economy of the municipality was severely impacted by a prime defense contract cutback. Such a determination would be made after a public hearing where information was presented supporting such findings. Such a determination would be effective for two years and may be renewed for another two years subject to another public hearing. An eligible project taking place in such a designated facility will be eligible for the same benefits and subject to the same conditions as those qualifying for benefits in an Enterprise Zone in a Targeted Investment Community. A municipality that designates a Defense Plant Zone will not be considered a Targeted Investment Community and no other incentive programs or benefits available within a Targeted Investment Community apply.

The Town of Stratford has applied for and received such a designation. The Town of Cheshire has applied for this designation.

3. Manufacturing Plant Zone (CGS §32-75c(a)) - Any municipality with a population less than 20,000 that is contiguous to a Targeted Investment Community may request the commissioner approve the designation as manufacturing plants those properties located in a census tract or contiguous to such census tract provided that the census tract 1) is contiguous to a census tract in a Targeted Investment Community and has a low or moderate income housing project, 2) contains a facility of at least 180,000 square feet formerly used for printing or allied industries, 3) includes at least 100 acres of land that is vacant and zoned industrial or commercial and 4) has a boundary that consists of a portion of a railroad track and a stream. An eligible project taking place in a designated Manufacturing Plant Zone is eligible for the same benefits, and subject to the same conditions, as those qualifying for benefits in an Enterprise Zone in a Targeted Investment Community. A municipality that designates a Manufacturing Plant Zone will not be considered a Targeted Investment Community and no other incentives programs or benefits available in a Targeted Investment Community apply. The Town of Bloomfield has applied for and received such a designation.

4. Bradley Airport Development Zone (PA 10-98) - This zone establishes tax incentives for manufacturers and certain related businesses that build or substantially renovate facilities in the area and create new jobs. Enterprise Zone level benefits will be available to businesses that manufacture, process or assemble raw materials or parts; perform manufacturing-related research and development; or significantly service, overhaul or rebuild industrial machinery and equipment. Warehousing and motor freight businesses can qualify for tax incentives if they can demonstrate their business is dependent on goods shipped by air, while service companies – including information technology companies – can also qualify for credits if they can demonstrate their business is related to the airport. The zone, located around Bradley International Airport, will include specified census blocks within the towns of East Granby, Suffield, Windsor and Windsor Locks.

5. Bioscience Enterprise Corridor Zone (PA 10-104) – This zone is for eligible businesses that have not had more than three hundred employees at any time during the preceding twelve months and are engaged in bioscience, biotechnology, pharmaceutical or photonics research, development or production in the state. The definition of bioscience has been included for businesses engaged in the study of genes, cells, tissues and chemical and physical structures of living organisms. Enterprise zone level benefits will include certain businesses and commercial properties in certain census blocks, groups and tracts in Farmington, Hartford, Bristol and New Britain.

Enterprise Corridor Zones

Enterprise Corridor Zones are located along Route 8 and Interstate 395. The benefits available in an Enterprise Corridor Zone are the same as in an enterprise zone, and subject to the similar qualifying terms and conditions. To obtain the enhanced 50% level of corporate credits, the hiring level for new full time positions remains at 30% of those positions filled by residents of the community in which the project takes place who are JTPA eligible. The communities located in enterprise corridor zones are Ansonia, Beacon Falls, Derby, Griswold, Killingly, Lisbon, Naugatuck, Plainfield, Putnam, Seymour, Sprague, Sterling, Thompson, Torrington and Winchester. Municipalities in the Enterprise Corridor Zones are not classified as Targeted Investment Communities and are therefore not eligible to extend Urban Jobs Program benefits. Benefits for eligible projects in an Enterprise Corridor Zone are identical to those in an Enterprise Zone.

Eligible Applicants

Eligible businesses are defined by their NAICS code.

- For Urban Jobs Program benefits, in a targeted investment community but outside of an enterprise zone, ONLY manufacturers, research associated with manufacturing (NAICS sectors 31-33 inclusive) and distribution warehousing (new construction/expansion only) may qualify under the standard threshold guidelines. Certain service sector companies defined by NAICS code may be eligible for benefits based on a graduated scale subject to meeting certain thresholds of capital investment and job creation. An eligible applicant must occupy a facility that meets the criteria as defined below under Eligible Projects.
- In an Enterprise Zone, in addition to manufacturers and distribution warehousing (new construction/expansion only) certain service sector firms (defined by NAICS code) may qualify.

Applicant Conditions

If the business occupant leases the qualifying facility (defined below), the lease term must satisfy certain minimum requirements as follows:

- In a Targeted Investment Community (Urban Jobs Program), the lease must be for an initial minimum term of five years with the option to renew at the request of the lessee for an aggregate term of not less than ten years or the lease must have the option to purchase the facility after the first five years.
- In an Enterprise Zone, the term of the lease for a business occupant is generally the same as for a facility located in a targeted investment community (cf. urban jobs program). However, for those companies with an average of ten or fewer employees, the lease may be for an initial minimum term of three years with an option to renew at the request of the lessee for an aggregate term of not less than six years or the lease must have the option to purchase the facility after the first three years.

Eligible Projects

The project eligibility for both targeted investment communities (urban jobs) and enterprise zones is defined in CGS §32-9p. Benefits accrue to projects whose central activity revolves around capital improvements to land and/or building. A real estate transaction has to take place in order to qualify the facility that will be occupied by the eligible business. The transaction must meet one of the following criteria:

- Substantial renovation of an existing facility involving capital expenditures of at least 50% of the assessed value of the facility prior to its renovation. All renovation activities must be permitted by the town in order for their value to be recognized. The only costs that matter in meeting the 50% test are those costs that were incurred for work that required the use of a building permit.
- Construction of a new facility. The expanded portion of an existing facility is considered new construction.
- Acquisition of a facility by new owners after having been idle for at least one year prior to acquisition. Within an enterprise zone, the idleness requirement does not apply to companies with an average of five or fewer employees in the six months preceding acquisition of the facility, and is at least six months for businesses that have an average of between six and nineteen employees in the preceding six months. A one year idleness is required if there are more than nineteen employees involved.

Idleness is determined if the facility was unused, unoccupied or substantially underutilized for the appropriate period prior to being acquired for productive use. A community may request that the commissioner waive the idleness requirement for a facility for a specific client. The enterprise zone coordinator must sign the idleness waiver.

Section 5.2: Other (Special Incentive) Credits Administered by DECD

Historic Homes Rehabilitation Tax Credit

A tax credit is available to owners rehabilitating a historic home in a targeted area or to taxpayers making contributions to qualified rehabilitation expenditures. The owner is not eligible for a tax credit voucher unless the owner incurs qualified rehabilitation expenditures exceeding \$25,000. The owner must verify that he or she will occupy the historic home as his or her primary residence for at least five years or that the owner will convey the home to a new owner who will occupy the home as his or her primary residence for at least five years or record an encumbrance in favor of the funding source that will require the owner or owner's successors to occupy the home for five years. The credit allowed cannot exceed \$30,000 per dwelling unit for a historic home. The tax credit is equal to the smaller of 30% of the projected qualified rehabilitation expenditures or 30% of the actual rehabilitation expenditures. Please refer to CGS §10-416 and Conn. Agencies Regs. §10-320j-1 through 10-320j-9.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment based on the 30% tax credit and estimate the impact if the credit were to induce none, 20%, half and all of the rehabilitation of historic homes qualifying and whose owners claim the credit. The amount of the credit reduces the firm's cost of capital. We reduce state government spending each year by the amount of the credit claimed.

Table 5.26 reports the microsimulation results for the Historic Homes Rehabilitation tax credit program. The annual average claim from 2003 through 2010 was \$2,118,394 with the largest claim of \$8,222,582 occurring in 2007. This credit did not intend to create jobs or increase tax revenue and the results reported in Table 5.26 do not realistically represent the benefits of the program which are to stimulate and support the preservation of historically important homes. We may surmise from the claims that the average annual rehabilitation expenditure over the 2003-2010 period amounted to approximately \$7.06 million. These expenditures reflect investment in our cultural, architectural and historic heritage for which it is difficult to assess benefits. Rehabilitation and preservation enhances property values and encourages similar behavior in the neighborhood. It is possible that the grand lists increased by the amount of the investment and an additional but unmeasured benefit is new revenue to municipalities. We recommend this program be continued.

The historic homes rehabilitation tax credit was modified in 2013 by (1) making the credit available statewide, not just in statutorily designated areas; (2) reducing, from more than \$25,000 to more than \$15,000, the minimum amount of money that must be spent rehabilitating a historic home; and (3) increasing, from \$30,000 to \$50,000 per unit, the maximum amount of credit businesses can claim when contributing funds to nonprofit corporations rehabilitating historic homes (effective January 1, 2015).

Table 5.26 Net Economic and Fiscal Impacts of the Historic Homes Rehabilitation Tax Credit

Historic Homes Rehabilitation	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$541,772	\$265,000	\$1,129,550	\$3,255,787	\$8,222,582	\$1,479,112	\$1,151,693	\$901,659	\$2,118,394	
0% Scenario										
<i>Changes in:</i>										
Total Employment	-13	-5	-31	-90	-210	-31	-18	-12	-51	
Total Non-Farm Employment	-4	-1	-12	-38	-84	-10	-3	0	-19	
GDP	-\$818,081	-\$266,932	-\$2,228,000	-\$6,610,614	-\$15,657,887	-\$1,388,903	-\$402,837	\$102,981	-\$3,408,784	
State Revenues	-\$42,903	-\$26,739	-\$154,095	-\$448,091	-\$1,018,955	-\$216,276	-\$161,076	-\$129,124	-\$274,657	-\$0.13
State Expenditures	\$66,378	\$14,205	\$137,738	\$410,971	\$1,008,037	-\$288,053	-\$323,100	-\$308,356	\$89,728	
Net State Revenue	-\$109,281	-\$40,945	-\$291,833	-\$859,061	-\$2,026,992	\$71,777	\$162,024	\$179,232	-\$364,385	
20% Scenario										
<i>Changes in:</i>										
Total Employment	-9	-4	-25	-72	-166	-31	-23	-20	-44	
Total Non-Farm Employment	-1	0	-7	-21	-44	-11	-8	-8	-12	
GDP	-\$488,968	-\$106,773	-\$1,510,000	-\$4,619,935	-\$10,557,660	-\$1,173,875	-\$704,414	-\$447,741	-\$2,451,171	
State Revenues	-\$24,285	-\$25,068	-\$129,130	-\$362,361	-\$773,314	-\$226,665	-\$198,977	-\$183,086	-\$240,361	-\$0.11
State Expenditures	\$48,569	\$8,356	\$103,304	\$318,171	\$782,412	-\$207,776	-\$227,402	-\$211,994	\$76,705	
Net State Revenue	-\$72,854	-\$33,424	-\$232,433	-\$680,532	-\$1,555,725	-\$18,889	\$28,425	\$28,908	-\$317,066	
50% Scenario										
<i>Changes in:</i>										
Total Employment	-3	-1	-14	-44	-100	-31	-31	-31	-32	
Total Non-Farm Employment	4	2	2	4	16	-10	-15	-19	-2	
GDP	\$28,210	\$87,359	-\$460,000	-\$1,632,377	-\$3,011,945	-\$822,810	-\$1,045,615	-\$1,231,289	-\$1,011,058	
State Revenues	\$8,095	-\$8,356	-\$68,869	-\$203,276	-\$382,108	-\$198,332	-\$208,452	-\$231,267	-\$161,571	-\$0.08
State Expenditures	\$24,285	\$8,356	\$68,869	\$194,438	\$454,890	-\$56,666	-\$56,850	-\$48,181	\$73,643	
Net State Revenue	-\$16,190	-\$16,712	-\$137,738	-\$397,714	-\$836,998	-\$141,665	-\$151,601	-\$183,086	-\$235,213	
100% Scenario										
<i>Changes in:</i>										
Total Employment	6	2	2	1	10	-31	-43	-51	-13	
Total Non-Farm Employment	13	5	17	45	116	-11	-27	-37	15	
GDP	\$921,517	\$427,090	\$1,270,000	\$3,387,952	\$9,606,520	-\$252,328	-\$1,606,945	-\$2,630,480	\$1,390,416	
State Revenues	\$48,569	\$16,712	\$34,435	\$61,867	\$282,032	-\$141,665	-\$227,402	-\$289,083	-\$26,817	-\$0.01
State Expenditures	-\$24,285	\$0	-\$17,217	-\$35,352	-\$118,272	\$160,554	\$189,501	\$192,722	\$43,457	
Net State Revenue	\$72,854	\$16,712	\$51,652	\$97,219	\$400,304	-\$302,220	-\$416,903	-\$481,806	-\$70,273	

Table 5.27: Net Economic and Fiscal Impacts of the Historic Preservation (Historic Investment) Tax Credit

Historic Preservation	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$1,930,571	\$1,930,571	
0% Scenario			
Changes in:			
Total Employment	-47	-47	
Total Non-Farm Employment	-20	-20	
GDP	-\$4,029,672	-\$4,029,672	
State Revenues	-\$269,811	-\$269,811	-\$0.14
State Expenditures	\$298,719	\$298,719	
Net State Revenue	-\$568,531	-\$568,531	
20% Scenario			
Changes in:			
Total Employment	-23	-23	
Total Non-Farm Employment	3	3	
GDP	-\$2,322,658	-\$2,322,658	
State Revenues	-\$125,269	-\$125,269	-\$0.06
State Expenditures	\$147,433	\$147,433	
Net State Revenue	-\$272,702	-\$272,702	
50% Scenario			
Changes in:			
Total Employment	12	12	
Total Non-Farm Employment	37	37	
GDP	\$167,903	\$167,903	
State Revenues	\$67,453	\$67,453	\$0.03
State Expenditures	-\$77,089	-\$77,089	
Net State Revenue	\$144,542	\$144,542	
100% Scenario			
Changes in:			
Total Employment	73	73	
Total Non-Farm Employment	95	95	
GDP	\$4,309,511	\$4,309,511	
State Revenues	\$395,081	\$395,081	\$0.20
State Expenditures	-\$462,533	-\$462,533	
Net State Revenue	\$857,614	\$857,614	

Table 5.28: Net Economic and Fiscal Impacts of the Historic Structures Rehabilitation Tax Credit

Historic Structures Rehabilitation	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$4,302,896	\$9,320,173	\$6,811,535	
0% Scenario				
Changes in:				
Total Employment	-106	-174	-140	
Total Non-Farm Employment	-43	-44	-44	
GDP	-\$8,662,092	-\$13,387,467	-\$11,024,779	
State Revenues	-\$559,029	-\$568,531	-\$563,780	-\$0.08
State Expenditures	\$615,880	\$973,247	\$794,564	
Net State Revenue	-\$1,174,909	-\$1,541,778	-\$1,358,344	
20% Scenario				
Changes in:				
Total Employment	-78	-118	-98	
Total Non-Farm Employment	-18	7	-5	
GDP	-\$5,273,200	-\$6,319,869	-\$5,796,535	
State Revenues	-\$380,898	-\$206,213	-\$293,555	-\$0.04
State Expenditures	\$457,646	\$668,746	\$563,196	
Net State Revenue	-\$838,544	-\$874,959	-\$856,752	
50% Scenario				
Changes in:				
Total Employment	-37	-32	-35	
Total Non-Farm Employment	20	85	52	
GDP	-\$297,175	\$4,231,156	\$1,966,991	
State Revenues	-\$123,176	\$346,900	\$111,862	\$0.02
State Expenditures	\$198,977	\$192,722	\$195,849	
Net State Revenue	-\$322,153	\$154,178	-\$83,987	
100% Scenario				
Changes in:				
Total Employment	33	109	71	
Total Non-Farm Employment	84	213	148	
GDP	\$8,089,755	\$21,928,133	\$15,008,944	
State Revenues	\$303,202	\$1,223,786	\$763,494	\$0.11
State Expenditures	-\$227,402	-\$578,167	-\$402,784	
Net State Revenue	\$530,604	\$1,801,953	\$1,166,278	

Historic Preservation (formally referred to as Historic Investment) Tax Credit

For income years beginning on or after January 1, 2008, a tax credit is available to an owner rehabilitating a certified historic structure for mixed residential and non-residential use or a taxpayer named by the owner as contributing to the rehabilitation. The tax credit is equal to the smaller of 25% of the projected qualified rehabilitation expenditures or 25% of the actual qualified rehabilitation expenditures. If the project creates qualified affordable housing units then the tax credit is equal to the smaller of 30% of the projected qualified rehabilitation expenditures or 30% of the actual qualified rehabilitation expenditures.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment based on the 25% tax credit and estimate the impact if the credit were to induce none, 20%, half and all of the rehabilitation of historic structures for mixed residential and non-residential use qualifying and whose owners claim the credit. The amount of the credit reduces the firm's cost of capital. We reduce state government spending each year by the amount of the credit claimed.

Table 5.27 reports the microsimulation results for the Historic Preservation tax credit program. The first tax credits under this program were claimed in 2010, and amounted to \$1,930,571. This suggests associated rehabilitation expenditures of \$7.7 million on historic structures. This credit did not intend to create jobs or increase tax revenue and the results reported in Table 5.27 do not realistically represent the benefits of the program which are to stimulate and support the preservation of historically important buildings. We recommend this program be continued.

Historic Structures Rehabilitation Tax Credit

A tax credit is available to an owner rehabilitating a certified historic structure for residential use or to a taxpayer named by the owner as contributing to the rehabilitation. The tax credit is equal to the lesser of the tax credit reserved upon certification of the rehabilitation plan or 25% of the actual qualified rehabilitation expenditures not exceeding \$2.7 million.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment based on the 25% tax credit and estimate the impact if the credit were to induce none, 20%, half and all of the rehabilitation of historic structures for residential use qualifying and whose owners claim the credit. The amount of the credit reduces the firm's cost of capital. We reduce state government spending each year by the amount of the credit claimed.

Claims averaged \$6,811,535 in 2009 and 2010. This suggests an average annual rehabilitation expenditure of \$27.2 million on historic structures during this time period.

This credit did not intend to create jobs or increase tax revenue and the results reported in Table 5.28 do not realistically represent the benefits of the program which are to stimulate and support the preservation of historically important homes. We recommend this program be continued.

Section 6: Other Available Tax Credits (not administered by DECD)

We present results for the available tax credit programs not administered by DECD as a range of induced economic activity (such as increased spending, investment or hiring) as applicable that occurred because of the credits claimed each year. ‘As applicable’ means that the tax credit for our modeling purposes had to induce behavior beyond business as usual. If the credit could be claimed without additional investment or hiring for example, we do not analyze a range of induced activity.

As explained in Section 3, we have changed the methodology to account for the full investment related to the tax credit, except for cases where we have information from the companies on the activity induced by the credits. We do not have that information for most of the credits assessed in this section; therefore we apply the new methodology to obtain a range of induced activity and model the estimated impact.

Tables 6.1 through 6.17 below present the details of each tax credit impact. For tax credit programs in which there is induced activity, we examine results in which 0%, 20%, 50% and 100% of the targeted activity occurs as it relates to the availability of the credit. The tax credit amount reduces the recipient’s cost of capital that in turn presumably allows the firm to spend these funds in the most productive manner. Thus, all of the money claimed flows into the economy, albeit via different paths.

Most non-DECD-administered tax credit programs have little to no effect on economic development in terms of job creation or state revenue generation as a consequence of their low up take or targeted activity. Many of these programs’ average claim amounts over their life (or the study period) is less than a few hundred thousand dollars or in a few cases, less than \$5 million. The program with the largest average annual claim or tax cost (\$47 million) is the fixed capital investment tax credit program from income year 1996 through 2010 followed by the electronic data processing tax credit program (\$21.2 million) from income year 1995 through 2010. The research and development (nonincremental) and the research and experimental (incremental) tax credit programs average approximately \$14 million per year from income year 1995 through 2010.

Though DECD is not required to recommend disposition on tax credit programs not administered by DECD, the results can indicate that some programs could safely be terminated with insignificant effect. Programs that do not intend to create jobs or tax revenue should be evaluated with respect to their goals and the state’s economic development strategy. For example, if adding to the inventory of open space is a

priority, then the relevant tax credit program should be expanded to stimulate additional donations. If developing the skills of the workforce or increasing the participation rate of certain populations is important, then increasing the incentives for child care provision and job training among other programs should be addressed within existing or new incentives.

Tax Credit Modeling Assumptions, Strategies and Results

Following are the assumptions we make and the modeling strategies we use for each tax credit program not administered by DECD. Tax credit, abatement and exemption programs that DECD administers appear in Section 5 of this report. The Connecticut economic model referred to below is from Regional Economic Models, Inc. of Amherst, MA and is called REMI Policy Insight. We describe the REMI model in Appendix B.

Section 6.1: Credits Targeted towards Job Creation and Industry Development

Angel Investor Tax Credit

The Angel Investor tax credit provides a credit for a cash investment of not less than \$100,000 (and not less than \$25,000 effective October 27, 2011) in the qualified securities of a Connecticut business by an angel investor. The credit is applicable to taxable years beginning on or after January 1, 2010 and is applicable to the investors' personal income tax. The qualified Connecticut businesses are early-stage technology ventures in the fields of advanced materials, bioscience, clean energy, information technology and photonics. They must have been in business for less than seven years and have less than 25 paid employees, 75% of whom must be Connecticut residents. Gross revenue must be less than \$1 million and management and their families must have majority ownership of the venture.

An *angel investor* is an accredited investor, as defined by the Securities and Exchange Commission, or network of accredited investors who review new or proposed businesses for potential investment who may seek active involvement, such as consulting and mentoring, in a Connecticut business. The angel investor may apply to Connecticut Innovations, Inc. (CI) to reserve a tax credit equal to 25 percent of the cash investment. The angel investor must choose from a list of Connecticut businesses that Connecticut Innovations Inc. has determined are qualified to receive cash investments eligible for the angel investor tax credit. The angel investor must not have a majority ownership of the business it seeks to invest in. Tax credits cannot be reserved for any investments made on or after July 1, 2016.

Any tax credit that is claimed by the angel investor but not applied may be carried forward for the five immediately succeeding taxable years. No carryback is allowed. The most current statistics for this program are shown in Table 6.1 below.

**Table 6.1: Current Status of the Angel Investor Tax Credit Program
(Inception to December 31st, 2013)**

Current Qualified Connecticut Businesses	62
Number of Angels with Reservation Numbers	245
Number of Investments made by Angels	277
Approved Investments in Qualified Connecticut Businesses	327
Number of Companies invested in	61
Investments in Qualified Connecticut Businesses	\$29,891,023
Tax Credits Reserved	\$8,784,673
Tax Credits Issued	\$7,472,756

We obtained the claims data for this credit (claims against the personal income tax) for 2010 and 2011 from DRS, and investment data for these two years from CI. A summary of the investments by industry are in Table 6.2.

Table 6.2: Angel Investments by Company Category and Year

Company by Category	2010	2011
Bioscience	\$1,145,005	\$1,955,000
Clean Technology	\$450,000	\$0
Information Technology	\$300,000	\$5,128,083
Total	\$1,895,005	\$7,083,083

We model the tax credits by reducing state government spending by the amount of the claimed credits, and reducing personal income taxes by the amount of the credits. We reduce the cost of capital of the recipient industries by the amount of the investments. Because we cannot say for certain whether the investments would have occurred in the absence of the tax credits, we model a range: 0%, 20%, 50% and 100% of the investment is modeled as attributable to the tax credit. The 0% scenario models the conservative case that all of these investments would have occurred in the absence of the credit (and is modeled as an equivalent decrease in government spending and personal taxes), and the 100% scenario assumes that none of the investments would have occurred without it. The 20% and 50% scenarios are “in-between” cases. The results are in Table 6.3 below.

Table 6.3: Economic Impact of the Angel Investor Tax Credit

Angel Investor Tax Credit	2010	2011	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$443,417	\$1,293,567	\$868,492	
0% Scenario				
Changes in:				
Total Employment	-8	-24	-16	
Total Non-Farm Employment	-2	-5	-3	
GDP	-\$595,100	-\$1,907,300	-\$1,251,200	
State Revenues	-\$45,800	-\$120,200	-\$83,000	-\$0.10
State Expenditures	\$42,000	\$152,600	\$97,300	
Net State Revenue	-\$87,800	-\$272,800	-\$180,300	
20% Scenario				
Changes in:				
Total Employment	-4	0	-2	
Total Non-Farm Employment	2	17	9	
GDP	-\$275,000	\$122,000	-\$76,500	
State Revenues	\$29,000	\$145,000	\$87,000	\$0.10
State Expenditures	\$72,000	\$111,000	\$91,500	
Net State Revenue	-\$43,000	\$34,000	-\$4,500	
50% Scenario				
Changes in:				
Total Employment	1	35	18	
Total Non-Farm Employment	7	49	28	
GDP	\$260,000	\$3,160,000	\$1,710,000	
State Revenues	\$90,000	\$490,000	\$290,000	\$0.33
State Expenditures	\$50,000	-\$10,000	\$20,000	
Net State Revenue	\$40,000	\$500,000	\$270,000	
100% Scenario				
Changes in:				
Total Employment	11	95	53	
Total Non-Farm Employment	16	104	60	
GDP	\$1,129,000	\$8,148,000	\$4,638,500	
State Revenues	\$252,000	\$1,123,000	\$687,500	\$0.79
State Expenditures	\$93,000	-\$132,000	-\$19,500	
Net State Revenue	\$159,000	\$1,255,000	\$707,000	

The increase in claims in 2011 reflects the expansion of the credit in 2011, and the results are more positive in 2011. The credit was expanded to allow a minimum investment of \$25,000, down from the original \$100,000 minimum. In the first six months after the change, 84 investors pledging \$8.6 million in 23 companies applied for the program, according to CI, compared to 13 angel investors pledging \$2.4 million in nine companies in the six months prior²⁶.

²⁶ “Angel Investing Jumps Sharply After Tax Credit Expansion”, *The Hartford Courant*, 06/08/2012.
http://articles.courant.com/2012-06-08/business/hc-angel-investor-credits-20120608_1_angel-investors-tax-credit-start-up-firms

As the number of investments has continued to increase since 2011 we can expect the economic impact to become more positive in the following years.

The Angel Investor tax credit was created to encourage investment in certain targeted industries and almost all qualified companies have so far received funds. Our results suggest that the program is a success and is a net benefit to the state.

Apprenticeship in Manufacturing, Plastics and Construction Tax Credit

A tax credit may be applied against the tax imposed under Chapter 208 of the Connecticut General Statutes by corporations that employ apprentices who receive training in the manufacturing, plastics, plastics-related, or construction trades. Wages of pre-apprentices are not eligible for this tax credit. We estimate the impact of this tax credit by using the number of eligible apprentices, the cost reduction to the claiming company and the cost of the tax to the state. We calculate the number of apprentices eligible for the credit by dividing the claim amount by the maximum credit of \$4,800 per apprentice available to firms in the plastics and manufacturing industries and the maximum credit of \$4,000 per apprentice available to firms in construction industries. Please refer to CGS §§12-217g and 31-22n and Conn. Agencies Regs. §12-217g-1 through 12-217g-10.

We assume that apprentices, once completing their apprenticeship, become employees of the claiming industry. Because the apprenticeships eligible for the tax credit are multi-year programs, we assume that the maximum number of estimated eligible apprentices over the study period is the maximum number of workers thus trained and employed. We use this method as we do not have data from the individual companies indicating the number of eligible apprentices, and to treat each apprentice in each year as a separate individual would result in double counting. In reality this method likely undercounts the number of eligible workers, so our estimates of the employment impact may be conservative. We assume that 0%, 20%, 50% and 100% of these apprenticeships (and resulting jobs) are due to the tax credit, and model the range accordingly. The 0% scenario assumes all apprenticeships and jobs would have occurred irrespective of the tax credit, and thus the only inputs are the capital cost reduction to the companies and the reduction in state revenue (modeled as reduced government expenditure) to the state. The 100% scenario assumes that all apprenticeships and resulting employment would not have occurred without the credit. We reduce claiming companies' cost of capital and state government spending each year by the amount of the credit claimed for apprentices in the manufacturing, plastics and construction industries.

Table 6.4 shows the microsimulation results for the Apprenticeship in Manufacturing, Plastics and Construction tax credit program. For each scenario, the annual average net state revenue is positive demonstrating the beneficial impact of credits tied to job creation. The annual average claim over the

1995-2010 period was \$464,335 suggesting approximately 90 to 100 apprentices were hired on average each year.

This tax credit was modified during July 2013 legislative session by increasing the credit from \$4 to \$6 per hour and raising the cap from \$4,800 or 50% of the actual apprentice wages, whichever is less, to \$7,500 or 50% of such wages, whichever is less, effective January 1, 2015.

Table 6.4: Net Economic and Fiscal Impacts of the Apprenticeship in Manufacturing, Plastics and Construction Tax Credit

	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Apprenticeship Training																	
Total Claims	\$110,053	\$144,036	\$344,055	\$960,165	\$506,028	\$435,903	\$274,150	\$1,198,990	\$86,370	\$1,187,501	\$295,076	\$106,768	\$21,070	\$668,863	\$626,001	\$464,335	
0% Scenario																	
Changes in:																	
Total Employment	-3	-3	-8	-25	-8	-4	0	-14	10	-8	8	8	6	-2	0	-3	
Total Non-Farm Employment	-1	0	-1	-6	1	3	4	5	10	9	11	8	5	5	7	4	
GDP	-\$122,014	-\$111,964	-\$343,317	-\$1,135,847	-\$168,559	\$160,742	\$466,648	-\$272,694	\$1,362,807	\$397,000	\$1,551,271	\$1,532,393	\$1,372,447	\$738,534	\$1,093,608	\$434,737	
State Revenues	-\$47,370	-\$42,916	-\$38,020	-\$90,725	-\$32,246	-\$24,197	\$0	\$78,521	\$55,986	\$141,182	\$92,800	\$76,422	\$61,388	\$115,596	\$121,415	\$31,189	\$0.07
State Expenditures	-\$28,834	-\$28,142	-\$12,195	-\$36,722	-\$32,246	-\$60,493	-\$75,081	\$32,380	-\$87,739	\$52,513	-\$42,423	-\$26,384	-\$9,444	\$70,116	\$75,162	-\$9,073	
Net State Revenue	-\$18,536	-\$14,774	-\$25,825	-\$127,447	\$0	\$36,296	\$75,081	\$46,141	\$143,724	\$88,669	\$135,223	\$102,805	\$70,833	\$45,480	\$46,253	\$40,262	
20% Inducement Scenario																	
Changes in:																	
Total Employment	7	13	21	68	90	99	102	205	229	211	224	222	218	208	210	142	
Total Non-Farm Employment	8	14	25	78	89	95	95	197	202	200	200	195	189	188	188	131	
GDP	\$558,232	\$1,471,061	\$2,099,901	\$6,875,306	\$8,589,685	\$9,600,578	\$10,205,105	\$24,608,261	\$27,634,693	\$27,940,000	\$30,327,306	\$31,556,730	\$33,011,128	\$33,052,429	\$34,677,568	\$18,813,866	
State Revenues	\$27,461	\$70,355	\$129,124	\$489,625	\$622,930	\$703,226	\$743,066	\$2,201,814	\$2,314,630	\$2,505,114	\$2,571,881	\$2,647,462	\$2,767,199	\$2,842,522	\$2,948,650	\$1,572,337	\$3.39
State Expenditures	-\$34,326	-\$42,213	-\$43,041	-\$158,408	-\$146,572	-\$90,739	-\$15,481	-\$339,986	-\$259,038	\$86,086	\$185,600	\$354,815	\$519,440	\$710,631	\$819,069	\$103,056	
Net State Revenue	\$61,787	\$112,567	\$172,165	\$648,033	\$769,502	\$793,964	\$758,547	\$2,541,800	\$2,573,668	\$2,419,028	\$2,386,282	\$2,292,648	\$2,247,759	\$2,131,892	\$2,129,581	\$1,469,281	
50% Inducement Scenario																	
Changes in:																	
Total Employment	23	50	86	216	248	258	260	530	556	536	547	542	536	524	524	362	
Total Non-Farm Employment	23	46	83	210	230	238	236	484	490	485	482	473	465	461	460	324	
GDP	\$2,153,181	\$5,099,677	\$8,166,284	\$19,973,518	\$22,755,428	\$24,647,045	\$25,625,154	\$61,826,257	\$66,946,427	\$69,240,000	\$73,426,165	\$76,609,088	\$80,591,474	\$81,723,040	\$85,160,406	\$46,929,543	
State Revenues	\$130,438	\$281,419	\$538,015	\$1,425,673	\$1,641,605	\$1,784,530	\$1,904,107	\$5,334,543	\$5,648,699	\$6,026,049	\$6,248,523	\$6,495,835	\$6,809,387	\$6,983,130	\$7,207,811	\$3,897,318	\$8.39
State Expenditures	-\$68,652	-\$112,567	-\$172,165	-\$460,824	-\$337,115	-\$158,793	\$54,182	-\$882,345	-\$484,652	\$189,390	\$565,637	\$1,009,857	\$1,426,099	\$1,819,214	\$2,110,308	\$299,838	
Net State Revenue	\$199,090	\$393,986	\$710,180	\$1,886,497	\$1,978,720	\$1,943,323	\$1,849,925	\$6,216,887	\$6,133,351	\$5,836,658	\$5,682,885	\$5,485,978	\$5,383,288	\$5,163,916	\$5,097,503	\$3,597,479	
100% Inducement Scenario																	
Changes in:																	
Total Employment	46	93	171	464	508	525	523	1,082	1,110	1,087	1,095	1,085	1,074	1,060	1,059	732	
Total Non-Farm Employment	43	84	159	434	464	477	471	970	977	968	960	946	933	925	922	649	
GDP	\$3,772,055	\$9,406,617	\$15,590,935	\$41,736,957	\$46,166,363	\$49,399,495	\$51,079,474	\$125,015,984	\$133,553,123	\$139,140,000	\$146,349,271	\$152,922,266	\$161,095,182	\$164,018,416	\$170,701,392	\$93,996,502	
State Revenues	\$295,202	\$562,837	\$1,032,988	\$2,995,354	\$3,371,153	\$3,674,921	\$3,870,136	\$10,693,370	\$11,339,179	\$12,043,488	\$12,541,236	\$13,100,844	\$13,798,217	\$14,098,911	\$14,560,164	\$7,865,200	\$16.94
State Expenditures	-\$89,247	-\$175,887	-\$322,809	-\$1,008,052	-\$659,573	-\$241,970	\$232,208	-\$1,764,689	-\$843,962	\$370,172	\$1,246,169	\$2,147,083	\$3,003,308	\$3,733,179	\$4,336,250	\$664,145	
Net State Revenue	\$384,450	\$738,724	\$1,355,797	\$4,003,406	\$4,030,727	\$3,916,892	\$3,637,928	\$12,458,060	\$12,183,141	\$11,673,317	\$11,295,066	\$10,953,761	\$10,794,909	\$10,365,732	\$10,223,914	\$7,201,055	

Electronic Data Processing Equipment Property Tax Credit

Firms can claim a credit equal to 100% of the property tax they paid on electronic data processing equipment. The credit effectively reduces the cost of electronic data processing equipment. Ideally we would like to know how much, if any, additional electronic data processing equipment companies purchased due to this incentive. As this tax credit is not based on the full property tax payment and not on incremental changes, we do not know if the property taxes are paid on new or existing equipment.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. Because we do not know how much property taxes are paid on new vs. existing equipment, we make some assumptions to estimate the value of the possible new purchases of electronic data processing equipment. First, we use the state's average equalized mill rate (EMR) for each year to calculate the value of the electronic data processing equipment that property taxes were paid for. We need to use the state average EMR as we do not know where in the state the claiming companies are located. We then calculate the change in the market value of the electronic data processing equipment stock from year to year and count the positive changes as new purchases of such equipment. To avoid overestimating the impact, we then use 0%, 20%, 50% and 100% of these estimated new purchases of EDP equipment as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all EDP purchases would have happened without the credit, and the 100% scenario represents the possibility that all EDP purchases occurred due to the property tax credit. The 20% and 50% scenarios represent the "in-between" possibilities. The economic model calculates the increase in the non-residential stock of capital in the state as a consequence of the firms' capital spending. For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.5 shows the micro-simulation results for the Electronic Data Processing tax credit program. From 1995 through 2010, the annual average claim was over \$28 million suggesting that the stock of electronic data processing equipment eligible for the credit was approximately \$2 billion on average annually.²⁷ The relatively small impact reflects the fact that Connecticut does not produce much EDP equipment and the EDP investment flowed to other regions and/or countries.

²⁷ A typical Connecticut municipal mill rate is approximately 20 so that \$1 of new property tax arises from a \$50 addition to the Grand List. The Grand List reflects 70% of the market value of the addition.

Table 6.5: Net Economic and Fiscal Impacts of the Electronic Data Processing Tax Credit

Electronic Data Processing	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$24,171,960	\$30,686,422	\$38,201,180	\$25,716,805	\$29,169,342	\$26,465,675	\$28,073,654	\$19,896,275	\$16,698,102	\$36,912,689	\$30,511,925	\$29,320,849	\$29,324,522	\$29,324,522	\$29,324,522	\$28,253,230	
0% Scenario																	
<i>Changes in:</i>																	
Total Employment	-422	-389	-299	306	16	163	18	22	-27	-646	-518	-495	-490	-428	-453	-243	
Total Non-Farm Employment	63	202	411	744	515	582	454	302	195	-100	-85	-91	-101	-98	-111	192	
GDP	-\$21,635,484	-\$17,423,898	-\$8,974,579	\$28,220,540	\$15,246,903	\$27,176,749	\$21,830,833	\$26,648,762	\$25,101,270	-\$17,520,000	-\$8,007,887	-\$6,277,528	-\$6,615,391	-\$2,586,520	-\$4,813,220	\$3,358,037	
State Revenues	-\$1,613,315	-\$1,069,390	\$78,909	\$2,728,940	\$1,927,420	\$2,669,233	\$2,105,354	\$1,845,638	\$1,462,311	-\$1,618,424	-\$1,431,769	-\$1,683,095	-\$2,011,650	-\$2,330,868	-\$2,669,203	-\$107,327	\$0.00
State Expenditures	\$20,596	-\$422,128	-\$896,691	-\$2,995,354	-\$1,377,776	-\$1,776,968	-\$835,949	-\$671,877	-\$200,546	\$3,228,240	\$1,820,644	\$1,264,595	\$916,103	\$132,651	\$19,272	-\$118,346	
Net State Revenue	-\$1,633,911	-\$647,263	\$975,600	\$5,724,294	\$3,305,196	\$4,446,201	\$2,941,303	\$2,517,516	\$1,662,857	-\$4,846,665	-\$3,252,413	-\$2,947,690	-\$2,927,753	-\$2,463,519	-\$2,688,475	\$11,019	
20% Scenario																	
<i>Changes in:</i>																	
Total Employment	-422	-329	-221	306	46	158	54	17	-33	-466	-522	-504	-500	-439	-464	-221	
Total Non-Farm Employment	63	257	482	744	543	578	486	298	189	58	-88	-99	-111	-108	-121	211	
GDP	-\$21,635,484	-\$13,043,406	-\$2,933,196	\$28,153,627	\$17,962,572	\$26,834,185	\$25,706,075	\$26,159,794	\$24,586,820	\$5,840,000	-\$8,490,414	-\$7,175,827	-\$7,646,645	-\$3,665,155	-\$5,843,025	\$5,653,995	
State Revenues	-\$1,592,720	\$5,466,555	\$8,349,990	\$2,772,143	\$5,635,689	\$2,691,918	\$7,330,037	\$1,861,828	\$1,462,311	\$26,721,221	-\$1,396,417	-\$1,692,192	-\$2,039,983	-\$2,378,244	-\$2,717,383	\$3,364,984	\$0.12
State Expenditures	\$41,191	-\$654,298	-\$1,176,459	-\$2,937,751	-\$1,458,390	-\$1,701,352	-\$975,274	-\$590,928	-\$125,341	\$2,100,508	\$1,953,216	\$1,401,062	\$1,029,436	\$198,977	\$48,181	-\$189,815	
Net State Revenue	-\$1,633,911	\$6,120,853	\$9,526,449	\$5,709,894	\$7,094,079	\$4,393,270	\$8,305,312	\$2,452,756	\$1,587,652	\$24,620,713	-\$3,349,632	-\$3,093,255	-\$3,069,419	-\$2,577,220	-\$2,765,664	\$3,554,798	
50% Scenario																	
<i>Changes in:</i>																	
Total Employment	-422	-238	-104	306	91	152	107	9	-43	-198	-528	-515	-516	-456	-479	-189	
Total Non-Farm Employment	63	340	588	744	583	573	534	290	181	294	-94	-110	-125	-123	-135	240	
GDP	-\$21,635,484	-\$6,480,840	\$6,158,044	\$28,011,437	\$22,014,792	\$26,307,163	\$31,388,566	\$25,454,552	\$23,742,346	\$40,970,000	-\$9,260,403	-\$8,401,742	-\$9,237,411	-\$5,239,080	-\$7,376,539	\$9,094,360	
State Revenues	-\$1,558,394	\$15,259,920	\$20,767,372	\$2,844,146	\$11,212,748	\$2,737,287	\$15,170,933	\$1,894,208	\$1,487,379	\$69,282,341	-\$1,316,874	-\$1,637,605	-\$2,021,094	-\$2,387,719	-\$2,736,656	\$8,599,866	\$0.30
State Expenditures	\$75,517	-\$992,000	-\$1,614,044	-\$2,844,146	-\$1,590,305	-\$1,587,929	-\$1,184,262	-\$461,410	\$0	\$456,258	\$2,191,844	\$1,637,605	\$1,246,656	\$379,003	\$183,086	-\$273,608	
Net State Revenue	-\$1,633,911	\$16,251,920	\$22,381,416	\$5,688,292	\$12,803,053	\$4,325,216	\$16,355,194	\$2,355,618	\$1,487,379	\$68,826,083	-\$3,508,718	-\$3,275,211	-\$3,267,750	-\$2,766,722	-\$2,919,742	\$8,873,475	
100% Scenario																	
<i>Changes in:</i>																	
Total Employment	-422	-86	91	304	167	142	197	-6	-59	249	-538	-536	-541	-482	-504	-135	
Total Non-Farm Employment	63	478	765	743	652	563	613	277	166	687	-103	-129	-148	-147	-158	288	
GDP	-\$21,635,484	\$4,437,700	\$21,307,334	\$27,793,970	\$28,799,706	\$25,481,496	\$40,955,290	\$24,250,938	\$22,451,368	\$99,550,000	-\$10,523,185	-\$10,420,273	-\$11,771,665	-\$7,759,561	-\$9,771,955	\$14,876,379	
State Revenues	-\$1,503,473	\$31,589,231	\$41,455,834	\$2,937,751	\$20,483,419	\$2,782,657	\$28,221,031	\$1,918,493	\$1,495,735	\$140,131,455	-\$1,246,169	-\$1,601,214	-\$2,039,983	-\$2,416,144	-\$2,765,564	\$17,296,204	\$0.61
State Expenditures	\$130,438	-\$1,582,979	-\$2,345,745	-\$2,700,139	-\$1,802,834	-\$1,406,451	-\$1,548,054	-\$267,132	\$183,833	-\$2,358,768	\$2,536,529	\$1,974,224	\$1,539,431	\$615,880	\$366,172	-\$444,373	
Net State Revenue	-\$1,633,911	\$33,172,210	\$43,801,579	\$5,637,890	\$22,286,253	\$4,189,108	\$29,769,085	\$2,185,625	\$1,311,902	\$142,490,222	-\$3,782,698	-\$3,575,439	-\$3,579,414	-\$3,032,024	-\$3,131,736	\$17,740,577	

Fixed Capital Investment Tax Credit

The credit percentage is 5% of the amount paid or incurred by a corporation for new fixed capital investment. Please refer to CGS §12-217w. The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment (20 times the tax credit) and use 0%, 20%, 50% and 100% of this fixed capital investment as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all fixed capital investment would have happened without the credit, and the 100% scenario represents the possibility that all fixed capital investment occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. We enter the fixed capital investment into the model as investment in producers' durable equipment, and the economic model calculates the increase in the non-residential stock of capital in the state as a consequence of the firms' capital spending. For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.6 reports the micro-simulation results for the Fixed Capital tax credit program. From 1995 through 2010, the annual average claim was \$55.6 million implying that the annual average investment in fixed capital was \$1 billion on average each year from 1995 through 2010. Because additions of machinery and equipment ostensibly make workers more productive, firms making incremental investments under this incentive became slightly more productive than they would have without it. Our results do not reflect the firms' increase in productivity. It is possible that the investment in new machinery and equipment replaced worn out machinery and equipment and there was no net new increase in productivity. We have no way of knowing whether the investment replaced or provided new machinery and equipment.

Table 6.6: Net Economic and Fiscal Impacts of the Fixed Capital Tax Credit

Fixed Capital Investment	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$20,173,723	\$36,978,430	\$50,539,610	\$54,236,942	\$48,915,004	\$57,931,981	\$44,015,180	\$77,486,317	\$46,228,331	\$69,555,015	\$81,242,973	\$79,478,769	\$55,565,190	
0% Scenario														
Changes in:														
Total Employment	-414	-507	-226	17	-222	-677	-407	-1,193	-412	-804	-954	-890	-557	
Total Non-Farm Employment	-21	177	638	889	524	197	217	-70	199	109	110	125	258	
GDP	-\$21,897,265	-\$25,045,443	-\$4,734,411	\$16,615,889	\$10,512,815	-\$14,948,166	\$8,290,000	-\$44,484,840	\$18,948,834	-\$5,156,275	-\$9,003,292	\$2,216,320	-\$5,723,820	
State Revenues	-\$345,618	\$549,645	\$3,085,119	\$4,760,267	\$4,508,862	\$1,796,554	\$2,651,461	-\$627,504	\$2,256,256	\$1,869,984	\$1,752,889	\$857,614	\$1,926,294	\$0.03
State Expenditures	\$1,576,881	\$1,832,148	\$665,418	-\$193,507	\$1,797,069	\$4,453,782	\$2,746,156	\$7,291,416	\$1,846,855	\$4,844,959	\$5,789,271	\$4,943,325	\$3,132,815	
Net State Revenue	-\$1,922,499	-\$1,282,504	\$2,419,701	\$4,953,774	\$2,711,793	-\$2,657,228	-\$94,695	-\$7,918,920	\$409,401	-\$2,974,975	-\$4,036,382	-\$4,085,711	-\$1,206,520	
20% Inducement Scenario														
Changes in:														
Total Employment	-126	7	442	700	344	-54	19	-449	-25	-228	-282	-260	7	
Total Non-Farm Employment	243	646	1,247	1,511	1,038	761	601	603	547	628	714	690	769	
GDP	-\$919,217	\$13,587,706	\$47,848,295	\$72,494,010	\$59,530,928	\$42,285,837	\$49,118,000	\$30,610,662	\$59,326,864	\$58,791,404	\$66,708,014	\$75,185,848	\$47,880,696	
State Revenues	\$4,686,001	\$9,542,562	\$15,078,520	\$17,320,406	\$15,577,027	\$14,454,320	\$12,162,288	\$15,542,648	\$11,897,204	\$15,951,532	\$17,904,101	\$16,442,097	\$13,879,892	\$0.25
State Expenditures	\$619,232	\$357,635	-\$974,686	-\$1,349,129	\$1,674,026	\$4,400,303	\$4,138,174	\$7,058,091	\$4,192,270	\$6,088,782	\$6,728,251	\$6,534,247	\$3,288,933	
Net State Revenue	\$4,066,769	\$9,184,926	\$16,053,206	\$18,669,535	\$13,903,000	\$10,054,016	\$8,024,114	\$8,484,557	\$7,704,934	\$9,862,750	\$11,175,851	\$9,907,850	\$10,590,959	
50% Inducement Scenario														
Changes in:														
Total Employment	305	775	1,444	1,724	1,192	881	656	667	554	634	721	679	852	
Total Non-Farm Employment	638	1,348	2,161	2,442	1,807	1,606	1,175	1,611	1,067	1,404	1,618	1,535	1,534	
GDP	\$30,595,950	\$71,492,738	\$126,854,108	\$156,322,430	\$132,933,506	\$128,098,013	\$110,150,000	\$143,187,183	\$119,738,028	\$154,413,967	\$179,999,811	\$184,323,922	\$128,175,805	
State Revenues	\$12,233,429	\$23,004,456	\$33,013,800	\$36,092,887	\$32,112,490	\$33,332,340	\$26,308,006	\$39,682,979	\$26,247,177	\$36,908,578	\$41,965,106	\$39,661,506	\$31,715,230	\$0.57
State Expenditures	-\$799,241	-\$1,868,791	-\$3,463,198	-\$3,127,070	\$1,424,703	\$4,203,100	\$6,077,700	\$6,531,341	\$7,478,398	\$7,697,157	\$7,892,737	\$8,672,500	\$3,393,278	
Net State Revenue	\$13,032,670	\$24,873,247	\$36,476,997	\$39,219,957	\$30,687,787	\$29,129,239	\$20,230,306	\$33,151,638	\$18,768,778	\$29,211,421	\$34,072,369	\$31,009,006	\$28,321,951	
100% Inducement Scenario														
Changes in:														
Total Employment	1,025	2,056	3,114	3,430	2,606	2,439	1,719	2,527	1,521	2,073	2,396	2,248	2,263	
Total Non-Farm Employment	1,298	2,520	3,684	3,995	3,091	3,017	2,134	3,292	1,935	2,699	3,127	2,946	2,811	
GDP	\$83,147,714	\$168,073,484	\$258,433,844	\$295,975,024	\$255,457,632	\$271,163,605	\$212,230,000	\$331,013,203	\$220,622,337	\$313,940,325	\$369,013,921	\$366,397,945	\$262,122,419	
State Revenues	\$24,805,275	\$45,466,595	\$62,927,357	\$67,433,248	\$59,716,118	\$64,909,906	\$50,042,029	\$80,046,491	\$50,247,195	\$71,984,950	\$82,177,323	\$78,486,126	\$61,520,218	\$1.11
State Expenditures	-\$3,175,363	-\$5,577,060	-\$7,606,936	-\$6,052,893	\$1,060,433	\$3,977,487	\$9,443,679	\$5,797,780	\$13,155,431	\$10,634,355	\$10,072,004	\$12,430,583	\$3,679,958	
Net State Revenue	\$27,980,639	\$51,043,655	\$70,534,293	\$73,486,140	\$58,655,686	\$60,932,420	\$40,598,350	\$74,248,710	\$37,091,764	\$61,350,595	\$72,105,318	\$66,055,542	\$57,840,259	

Machinery and Equipment Expenditure Tax Credit

A credit against the Connecticut corporation business tax for expenditures on machinery and equipment is available to corporations that have no more than 800 full-time, permanent employees in Connecticut. The amount of the credit is 5% or 10% of the incremental increase in expenditures for machinery and equipment acquired for and installed in a facility in Connecticut that exceeds the amount spent for such expenditures in the prior income year. A tax credit equal to 5% of the incremental increase in expenditures for machinery and equipment is available if the corporation employs between 251 and 800 full-time, permanent employees whose wages, salaries or other compensation are earned in Connecticut. A tax credit equal to 10% of the incremental increase in expenditures for machinery and equipment is available if the corporation employs fewer than 250 full-time, permanent employees whose wages, salaries or other compensation are earned in Connecticut.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment assuming a 10% tax credit to be more conservative (the full investment is therefore 10 times the tax credit). We then use 0%, 20%, 50% and 100% of this machinery and equipment expenditure as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all these machinery and equipment expenditures would have happened without the credit, and the 100% scenario represents the possibility that all the expenditures occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. We enter the machinery and equipment expenditures into the model as investment in producers' durable equipment, and the economic model calculates the increase in the non-residential stock of capital in the state as a consequence of the firms' capital spending. For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.7 shows the micro-simulation results of the Machinery and Equipment Expenditure tax credit. As this incentive ostensibly intended to increase the stock of capital by making it relatively less expensive than labor, it is not a job creation incentive, but rather a business/industry development incentive (which then could logically lead to more jobs). Because additions of machinery and equipment ostensibly make workers more productive, firms making incremental investments under this incentive became slightly more productive than they would have without it. Our results do not reflect the firms' increase in productivity. It is possible that the investment in new machinery and equipment replaced worn out machinery and equipment and there was no net new increase in productivity. We have no way of knowing whether the investment replaced or provided new machinery and equipment.

Table 6.7: Net Economic and Fiscal Impacts of the Machinery and Equipment Tax Credit

	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Machinery and Equipment															
Total Claims	\$12,021,354	\$9,572,155	\$7,193,880	\$6,538,679	\$3,061,185	\$1,529,827	\$2,117,599	\$1,573,204	\$1,052,682	\$1,854,854	\$1,508,658	\$1,874,425	\$753,012	\$3,896,270	
0% Scenario															
<i>Changes in:</i>															
Total Employment	-303	-191	-79	-50	110	83	23	10	4	46	13	-20	-7	-28	
Total Non-Farm Employment	-64	-7	51	60	149	96	49	28	14	65	29	2	0	36	
GDP	-\$15,957,418	-\$8,295,701	-\$1,285,984	\$1,099,016	\$11,222,649	\$9,986,328	\$6,057,696	\$5,157,500	\$4,558,644	\$7,563,047	\$5,239,653	\$2,552,731	\$3,552,604	\$2,419,289	
State Revenues	-\$1,212,255	-\$876,213	-\$496,219	-\$415,357	\$240,645	\$26,227	-\$274,162	-\$387,475	-\$515,790	-\$168,309	-\$489,974	-\$712,052	-\$727,815	-\$462,212	-\$0.12
State Expenditures	\$470,655	-\$151,064	-\$652,758	-\$775,968	-\$1,476,302	-\$1,232,126	-\$831,930	-\$733,973	-\$704,660	-\$945,717	-\$729,577	-\$522,266	-\$643,307	-\$686,846	
Net State Revenue	-\$1,682,910	-\$725,149	\$156,539	\$360,611	\$1,716,947	\$1,258,353	\$557,767	\$346,498	\$188,870	\$777,408	\$239,604	-\$189,786	-\$84,509	\$224,634	
20% Scenario															
<i>Changes in:</i>															
Total Employment	-216	-123	-30	-10	125	86	29	12	3	49	15	-15	-7	-6	
Total Non-Farm Employment	15	56	95	97	162	99	54	29	13	68	30	6	-1	56	
GDP	-\$9,714,544	-\$3,305,500	\$2,299,379	\$4,289,078	\$12,443,934	\$10,215,672	\$6,605,342	\$5,402,000	\$4,495,710	\$7,933,569	\$5,490,884	\$3,056,497	\$3,484,547	\$4,053,582	
State Revenues	\$351,503	\$346,338	\$408,203	\$373,541	\$602,193	\$205,611	-\$36,767	-\$215,216	-\$401,249	\$32,752	-\$333,386	-\$511,654	-\$644,656	\$13,632	\$0.00
State Expenditures	\$199,424	-\$267,854	-\$654,443	-\$728,179	-\$1,308,106	-\$1,026,434	-\$667,650	-\$577,640	-\$557,683	-\$853,374	-\$643,161	-\$480,386	-\$591,657	-\$627,473	
Net State Revenue	\$152,079	\$614,192	\$1,062,646	\$1,101,720	\$1,910,299	\$1,232,045	\$630,883	\$362,424	\$156,434	\$886,127	\$309,775	-\$31,268	-\$52,999	\$641,104	
50% Scenario															
<i>Changes in:</i>															
Total Employment	-85	-19	44	52	149	92	38	16	3	56	19	-8	-8	27	
Total Non-Farm Employment	135	151	163	153	184	104	61	32	13	73	33	12	-1	86	
GDP	-\$317,485	\$4,147,767	\$7,780,943	\$9,086,731	\$14,268,266	\$10,675,490	\$7,390,606	\$5,798,000	\$4,542,936	\$8,626,845	\$5,959,337	\$3,930,410	\$3,518,128	\$6,569,844	
State Revenues	\$2,702,269	\$2,198,993	\$1,788,910	\$1,605,321	\$1,198,968	\$520,502	\$333,407	\$63,704	-\$215,649	\$322,972	-\$87,833	-\$213,189	-\$512,641	\$746,595	\$0.19
State Expenditures	-\$199,424	-\$439,223	-\$636,122	-\$615,512	-\$1,015,524	-\$658,925	-\$344,270	-\$266,007	-\$252,769	-\$627,749	-\$437,274	-\$323,100	-\$426,880	-\$480,214	
Net State Revenue	\$2,901,693	\$2,638,216	\$2,425,032	\$2,220,832	\$2,214,492	\$1,179,428	\$677,677	\$329,711	\$37,120	\$950,721	\$349,442	\$109,911	-\$85,761	\$1,226,809	
100% Scenario															
<i>Changes in:</i>															
Total Employment	134	153	167	154	188	101	53	22	2	67	27	5	-6	82	
Total Non-Farm Employment	335	308	274	246	218	112	74	38	12	82	40	24	0	136	
GDP	\$15,309,282	\$16,578,522	\$16,912,910	\$16,994,691	\$17,286,639	\$11,435,272	\$8,767,973	\$6,439,000	\$4,480,310	\$9,836,907	\$6,779,953	\$5,407,479	\$3,654,689	\$10,760,279	
State Revenues	\$6,621,169	\$5,269,231	\$4,057,842	\$3,615,941	\$2,192,045	\$1,026,434	\$967,632	\$540,623	\$122,849	\$855,194	\$369,275	\$341,103	-\$240,903	\$1,979,880	\$0.51
State Expenditures	-\$871,584	-\$720,757	-\$619,266	-\$441,595	-\$509,310	-\$23,475	\$235,641	\$345,206	\$338,498	-\$141,926	\$59,499	\$115,596	\$79,016	-\$165,727	
Net State Revenue	\$7,492,753	\$5,989,988	\$4,677,108	\$4,057,537	\$2,701,355	\$1,049,909	\$731,991	\$195,416	-\$215,649	\$997,120	\$309,775	\$225,507	-\$319,919	\$2,145,607	

Research and Development (Non-incremental) Expenditures Tax Credit

A credit may be applied against the Connecticut corporation business tax for research and development (R & D) expenses incurred in Connecticut. The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. The tax credit varies from 1% to over 6%; we assume a conservative 5% average rate to estimate the impact. We calculate the full value of the investment (20 times the tax credit) and use 0%, 20%, 50% and 100% of this R & D expenditure as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all these R & D expenditures would have happened without the credit, and the 100% scenario represents the possibility that all the R & D expenditures occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. We enter the R & D expenditure into the model as demand for professional and technical services. For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.8 shows the microsimulation results for the Research and Development (non-incremental) tax credit program from 1995 through 2010. Claims averaged \$14.2 million over the period; however, the largest amounts claimed occurred between 1997 and 2001 when claims averaged \$31.8 million. It is interesting to note that though the higher claims in the early years are entered into the model as reduced government spending, the accompanying capital cost reduction for the companies outweigh the public sector loss and overall employment goes up, even in the 0% inducement scenario. This does not seem to hold for lower claims, where the public sector cutbacks outweigh the private sector gains. The tax revenue earned per dollar of credit claimed (tax cost) is over one dollar (\$1.24) even in the 0% scenario, which likely reflects the positive impact of the sectors that claimed the majority of these credits (mostly various manufacturing industries).

Table 6.8: Net Economic and Fiscal Impacts of the Research and Development Tax Credit

Research and Development	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$5,437,634	\$9,162,078	\$55,442,827	\$30,050,168	\$15,195,500	\$23,720,510	\$34,702,296	\$3,430,736	\$5,932,629	\$3,673,756	\$4,831,440	\$5,321,286	\$4,827,816	\$5,981,905	\$4,578,869	\$14,152,630	
0% Scenario																	
<i>Changes in:</i>																	
Total Employment	-132	799	1,111	888	3,073	10,027	6,819	3,320	819	-386	-990	-1,176	-1,158	-1,057	-869	1,406	
Total Non-Farm Employment	-20	914	2,049	1,367	3,131	9,771	6,910	3,104	799	-356	-899	-1,062	-1,049	-936	-777	1,530	
GDP	-\$6,777,736	\$42,136,902	\$62,329,576	\$58,950,316	\$184,170,842	\$593,692,511	\$430,013,460	\$239,471,196	\$82,966,585	\$290,000	-\$46,887,206	-\$65,260,924	-\$69,471,474	-\$64,222,753	-\$51,547,343	\$92,658,263	
State Revenues	-\$1,305,756	\$4,198,765	\$10,380,816	\$8,582,121	\$20,641,717	\$63,922,460	\$53,949,694	\$36,638,352	\$23,135,435	\$15,072,008	\$9,761,659	\$6,756,942	\$4,577,684	\$3,308,696	\$2,892,761	\$17,500,890	\$1.24
State Expenditures	-\$656,310	-\$3,898,350	-\$4,246,013	-\$2,466,847	-\$10,106,131	-\$36,374,916	-\$14,512,236	\$6,110,844	\$19,587,450	\$23,803,753	\$23,773,551	\$21,449,903	\$18,350,401	\$14,716,686	\$11,355,193	\$4,459,132	
Net State Revenue	-\$649,445	\$8,097,115	\$14,626,829	\$11,048,968	\$30,747,848	\$100,297,376	\$68,461,930	\$30,527,508	\$3,547,985	-\$8,731,744	-\$14,011,892	-\$14,692,960	-\$13,772,717	-\$11,407,990	-\$8,462,433	\$13,041,758	
20% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	118	1,198	3,432	2,105	3,625	10,837	7,977	3,292	844	-444	-1,009	-1,169	-1,154	-1,003	-840	1,854	
Total Non-Farm Employment	210	1,283	4,200	2,497	3,642	10,522	7,984	3,076	822	-412	-917	-1,056	-1,045	-886	-749	1,945	
GDP	\$7,934,872	\$66,107,838	\$204,098,758	\$131,810,162	\$216,359,600	\$643,308,963	\$503,385,919	\$233,717,358	\$81,147,184	-\$7,720,000	-\$51,691,938	-\$67,795,186	-\$71,946,486	-\$62,010,452	-\$51,132,063	\$118,371,635	
State Revenues	\$199,090	\$6,430,414	\$20,946,710	\$14,839,963	\$24,360,245	\$69,021,980	\$60,923,679	\$38,151,290	\$24,859,291	\$16,278,940	\$11,100,628	\$8,206,223	\$5,997,172	\$4,945,989	\$4,365,158	\$20,708,451	\$1.46
State Expenditures	-\$940,529	-\$4,439,377	-\$10,882,246	-\$3,348,172	-\$7,958,853	-\$35,206,654	-\$14,590,412	\$12,231,402	\$24,867,647	\$29,028,337	\$28,193,475	\$25,310,103	\$21,920,371	\$17,604,689	\$14,174,720	\$6,397,633	
Net State Revenue	\$1,139,619	\$10,869,791	\$31,828,956	\$18,188,135	\$32,319,098	\$104,228,634	\$75,514,091	\$25,919,888	-\$8,356	-\$12,749,397	-\$17,092,847	-\$17,103,880	-\$15,923,199	-\$12,658,700	-\$9,809,561	\$14,310,818	
50% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	493	1,798	6,915	3,932	4,454	12,053	9,715	3,252	885	-531	-1,035	-1,157	-1,145	-920	-793	2,528	
Total Non-Farm Employment	555	1,837	7,426	4,192	4,409	11,650	9,596	3,035	857	-494	-942	-1,046	-1,038	-810	-707	2,568	
GDP	\$30,016,942	\$102,067,103	\$416,788,780	\$241,070,658	\$264,679,769	\$717,759,553	\$613,502,150	\$225,179,222	\$78,390,510	-\$19,670,000	-\$58,765,572	-\$71,536,338	-\$75,479,083	-\$58,752,537	-\$50,482,838	\$156,984,555	
State Revenues	\$2,416,540	\$9,758,188	\$36,793,039	\$24,236,446	\$29,966,619	\$76,689,409	\$71,411,747	\$40,385,484	\$27,441,315	\$18,026,494	\$13,027,330	\$10,244,132	\$7,989,933	\$7,343,183	\$6,533,283	\$25,484,209	\$1.80
State Expenditures	-\$1,421,091	-\$5,283,633	-\$20,846,280	-\$4,644,239	-\$4,668,314	-\$33,354,070	-\$14,574,932	\$21,524,354	\$32,939,605	\$36,991,329	\$34,945,768	\$31,196,385	\$27,379,214	\$22,048,499	\$18,501,334	\$9,382,262	
Net State Revenue	\$3,837,631	\$15,041,821	\$57,639,320	\$28,880,685	\$34,634,934	\$110,043,479	\$85,986,679	\$18,861,130	-\$5,498,290	-\$18,964,836	-\$21,918,438	-\$20,952,252	-\$19,389,281	-\$14,705,316	-\$11,968,050	\$16,101,948	
100% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	1,119	2,798	12,719	6,975	5,833	14,078	12,607	3,183	949	-678	-1,081	-1,141	-1,133	-785	-718	3,648	
Total Non-Farm Employment	1,130	2,759	12,804	7,016	5,686	13,527	12,280	2,965	913	-633	-988	-1,032	-1,029	-685	-638	3,605	
GDP	\$66,902,532	\$182,039,800	\$771,295,482	\$423,196,019	\$345,220,195	\$841,873,149	\$796,766,058	\$210,904,174	\$73,714,840	-\$39,642,000	-\$70,698,351	-\$77,839,230	-\$81,541,545	-\$53,272,416	-\$49,497,807	\$221,294,727	
State Revenues	\$6,186,893	\$15,354,195	\$63,221,044	\$39,897,251	\$39,265,872	\$89,426,868	\$88,811,878	\$44,016,049	\$31,647,757	\$20,836,354	\$16,147,172	\$13,585,757	\$11,256,739	\$11,235,544	\$10,008,065	\$33,393,163	\$2.36
State Expenditures	-\$2,152,918	-\$6,631,628	-\$37,445,831	-\$6,828,111	-\$7,46,794	-\$30,377,838	-\$14,697,228	\$36,852,058	\$46,188,144	\$50,090,237	\$46,045,513	\$40,884,641	\$36,335,305	\$29,336,726	\$25,611,820	\$14,263,845	
Net State Revenue	\$8,339,811	\$21,985,823	\$100,666,875	\$46,725,362	\$38,519,088	\$119,804,705	\$103,509,106	\$7,163,991	-\$14,540,387	-\$29,253,883	-\$29,898,341	-\$27,298,883	-\$25,078,567	-\$18,101,183	-\$15,603,755	\$19,129,318	

Research and Experimental (Incremental) Expenditures Tax Credit

A credit may be applied against the Connecticut corporation business tax for 20% of the incremental increase in research and experimental expenditures incurred in Connecticut over the previous year's research and experimental expenditure. We assume for purposes of this analysis that 80% of the research and experimental expenditure hires labor and 20% purchases new equipment. In input-output economic models, employment is proportional to sales (output) and for our modeling purposes we assume the incremental research and experimental expenditure leverages new sales for claiming firms that in turn induces new hiring (we use this method as we do not know how many new employees the individual firms hired). The credit represents a reduction in the cost of doing research and experimental work and therefore induces some additional research and experimental activity beyond what would have occurred absent the credit. Please refer to CGS §12-217j and 12-217ee and 26 U.S.C. §174.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the investment (five times the tax credit) and use 0%, 20%, 50% and 100% of this R & E expenditure as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all these R & E expenditures would have happened without the credit, and the 100% scenario represents the possibility that all the R & E expenditures occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. We increase output (that is, sales, which are proportional to employment) of the claiming industry by 20%, 50% and 100% of 80% of the industry's full investment. In addition, we assume that the industry purchases durable equipment equal to 20%, 50% and 100% of 20% of the industry's full investment. The 0% scenario does not contain any of the investment, just the firms' cost reduction equivalent to the tax credit and the cost of the credit to the state. For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.9 shows the results for the microsimulation of the Research and Experimental (incremental) tax credit program. The annual average credit claimed was \$15.6 million over the period 1995 through 2010. Claims over the period were in the neighborhood of the average claim suggesting that on average each year incremental research and experimental outlays were approximately \$78 million. The results show the positive impact to the state even in the case of the 0% scenario, where, similar to the R & D credit case, the cost of capital reduction to the companies outweighs the public sector cutbacks at higher values. However we do see the significant reduction in credits (and implied R & E expenditures) in 2001-2003 has had negative effects that are still having a ripple effect.

Table 6.9: Net Economic and Fiscal Impacts of the Research and Experimental Tax Credit

Research and Experimental	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$21,966,634	\$21,114,196	\$22,745,583	\$18,322,753	\$13,577,729	\$15,797,585	\$8,682,936	\$9,811,504	\$10,268,517	\$14,320,781	\$15,352,339	\$10,637,256	\$20,564,948	\$15,517,716	\$14,800,753	\$15,565,415	
0% Scenario																	
<i>Changes in:</i>																	
Total Employment	1,397	2,466	6,090	5,661	2,744	727	-98	-611	-799	-880	-819	-646	-763	-496	-367	907	
Total Non-Farm Employment	1,715	2,686	6,103	5,619	2,779	914	17	-451	-623	-645	-578	-485	-468	-286	-176	1,075	
GDP	\$70,026,239	\$132,035,880	\$331,876,097	\$316,356,100	\$166,830,576	\$57,849,409	\$10,375,940	-\$22,182,227	-\$35,962,957	-\$41,560,000	-\$37,811,601	-\$26,431,139	-\$37,717,600	-\$15,486,103	-\$4,913,961	\$57,552,310	
State Revenues	\$10,819,511	\$18,503,269	\$41,211,934	\$42,539,787	\$29,776,076	\$20,416,230	\$14,977,426	\$11,551,430	\$9,174,958	\$8,315,947	\$7,494,692	\$6,732,378	\$5,288,844	\$6,310,400	\$6,436,922	\$15,969,987	\$1.03
State Expenditures	-\$3,192,305	-\$5,368,059	-\$15,652,644	-\$9,065,266	\$5,217,959	\$14,177,937	\$16,881,533	\$18,383,531	\$17,873,621	\$16,674,937	\$14,653,537	\$12,200,161	\$11,918,789	\$9,039,221	\$7,622,164	\$7,424,341	
Net State Revenue	\$14,011,816	\$23,871,327	\$56,864,578	\$51,605,053	\$24,558,117	\$6,238,292	-\$1,904,107	-\$6,832,100	-\$8,698,663	-\$8,358,990	-\$7,158,845	-\$5,467,783	-\$6,629,944	-\$2,728,822	-\$1,185,242	\$8,545,646	
20% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	1,796	2,852	6,644	6,051	2,984	851	-52	-566	-750	-822	-760	-610	-656	-411	-282	1,085	
Total Non-Farm Employment	2,084	3,043	6,621	5,981	3,001	1,025	57	-411	-580	-596	-527	-454	-373	-210	-101	1,237	
GDP	\$92,116,284	\$154,583,973	\$361,333,048	\$338,889,038	\$180,834,571	\$67,748,632	\$13,729,688	-\$18,872,289	-\$31,789,118	-\$32,940,000	-\$29,434,119	-\$21,273,844	-\$23,488,476	-\$4,798,821	\$5,843,025	\$70,165,440	
State Revenues	\$13,036,961	\$20,824,972	\$44,497,411	\$45,196,724	\$31,696,168	\$22,019,282	\$16,053,324	\$12,579,483	\$10,202,754	\$9,658,895	\$8,802,728	\$7,760,430	\$6,875,498	\$7,741,136	\$7,853,431	\$17,653,280	\$1.13
State Expenditures	-\$4,414,305	-\$6,219,350	-\$16,943,880	-\$9,461,286	\$5,577,060	\$15,123,133	\$18,150,937	\$19,581,577	\$19,001,690	\$17,682,148	\$15,625,725	\$13,273,702	\$12,542,117	\$9,835,128	\$8,412,325	\$7,851,115	
Net State Revenue	\$17,451,267	\$27,044,321	\$61,441,291	\$54,658,010	\$26,119,108	\$6,896,149	-\$2,097,614	-\$7,002,093	-\$8,798,936	-\$8,023,253	-\$6,822,998	-\$5,513,272	-\$5,666,619	-\$2,093,992	-\$558,894	\$9,802,165	
50% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	2,395	3,430	7,475	6,634	3,343	1,038	16	-497	-677	-735	-672	-554	-495	-283	-155	1,351	
Total Non-Farm Employment	2,637	3,578	7,397	6,524	3,334	1,193	118	-349	-515	-522	-452	-406	-231	-97	11	1,481	
GDP	\$125,251,351	\$188,500,098	\$405,547,640	\$372,805,544	\$201,810,769	\$82,496,454	\$18,728,841	-\$13,785,140	-\$25,460,414	-\$20,160,000	-\$17,001,360	-\$13,516,764	-\$2,029,597	\$11,314,651	\$21,995,294	\$89,099,824	
State Revenues	\$16,435,221	\$24,356,774	\$49,432,801	\$49,236,131	\$34,678,905	\$24,507,037	\$17,740,703	\$14,206,559	\$11,807,119	\$11,724,969	\$10,844,324	\$9,416,232	\$9,378,254	\$9,948,828	\$10,011,920	\$20,248,385	\$1.30
State Expenditures	-\$6,178,655	-\$7,436,485	-\$18,844,865	-\$9,979,713	\$6,214,647	\$16,643,008	\$20,171,148	\$21,548,639	\$20,865,092	\$19,395,268	\$17,287,285	\$15,065,970	\$13,675,440	\$11,199,538	\$9,780,653	\$8,627,131	
Net State Revenue	\$22,613,876	\$31,793,259	\$68,277,666	\$59,215,845	\$28,464,258	\$7,864,029	-\$2,430,445	-\$7,342,079	-\$9,057,973	-\$7,670,299	-\$6,442,960	-\$5,649,739	-\$4,297,186	-\$1,250,710	\$231,267	\$11,621,254	
100% Inducement Scenario																	
<i>Changes in:</i>																	
Total Employment	3,393	4,395	8,860	7,608	3,943	1,349	131	-382	-553	-588	-523	-460	-226	-69	56	1,795	
Total Non-Farm Employment	3,560	4,469	8,692	7,430	3,891	1,474	220	-246	-405	-398	-325	-326	5	93	199	1,889	
GDP	\$180,492,413	\$244,980,660	\$479,277,515	\$429,388,813	\$236,816,501	\$107,240,120	\$27,180,646	-\$5,284,617	-\$14,851,100	\$1,280,000	\$3,839,679	-\$560,116	\$33,647,434	\$38,159,432	\$49,050,065	\$120,710,496	
State Revenues	\$22,009,741	\$30,182,138	\$57,639,320	\$55,946,876	\$39,603,720	\$28,635,653	\$20,542,681	\$16,902,163	\$14,489,415	\$15,177,034	\$14,211,633	\$12,100,085	\$13,439,331	\$13,539,882	\$13,606,189	\$24,535,057	\$1.58
State Expenditures	-\$9,213,061	-\$9,547,124	-\$22,080,128	-\$10,930,162	\$7,189,350	\$19,108,079	\$23,476,244	\$24,729,936	\$23,873,275	\$22,124,207	\$19,912,194	\$17,913,584	\$15,384,871	\$13,303,005	\$11,871,689	\$9,807,731	
Net State Revenue	\$31,222,802	\$39,729,262	\$79,719,447	\$66,877,038	\$32,414,370	\$9,527,574	-\$2,933,563	-\$7,827,774	-\$9,383,660	-\$6,947,173	-\$5,700,562	-\$5,813,499	-\$1,945,539	\$236,877	\$1,734,500	\$14,727,327	

Human Capital Tax Credit

The tax credit percentage is 5% of the amount paid or incurred by the corporation as a human capital investment. This is a credit for costs incurred by a firm for a variety of human capital investments including employee training, donations to institutions of higher learning, day care facilities' construction and child care subsidies. For purpose of this analysis, we select employee training as the driver of net new economic activity because the others (day care facilities' construction and child care subsidies) are difficult to quantify. Please refer to CGS §12-217x.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We calculate the full value of the employee training (20 times the tax credit) and use 0%, 20%, 50% and 100% of this human capital investment as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all human capital investment would have happened without the credit, and the 100% scenario represents the possibility that all human capital investment occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. We enter the human capital investment into the model as an increase in demand for higher education (educational services), and for each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.10 reports the micro-simulation results for the Human Capital tax credit program. From 1995 through 2010, the annual average claim was \$2 million implying that the average investment in human capital was \$40 million each year from 1995 through 2010. Our modeling approach shows that this credit produces modest and positive benefits as the program continues to produce cumulative productivity gains to firms making investment in human capital.

Table 6.10: Net Economic and Fiscal Impacts of the Human Capital Tax Credit

	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Human Capital Investment														
Total Claims	\$1,501,855	\$2,865,262	\$2,538,752	\$2,964,233	\$1,692,881	\$2,258,417	\$1,443,930	\$1,692,881	\$1,514,328	\$1,626,952	\$1,732,851	\$3,514,656	\$2,112,250	
0% Scenario														
<i>Changes in:</i>														
Total Employment	-41	-63	-46	-54	-1	-15	4	-2	-1	-5	-8	-27	-22	
Total Non-Farm Employment	-11	-8	0	-3	17	18	23	19	18	14	12	17	10	
GDP	-\$2,131,178	-\$3,312,434	-\$2,130,924	-\$2,387,185	\$1,205,494	\$695,963	\$2,335,000	\$2,036,878	\$2,338,749	\$2,159,053	\$1,982,265	\$1,161,889	\$329,464	
State Revenues	-\$95,045	-\$74,019	-\$15,879	-\$63,470	\$171,612	\$263,216	\$285,807	\$278,400	\$272,024	\$218,165	\$193,292	\$362,318	\$149,702	\$0.07
State Expenditures	\$146,888	\$223,522	\$139,889	\$157,902	-\$91,472	\$65,177	-\$6,887	\$83,962	\$110,993	\$152,999	\$173,394	\$364,245	\$126,718	
Net State Revenue	-\$241,932	-\$297,541	-\$155,768	-\$221,372	\$263,084	\$198,039	\$292,694	\$194,438	\$161,031	\$65,166	\$19,898	-\$1,927	\$22,984	
20% Inducement Scenario														
<i>Changes in:</i>														
Total Employment	125	250	225	249	125	184	120	125	105	103	108	219	161	
Total Non-Farm Employment	149	292	259	287	138	208	133	141	119	118	123	252	185	
GDP	\$3,228,550	\$6,975,607	\$6,996,212	\$7,875,464	\$5,380,530	\$7,509,027	\$5,981,000	\$6,203,033	\$5,692,048	\$5,809,037	\$6,045,854	\$11,170,027	\$6,572,199	
State Revenues	\$411,861	\$968,840	\$1,026,861	\$1,168,007	\$869,393	\$1,229,177	\$1,008,072	\$1,048,196	\$988,932	\$986,936	\$1,011,938	\$1,804,844	\$1,043,588	\$0.49
State Expenditures	-\$351,378	-\$529,857	-\$77,884	\$112,234	-\$922,010	\$757,059	\$1,234,479	\$1,235,564	\$1,386,506	\$1,407,210	\$1,364,411	\$845,087	\$692,120	
Net State Revenue	\$763,239	\$1,498,697	\$1,104,745	\$1,055,773	-\$52,617	\$472,118	-\$226,407	-\$187,367	-\$397,574	-\$420,274	-\$352,473	\$959,757	\$351,468	
50% Inducement Scenario														
<i>Changes in:</i>														
Total Employment	375	719	631	703	317	484	296	320	268	269	284	590	438	
Total Non-Farm Employment	389	743	648	722	321	495	300	327	274	276	291	608	450	
GDP	\$11,283,197	\$22,406,393	\$20,799,787	\$23,422,290	\$11,876,283	\$17,801,906	\$11,670,000	\$12,627,822	\$10,916,980	\$11,354,775	\$12,195,169	\$26,506,288	\$16,071,741	
State Revenues	\$1,173,660	\$2,557,679	\$2,623,864	\$3,080,628	\$2,064,201	\$2,866,130	\$2,229,638	\$2,359,767	\$2,174,376	\$2,209,981	\$2,264,543	\$3,970,078	\$2,464,545	\$1.17
State Expenditures	-\$1,094,456	-\$1,641,605	-\$378,078	\$92,883	-\$2,525,611	\$1,946,963	\$3,279,892	\$3,164,033	\$3,529,950	\$3,551,081	\$3,411,027	\$1,830,861	\$1,684,847	
Net State Revenue	\$2,268,117	\$4,199,284	\$3,001,942	\$2,987,745	-\$461,410	\$919,167	-\$1,050,254	-\$804,265	-\$1,355,573	-\$1,341,100	-\$1,146,484	\$2,139,217	\$779,699	
100% Inducement Scenario														
<i>Changes in:</i>														
Total Employment	792	1,501	1,307	1,460	636	983	586	641	535	543	575	1,207	897	
Total Non-Farm Employment	790	1,494	1,296	1,447	624	971	577	633	529	536	569	1,198	889	
GDP	\$24,674,153	\$48,073,290	\$43,663,743	\$49,227,269	\$22,558,356	\$34,846,698	\$20,860,000	\$22,976,476	\$19,382,131	\$20,460,536	\$22,233,069	\$51,926,804	\$31,740,210	
State Revenues	\$2,469,727	\$5,144,673	\$5,247,727	\$6,223,178	\$3,950,314	\$5,456,510	\$4,132,148	\$4,401,364	\$4,048,525	\$4,193,298	\$4,339,584	\$7,593,256	\$4,766,692	\$2.26
State Expenditures	-\$2,325,720	-\$3,510,396	-\$907,388	-\$23,221	\$5,075,506	\$3,726,805	\$6,430,655	\$6,115,951	\$6,823,356	\$6,809,387	\$6,499,901	\$3,141,372	\$3,154,684	
Net State Revenue	\$4,795,447	\$8,655,069	\$6,155,115	\$6,246,399	-\$1,125,192	\$1,729,705	-\$2,298,507	-\$1,714,588	-\$2,774,832	-\$2,616,089	-\$2,160,317	\$4,451,883	\$1,612,008	

Section 6.2: Credits that Target Other Activities (not administered by DECD)

Land Donation Tax Credit

Tax credits are available for the donation of land for open space or for educational use. The tax credit is equal to 50% of the value of the land and can be carried forward for up to 15 successive income years until the credit is fully taken. We assume the donation of land would not have occurred were it not for the credit. We assume the non-pecuniary amenity value of living in Connecticut increases by the implicit value of the land equal to double the amount of the credit. The amount of the credit reduces the claiming firm's cost of capital. We reduce state government spending each year by the full amount of the credit claimed.

Table 6.11 shows the microsimulation results for the donation of the land donation tax credit program. The annual average claim from 2003 through 2010 was \$366,299 suggesting that the annual average value of land donated was \$732,598. Because the purpose of the program was to increase the stock of open space land in the state and not increase jobs or state revenue, the results reported in table 6.11 do not realistically reflect the value of the program. We do not know how many acres of open space were added to the state's stock because of this program, but our quality of life increased as a result of this program.

This credit was modified during the July 2013 session by extending the carry forward period from 15 to 25 years, applicable for any credits allowed beginning January 1, 2016.

Table 6.11: Net Economic and Fiscal Impacts of the Land Donation Tax Credit

Land Donation	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$184,782	\$1,234,270	\$55,757	\$6,778	\$94,876	\$1,344,066	\$6,245	\$3,616	\$366,299	
<i>Changes in:</i>										
Total Employment	-4	-27	4	5	2	-24	8	6	-4	
Total Non-Farm Employment	-1	-7	5	4	3	-5	7	5	1	
GDP	-\$243,544	-\$1,628,768	\$580,000	\$532,832	\$386,797	-\$1,506,290	\$1,108,352	\$887,647	14,628	
State Revenues	-\$12,142	-\$89,410	\$34,435	\$25,630	\$11,827	-\$89,721	\$50,218	\$36,617	-4,068	-\$0.01
State Expenditures	\$37,237	\$284,942	\$65,426	\$46,842	\$62,775	\$341,886	\$75,801	\$77,089	124,000	
Net State Revenue	-\$49,379	-\$374,352	-\$30,991	-\$21,211	-\$50,948	-\$431,607	-\$25,583	-\$40,472	-\$128,068	

Housing Tax Credit Contribution (HTCC) Program

The Connecticut Housing Finance Authority (CHFA) administers the HTCC program to provide funding for housing sponsored by non-profit developers in Connecticut. The intent of the HTCC Program is to develop affordable rental housing that benefits very low-, low- and moderate-income families in Connecticut. HTCC funds may be used to develop new construction and rehabilitation of existing developments. Housing can be targeted towards elderly individuals, families and persons in need of supportive services. The funds may be used towards Revolving Loan Funds and developments with homeownership components.

Each year CHFA allocates up to \$10 million in HTCC funds on a competitive basis to non-profit corporations. The HTCC program is categorized into three segments with the following set-asides:

- Workforce Housing - \$1,000,000
- Special Tier I (Supportive Housing) - \$2,000,000
- Tier I - \$7,000,000

If funding for a set-aside category is not fully expended, the remaining amount will fall into Tier I increasing the set-aside for general housing developments. If there are more applicants in one set-aside than there is funding, the top scoring applicants will receive funding in their requested set-aside; the lower scoring applicants will be reviewed in the Tier I category and compete among the general applicants.

Under the HTCC program, a non-profit corporation can be awarded up to \$500,000 in HTCC funds. These funds can be “purchased” dollar-for-dollar by state business firms in return for cash contributions to the non-profit corporation’s development. The non-profit corporation is subject to a yearly limit of \$500,000 in HTCC funds. The non-profit corporation may continue to apply for additional credits in future years. While cash contributions made by eligible business firms under the HTCC program represent a dollar-for-dollar credit against their state corporate taxes, these firms may also qualify for federal and state contribution deductions and can realize an additional significant tax savings. Connecticut’s utility companies are the primary contributors to the HTCC program.

Economic and Fiscal Impacts of HTCC Projects

We characterize the results of the DECD HTCC economic impact analysis in terms of net new state revenue, net new personal income, net new state gross domestic product, net new industry sales and net new jobs. Net new economic activity is new activity in terms of jobs and state gross domestic product net of costs such as new debt service incurred issuing new bonds to cover public loans.

HTCC Funding Sources and Uses Profile 2006-2012

CHFA provided funding source and use data for 2006 through 2012 for housing construction under the HTCC program. Table 6.12 shows the source and use data for each calendar year for each housing segment (homeownership and rentals by housing authorities, supportive housing and non-profit entities). Inspection of this data yields interesting trends. First, the number of units increased dramatically over the four-year period from 493 units in 2006 to 849 units in 2009 despite the recession that began in Connecticut in March 2008, and to 920 units in 2012. Funding from all sources increased from \$116.3 million in 2006 to \$128 million in 2012. The annual average growth in funding was 6.5% while the annual average growth in units was 13.2%.

Modeling the HTCC Impact

The direct effects that drive the economic and fiscal impacts are (1) construction hard costs and the developer allowance fee, (2) architectural, engineering and consulting costs, soft costs and entity and syndication costs, (3) financing costs, (4) conveyance taxes paid to municipalities and the state, (5) real estate brokerage fees, (6) state debt service on public loans (a negative effect), and (6) the reduction in the utilities' cost of capital as they realize reductions in their federal tax liability. We include as well net additions to the residential capital stock that accumulate to \$741 million over the seven-year period.

As spending in categories one through six flows through the Connecticut economy, it produces an indirect effect that is the net new business-to-business spending and an induced effect that is the net new spending of workers' income whose employers receive new business as a result of the construction and related activities comprising the direct effect. The state and municipalities receive new tax revenue but incur changed expenditure as well. The latter is due to some workers leaving unemployment and retirement as employment opportunities increase (e.g., in construction) that reduces public spending on the one hand and to increased demand for public services (e.g., education and public safety) that increases public expenditure on the other. The net fiscal effect can be positive or negative and measures the fiscal benefit net of the debt service incurred by the state (we capture the state effect exclusively and ignore the tax cost to the federal government).

Table 6.12: Funding Sources and Uses for 2006-2012 HTCC Program

USES	HTCC Funding for 2006				HTCC Funding for 2007				HTCC Funding for 2008				HTCC Funding for 2009			
	Homeownership	Rental			Homeownership	Rental			Homeownership	Rental			Homeownership	Rental		
		Housing Authorities	Supportive Housing	Non-Profit		Housing Authorities	Supportive Housing	Non-Profit		Housing Authorities	Supportive Housing	Non-Profit		Housing Authorities	Supportive Housing	Non-Profit
Construction	\$4,878,359	\$3,125,000	\$2,892,619	\$5,130,006	\$2,973,600	\$1,498,077	\$6,024,975	\$2,397,141	\$2,813,559	\$3,388,833	\$2,448,224	\$23,019,733	\$1,379,860	\$53,122,245	\$41,093,326	\$31,005,963
Architectural and Engineering	\$10,500	\$2,200	\$1,435,235	\$3,050,103	\$34,100	\$244,740	\$3,031,002	\$1,459,201	\$32,500	\$2,175,009	\$1,532,290	\$1,341,714	\$10,000	\$3,321,115	\$2,324,377	\$1,747,250
Finance and Interim Costs	\$212,504	\$154,650	\$1,534,455	\$2,273,298	\$198,630	\$311,252	\$2,102,565	\$477,719	\$165,000	\$911,814	\$473,877	\$1,384,872	\$82,734	\$5,458,919	\$1,988,056	\$1,495,931
Soft Costs	\$84,906	\$108,450	\$1,551,734	\$2,441,821	\$97,640	\$672,356	\$1,975,758	\$483,775	\$105,258	\$1,640,060	\$647,632	\$1,554,757	\$18,777	\$1,878,414	\$1,470,120	\$1,117,645
Developer Allowance/Fees	\$0	\$0	\$2,165,334	\$5,124,481	\$300,620	\$1,317,902	\$3,444,935	\$1,901,053	\$250,000	\$4,193,122	\$2,504,316	\$2,321,276	\$70,000	\$9,659,943	\$4,109,550	\$2,707,813
Pre-Development Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$466,835	\$32,407	\$0	\$0	\$245,000	\$268,275	\$0	\$197,340	\$24,574	\$120,000
Site Acquisition	\$1,916,918	\$0	\$4,488,301	\$2,803,815	\$279,885	\$841,439	\$7,515,482	\$2,708,801	\$187,500	\$0	\$1,188,700	\$14,785,728	\$195,300	\$6,885,392	\$5,758,891	\$10,414,304
Capitalized Reserves	\$0	\$0	\$603,501	\$0	\$0	\$304,258	\$3,300,805	\$633,263	\$0	\$1,864,604	\$287,676	\$1,634,540	\$0	\$2,220,428	\$1,071,374	\$1,667,060
Entity and Syndication Costs	\$0	\$0	\$151,800	\$64,850	\$0	\$231,749	\$1,778	\$152,800	\$0	\$814,890	\$0	\$250,862	\$0	\$268,409	\$148,835	\$418,862
Total Uses	\$7,113,197	\$3,800,300	\$94,514,189	\$89,691,192	\$3,823,375	\$17,201,835	\$81,703,488	\$32,143,951	\$3,553,817	\$20,989,502	\$31,328,598	\$48,571,789	\$2,358,771	\$87,920,795	\$55,987,792	\$49,705,128
SOURCES																
Total HTCC Claims for Current Year	\$2,084,500	\$500,000	\$2,249,357	\$5,053,226	\$804,490	\$1,211,316	\$3,088,724	\$3,974,555	\$1,000,000	\$1,500,000	\$2,097,674	\$5,255,971	\$1,000,000	\$1,152,770	\$2,446,670	\$5,013,524
Total Prior HTCC	\$0	\$0	\$0	\$1,213,422	\$0	\$0	\$737,230	\$941,457	\$0	\$0	\$970,444	\$500,000	\$16,750	\$900,000	\$2,927,556	\$1,765,183
LHTC Equity	\$0	\$0	\$10,459,710	\$29,005,962	\$0	\$5,739,181	\$0	\$10,075,337	\$0	\$29,146,260	\$0	\$12,082,906	\$0	\$32,402,220	\$7,682,220	\$11,706,090
CHFA	\$0	\$0	\$3,880,300	\$5,930,000	\$0	\$1,530,000	\$0	\$2,282,407	\$0	\$0	\$0	\$9,905,842	\$0	\$13,033,836	\$5,315,156	\$5,250,000
Next Steps/PILOTS	\$0	\$0	\$12,781,380	\$0	\$0	\$0	\$57,525,886	\$0	\$0	\$0	\$18,093,950	\$0	\$0	\$0	\$31,163,097	\$0
Sales Proceeds	\$2,033,638	\$0	\$0	\$0	\$2,093,000	\$0	\$0	\$0	\$1,922,500	\$0	\$0	\$0	\$1,345,000	\$0	\$0	\$0
Equity	\$186,000	\$0	\$561,507	\$2,957,844	\$30,000	\$3,438,303	\$4,555,147	\$1,018,850	\$450,317	\$330,554	\$3,698,030	\$3,900,640	\$0	\$1,160,547	\$2,903,493	\$2,862,237
Grants	\$1,557,257	\$1,400,300	\$3,786,305	\$17,385,346	\$580,300	\$750,000	\$5,200,591	\$6,354,504	\$10,000	\$6,280,000	\$6,210,500	\$3,515,400	\$231,250	\$35,483,592	\$1,299,000	\$12,775,309
Public Loans	\$0	\$0	\$0	\$6,769,135	\$312,657	\$3,653,781	\$5,150,000	\$5,063,109	\$0	\$10,102,668	\$300,000	\$9,087,060	\$45,000	\$6,000,000	\$2,250,000	\$1,878,003
Private Loans	\$806,750	\$1,700,300	\$95,000	\$1,373,012	\$0	\$390,000	\$45,000	\$1,379,800	\$0	\$1,880,000	\$0	\$1,792,850	\$19,371	\$980,000	\$0	\$885,083
Total Sources	\$6,863,235	\$3,800,300	\$94,383,731	\$89,702,947	\$3,813,880	\$18,912,587	\$77,716,558	\$32,087,939	\$3,553,817	\$20,989,502	\$31,328,598	\$48,055,852	\$2,358,771	\$87,572,955	\$55,987,792	\$49,915,349
GAP	\$449,952	\$0	\$130,452	-\$11,755	\$18,695	\$289,254	\$3,986,928	\$55,952	\$0	\$0	\$0	\$516,117	\$0	\$347,230	\$1	\$139,777
Total Number of Units	58	20	120	297	13	108	287	180	18	280	92	376	5	355	157	332

	2010			2011			2012		
	HTCC	Supportive Housing	Housing Authority	HTCC	Supportive Housing	Housing Authority	HTCC	Supportive Housing	Housing Authority
Uses									
Construction	23,931,346	19,761,331	5,195,816	37,151,688	7,994,609	41,186,579	48,235,763	14,085,620	15,822,931
Architectural & Engineering	1,313,795	1,525,701	2,585,766	2,306,055	695,922	2,256,088	2,267,267	799,275	993,620
Finance & Interim Costs	2,062,454	1,594,510	1,942,483	1,179,815	957,394	2,732,130	4,465,972	365,272	525,000
Soft Costs	1,251,068	502,522	2,526,423	1,551,184	500,537	2,607,274	5,501,725	1,047,650	800,371
Developer Allow. / Fees (Max. 15% TDC)	2,585,176	2,386,700	6,594,757	3,014,755	1,416,076	5,609,578	5,145,888	2,407,203	1,812,152
Pre-Dev. Financing (Intl) Cost	60,000	31,020	-	60,000	494,286	-	5,000	-	-
Site Acquisition	7,444,257	2,078,334	1	7,641,954	2,843,400	3,071,000	18,917,419	1,794,000	-
Capitalized Reserves	386,551	683,539	1,920,874	2,998,636	124,855	2,005,173	2,259,819	1,226,723	373,750
Entity & Syndication Costs	289,872	85,755	663,325	268,301	16,118	501,821	311,792	177,371	199,308
Total Uses	39,341,539	28,945,415	73,429,457	56,172,372	15,013,527	59,902,656	87,200,715	21,243,123	20,467,167
Sources									
State HTCC Net Proceeds	4,412,000	1,300,000	1,820,000	7,761,681	2,934,493	2,103,550	8,156,783	1,500,000	500,000
LHTC Equity	13,558,291	3,837,200	20,939,556	11,025,082	-	17,679,354	12,934,907	8,075,555	10,909,037
CHFA	4,652,000	-	-	-	-	-	18,400,000	-	-
CHFA Next Steps	-	4,822,370	-	-	-	-	-	-	-
Homeownership Sales Proceeds	3,105,000	-	-	1,433,700	-	-	1,595,000	-	-
Equity	-	7,232,749	13,841,157	3,826,199	-	11,301,513	3,148,127	6,619,994	400,000
Grants	3,319,177	620,000	17,622,097	13,289,289	665,270	8,370,000	17,990,959	992,918	2,315,289
Public Loans	5,866,875	4,900,000	10,206,643	9,046,988	953,500	8,439,080	10,637,457	3,825,652	342,841
Private Loans	142,500	6,233,005	8,770,000	9,474,541	10,452,007	11,481,677	13,770,598	260,003	6,000,000
Total Sources	35,055,843	28,945,415	73,199,453	55,857,474	15,005,270	59,375,174	86,614,231	21,243,122	20,467,167
GAP	(4,285,696)	(230,004)	(130,004)	(314,898)	(8,257)	(527,482)	(586,484)	(1)	(1)
Project Units	227	172	516	890	53	304	748	127	45

Using the direct effects as inputs, the REMI model (see Appendix B for a description) estimates the total effect (the sum of the direct, indirect and induced effects of the net new economic activity in the state). Table 6.13 summarizes the direct effects that drive the impact analysis (dollars in nominal terms). Debt service accumulates each year through 2012 when it peaks at almost \$9 million. Debt service continues at this level until 2026 when the encumbrance for the first public loan ends. Debt service then decreases each year through 2032 when the encumbrance for the last public loan issued in 2012 ends.

Table 6.14 summarizes the microsimulation results and shows the changes above the baseline forecast of the state economy due to the direct effects of the HTCC projects and related spending. Most of the resulting new jobs are in the construction and service sectors as expected. Net revenue to the state averages \$8.4 million above the baseline each year from 2006 through 2012. Absent further net new economic activity such as net new household consumption, the economic and fiscal effects of HTCC projects dissipate quickly after 2012. If prospective tenants and owners move from one Connecticut location to another, there is not necessarily net new household consumption in the state. To the extent that there is migration from other states and countries to Connecticut as housing options increase, there will be net new economic and fiscal benefits. Without such evidence, we omit these considerations from the REMI model.

Moreover, this analysis ignores certain beneficial effects of providing affordable housing to very low-, low- and moderate- income families in Connecticut. Such benefits may include reduced housing cost burden that allows households to reallocate their spending or saving patterns. We cannot account for these benefits absent supporting data. Other benefits may include being closer to work and thereby reducing transportation costs. Still other benefits may include being closer to social and supportive services. Therefore, to the extent that there are non-measurable benefits for which we do not account, this analysis is conservative. Personal income represents income from all sources including government transfer payments and averages \$91.1 million more each year in the 2006-2009 period than had these HTCC-funded projects not occurred.

State gross domestic product represents the value of goods and services produced in the state in a given year. State gross domestic product averages \$78.8 million more each year in the 2006-2012 period than had these HTCC-funded projects not occurred. Output is the value of shipments or sales by all industries and averages \$140 million more each year in the 2006-2012 period than had these HTCC-funded projects not occurred.

Table 6.13: Direct Effects of HTCC Program 2006 - 2012

Industry Sector Sales	2006	2007	2008	2009	2010	2011	2012
Multi-family construction (in millions)	\$92.01	\$105.85	\$98.94	\$148.75	\$112.47	\$96.35	\$87.46
Prof, tech services	\$9,111,483	\$9,795,088	\$10,095,855	\$12,812,212	\$11,154,250	\$10,736,646	\$12,068,453
Financial Services	\$4,174,745	\$3,030,066	\$2,915,503	\$9,023,040	\$5,539,459	\$4,869,339	\$5,356,244
Local Government (Conveyance Taxes)	\$22,533	\$28,609	\$40,432	\$52,659	\$23,806	\$33,766	\$50,404
State Government (Conveyance Taxes)	\$90,133	\$114,437	\$161,729	\$210,637	\$95,226	\$135,064	\$201,614
State Government (new debt service)	\$556,993)	\$1,806,230	\$3,409,835	\$4,247,036	-\$5,973,079	-\$7,490,587	-\$8,709,062
Residential Capital Stock (in millions)	\$92.01	\$105.85	\$98.94	\$148.75	\$112.47	\$96.35	\$87.46
Utilities' Capital Cost (in millions)	-\$2.97	-\$2.72	-\$2.96	-\$2.88	-\$2.26	-\$3.84	-\$3.05
Real Estate	\$540,800	\$686,620	\$970,376	\$1,263,820	\$571,356	\$810,381	\$1,209,685

Source: CHFA and author's calculations.

Table 6.14: REMI Results (Changes from Baseline Forecast)

Economic Indicator	2006	2007	2009	2010	2011	2012	Avg. Ann. Change
Total Emp (Jobs)	1,570	1,590	1,777	971	520	253	1,131
Construction Jobs	854	910	1078	655	414	258	702
Manufacturing	24	23	20	6	-1	-4	12
Trade	187	195	224	140	95	68	153
Transportation, Information & Financial Activities	33	25	30	6	-5	-8	13
Services	336	328	354	196	110	71	236
Total GRP (Nominal \$)	\$99,698,195	\$102,184,201	\$118,231,501	\$61,004,760	\$28,623,909	\$9,176,826	\$71,404,146
Personal Income (Nominal \$)	\$84,560,000	\$95,660,000	\$119,230,000	\$79,730,000	\$53,770,000	\$35,860,000	\$78,798,571
Output (Nominal \$)	\$187,990,285	\$194,349,721	\$227,195,554	\$122,837,841	\$64,592,562	\$29,354,228	\$140,291,383
State Revenues at State Average Rates (Nominal \$)	\$9,686,536	\$10,553,458	\$12,743,975	\$8,547,231	\$6,224,340	\$4,650,000	\$8,811,415
State Expenditures at State Average Rates (Nominal \$)	-\$5,665,209	-\$3,730,101	-\$2,236,118	\$2,958,286	\$5,584,178	\$6,800,000	\$442,450
Net State Revenue (Nominal \$)	\$15,351,745	\$14,283,559	\$14,980,093	\$5,588,945	\$640,162	-\$2,150,000	\$8,368,965

Source: REMI PI+ Ver. 1.3.12 State Model, Regional Economic Models, Inc., Amherst, MA and authors' calculations. Jobs in subsectors may not add to the total because of round off error.

The Housing Contribution tax credit accomplishes the twin goals of creating more affordable housing in the state and generating more state tax revenue than it costs (that is, it stimulates economic growth). To the extent that the new housing created through this program alleviates overcrowding, it improves the quality of life for Connecticut citizens. To the extent that it provides more affordable housing for workers, firms are content to remain in the state. Because the program has been successful and because the demand for affordable rental units will increase significantly due to demographic and preference changes relative to ownership, the program should continue.

Neighborhood Assistance Act Tax Credit Program

A credit may be applied against various Connecticut business taxes by a company that makes individual cash investments of at least \$250 to certain community programs that have received both municipal and state approval. The cash investments must be made in community programs that are proposed and conducted by tax-exempt or municipal agencies and must be approved by the municipality in which the programs are conducted and by DRS. Please refer to CGS §§12-631 through 12-638, as amended by 2007 Conn. Pub. Acts 242, §72 and 2007 Conn. Pub. Acts 5, §§11 and 12 (June Spec. Sess.).

A tax credit equal to 100% of the cash invested is available to business firms that invest in energy conservation projects. A tax credit equal to 60% of the cash invested is available to business firms that invest in programs that provide: neighborhood assistance; job training; education; community services; crime prevention; construction or rehabilitation of dwelling units for families of low and moderate income in the state; funding for open space acquisitions; child day care facilities; child care services; and any other program which serves persons at least 75% of whom are at an income level not exceeding 150% of the poverty level for the preceding year. A tax credit equal to 40% of the cash invested is available to business firms that invest in community-based alcoholism prevention or treatment programs. Note that the total charitable contributions of the contributing business firm must equal or exceed its prior year's charitable contributions in order to be eligible for the tax credit. This requirement does not apply if the contribution is to an approved open space acquisition fund.

The methodology of assessing the impact of this credit has been modified from that in the 2010 report to relate the full value of the relevant investment to the tax credit. We use the 60% tax credit to calculate the full value of the related investment and use 0%, 20%, 50% and 100% of this investment as the range of full investment relevant to the tax credit. The 0% scenario represents the conservative possibility that all these investments in community programs would have happened without the credit, and the 100% scenario represents the possibility that all the investment occurred due to the tax credit. The 20% and 50% scenarios represent the range in between the two extremes. For modeling purposes, we assign half the new spending as net new output (sales) of nonprofits and half as increased spending of local government.

For each scenario, the amount of the credit reduces the firm's cost of capital and reduces state government spending.

Table 6.15 shows the micro-simulation results for the Neighborhood Assistance tax credit program from 1995 through 2010. Claims for this credit averaged \$1.8 million each year over the period. Because the credit may be claimed for a variety of community development programs and energy conservation projects, not all of which have a dollar for dollar credit allowance, the actual amount invested exceeded \$1.8 million on average each year over the period. As this tax credit program was ostensibly not intended to create jobs or new tax revenue, the results in Table 6.15 do not accurately reflect the benefit of this program. For example, we do not know how the investments were distributed across allowable projects and programs and therefore we do not know how many people were trained, educated, housing units rehabilitated, how much open space was acquired or how child care services were expanded and so on. Our model of this program increases the budgets of non-profits some of which provide social services as well as the budgets of towns that provide social and other services.

Table 6.15: Net Economic and Fiscal Impacts of the Neighborhood Assistance Tax Credit

Neighborhood Assistance	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$1,577,956	\$1,926,267	\$2,035,945	\$2,250,699	\$2,425,068	\$2,137,474	\$1,220,021	\$1,395,880	\$1,217,034	\$1,177,766	\$1,528,716	\$996,149	\$2,128,483	\$2,612,959	\$2,442,230	\$1,804,843	
0% Scenario																	
<i>Changes in:</i>																	
Total Employment	-26	-11	4	16	6	3	9	-10	-14	-17	-28	-15	-41	-39	-47	-14	
Total Non-Farm Employment	6	25	41	55	47	38	27	10	3	-1	-6	-2	-12	-12	-14	14	
GDP	-\$1,244,060	-\$237,004	\$816,628	\$1,798,286	\$1,455,734	\$1,598,632	\$2,211,855	\$1,071,969	\$1,019,193	\$760,000	\$51,333	\$919,436	-\$1,020,284	-\$836,492	-\$1,399,192	\$464,402	
State Revenues	-\$89,247	\$28,142	\$136,297	\$244,813	\$256,501	\$226,847	\$185,767	\$56,664	\$16,712	-\$25,826	-\$106,057	-\$63,685	-\$188,887	-\$227,402	-\$269,811	\$12,055	\$0.01
State Expenditures	-\$13,730	-\$70,355	-\$114,776	-\$136,807	-\$58,629	-\$45,369	-\$69,662	\$24,285	\$25,068	\$25,826	\$53,028	-\$54,587	\$84,999	\$18,950	\$38,544	-\$19,548	
Net State Revenue	-\$75,517	\$98,496	\$251,074	\$381,620	\$315,130	\$272,216	\$255,429	\$32,380	-\$8,356	-\$51,652	-\$159,085	-\$9,098	-\$273,887	-\$246,352	-\$308,356	\$31,603	
20% Scenario																	
<i>Changes in:</i>																	
Total Employment	-6	12	28	42	32	25	20	1	-5	-9	-17	-10	-25	-23	-29	2	
Total Non-Farm Employment	20	41	57	73	64	52	33	17	8	4	0	1	-2	-2	-2	24	
GDP	-\$446,586	\$735,530	\$1,816,581	\$2,885,621	\$2,570,946	\$2,520,920	\$2,607,472	\$1,495,114	\$1,329,804	\$1,070,000	\$564,659	\$1,162,505	-\$153,591	\$0	-\$447,741	\$1,180,749	
State Revenues	-\$6,865	\$126,638	\$243,900	\$352,818	\$373,758	\$332,709	\$255,429	\$129,518	\$83,561	\$43,043	-\$26,514	-\$9,098	-\$66,111	-\$94,751	-\$125,269	\$107,518	\$0.06
State Expenditures	-\$61,787	-\$105,532	-\$121,950	-\$136,807	-\$51,300	\$0	\$30,961	\$121,424	\$150,409	\$154,956	\$167,924	\$100,076	\$198,332	\$142,126	\$163,814	\$50,176	
Net State Revenue	\$54,921	\$232,170	\$365,850	\$489,625	\$425,058	\$332,709	\$224,468	\$8,095	-\$66,849	-\$111,912	-\$194,438	-\$109,174	-\$264,442	-\$236,877	-\$289,083	\$57,341	
50% Scenario																	
<i>Changes in:</i>																	
Total Employment	23	47	64	80	72	58	36	19	8	3	0	0	-1	-1	-1	27	
Total Non-Farm Employment	40	65	82	99	92	74	44	28	17	11	11	7	14	13	16	41	
GDP	\$803,057	\$2,157,556	\$3,319,011	\$4,453,894	\$4,260,790	\$3,886,785	\$3,265,634	\$2,253,015	\$1,881,139	\$1,602,000	\$1,331,568	\$1,596,859	\$1,155,225	\$1,276,751	\$1,195,469	\$2,295,917	
State Revenues	\$120,141	\$272,272	\$396,696	\$526,347	\$559,172	\$489,233	\$358,375	\$259,037	\$198,039	\$157,538	\$122,849	\$114,632	\$124,666	\$97,593	\$86,725	\$258,888	\$0.14
State Expenditures	-\$109,843	-\$143,523	-\$138,449	-\$125,286	-\$9,527	\$96,788	\$214,406	\$301,130	\$340,927	\$345,206	\$328,777	\$307,506	\$305,997	\$272,882	\$267,884	\$150,325	
Net State Revenue	\$229,983	\$415,796	\$535,145	\$651,634	\$568,699	\$392,445	\$143,969	-\$42,094	-\$142,889	-\$187,668	-\$205,927	-\$192,874	-\$181,332	-\$175,289	-\$181,159	\$108,563	
100% Scenario																	
<i>Changes in:</i>																	
Total Employment	73	105	123	144	137	112	63	47	31	23	27	15	36	34	42	68	
Total Non-Farm Employment	74	105	122	143	136	111	61	46	31	23	28	15	38	35	44	67	
GDP	\$2,759,262	\$4,601,151	\$5,808,061	\$7,092,774	\$7,031,793	\$6,218,855	\$4,306,824	\$3,432,180	\$2,756,675	\$2,380,000	\$2,556,364	\$2,092,509	\$3,060,852	\$3,092,818	\$3,615,511	\$4,053,709	
State Revenues	\$295,202	\$499,518	\$645,618	\$777,640	\$850,117	\$763,718	\$557,300	\$469,505	\$384,379	\$318,520	\$309,333	\$254,739	\$349,442	\$322,153	\$346,900	\$476,272	\$0.26
State Expenditures	-\$247,146	-\$253,277	-\$200,859	-\$165,609	-\$14,657	\$173,916	\$425,715	\$509,979	\$576,568	\$568,170	\$477,256	\$500,379	\$330,553	\$322,153	\$260,175	\$217,554	
Net State Revenue	\$542,349	\$752,795	\$846,477	\$943,248	\$864,774	\$589,802	\$131,585	-\$40,475	-\$192,189	-\$249,651	-\$167,924	-\$245,641	\$18,889	\$0	\$86,725	\$258,718	

Traffic Reduction Tax Credit

The credit is equal to 50% of the amount spent in a severe nonattainment area for the direct costs of traffic reduction programs and related services conducted in Connecticut in response to the provisions of CGS §§13b-38o, 13b-38p, 13b-38t, 13b-38v and 13b-38x not to exceed \$250 annually per employee. This credit is available for corporations employing 100 or more people located in a severe non-attainment area. Currently, no such area is designated in Connecticut.

Green Buildings Tax Credit

This credit is available for certain construction, renovation or rehabilitation projects. The project must meet specific criteria to be eligible for the credit. This credit is effective as of January 1, 2012 and therefore is not covered in this study as claim data sorted by NAICS code is not available from DRS yet. The analysis of this credit will be covered in the next report due in 2017.

Job Expansion Tax Credit

Businesses can be eligible for tax credits of \$500 per month for each new full-time job created. If the new employee meets certain conditions, the tax credit is increased to \$900 per month. These credits are available for each new employee hired between January 1, 2012 and prior to January 1, 2014 for a period of three years. Because claim data sorted by NAICS code is available only after with a two- to three-year lag, the analysis of this credit will be covered in the next report due in 2017.

The following three credits apply to the insurance industry exclusively. We regard these credits as deferred reimbursement of fees insurance firms pay as part of their membership in trade associations and reimbursement of their assessments by the Connecticut Insurance Department.

Insurance Department Assessment Credit

Certain local domestic insurance companies are allowed a credit against the insurance premiums tax in the amount of 80% of the Connecticut Insurance Department Assessment paid during the calendar year if their admitted assets do not exceed amounts specified in CGS §12-202.

We model this credit by reducing state government spending by the amount of the credit claimed each year. Table 6.16 shows the microsimulation results for the Insurance Department Assessment tax credit program. The annual average claim was \$905,310 from 2000 through 2010. This suggests that the Insurance Department Assessment averaged \$1.13 million each year over the period. This credit program did not intend to create jobs or increase tax revenue and the results in Table 6.16 do not reflect the benefit of the credit.

Connecticut Life and Health Insurance Guaranty Association Assessment (CLHIGA) Credit

One hundred percent of an assessment paid to the Connecticut Life and Health Insurance Guaranty Association (“Association”) by a member insurer is creditable against the member insurer’s insurance premiums tax. The credit is allowable over a period of five successive calendar years following the year the assessment was paid. Twenty percent of the assessment is allowable in each of the five successive calendar years. (Under prior law, 50% of the assessment was creditable and the credit was allowable in the year of payment.) This legislation applies to calendar years beginning on or after January 1, 2000. (cf. CGS §38a-866(h) as amended by PA 2000-174, §76).

A member insurer may transfer the credit for an assessment paid to the Association to an affiliate as defined in CGS §38a-1 (“a qualified transferee”). However, the credit may not be transferred in part. For example, if a member insurer transfers the credit to a qualified transferee, the credit is allowable over the same five-year period for the qualified transferee as it would have been allowable for the member insurer. A qualified transferee may not retransfer the credit.

We model this credit as a reduction in state spending with no effect on the insurance industry because we assume the credit acts as a reimbursement of an expense. Table 6.17 shows the microsimulation results for the Connecticut Life and Health Insurance Guaranty Association Assessment tax credit program. The annual average claim was \$112,789 from 2005 through 2010. This credit program did not intend to create jobs or increase tax revenue and the results in Table 6.17 do not reflect the benefit of the credit that appears to offset a business expense and reduce state revenue dollar for dollar.

Connecticut Insurance Guaranty Association Assessment (CIGA) Credit

One hundred per cent of an assessment paid to the Connecticut Insurance Guaranty Association (“Association”) by a member insurer is creditable against the member insurer’s insurance premiums tax. In all other respects, this credit is identical to the Connecticut Life and Health Insurance Guaranty Association Assessment above.

We model this credit as a reduction in state spending with no effect on the insurance industry because we assume the credit acts as a reimbursement of an expense. Table 6.18 shows the microsimulation results for the Connecticut Life and Health Insurance Guaranty Association Assessment tax credit program. The annual average claim was \$10,908,566 from 2005 through 2010. Claims were in the neighborhood of \$3-\$17 million over the period. This credit program did not intend to create jobs or increase tax revenue and the results in Table 6.18 do not reflect the benefit of the credit that appears to offset a business expense and reduce state revenue dollar for dollar.

Table 6.16: Economic and Fiscal Impacts of the Insurance Department Assessment Tax Credit

Insurance Department Assessment	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$981,433	\$1,018,575	\$1,130,438	\$1,000,475	\$810,731	\$928,314	\$951,108	\$674,081	\$805,210	\$752,736	\$905,310	
Changes in:												
Total Employment	-33	-33	-35	-29	-22	-24	-24	-15	-18	-16	-25	
Total Non-Farm Employment	-14	-14	-15	-12	-9	-10	-9	-5	-6	-5	-10	
GDP	-\$2,050,993	-\$2,139,925	-\$2,410,049	-\$2,028,680	-\$1,587,000	-\$1,786,375	-\$1,821,963	-\$1,138,769	-\$1,376,909	-\$1,230,169	-\$1,757,083	
State Revenues	-\$145,938	-\$156,353	-\$194,278	-\$178,820	-\$157,538	-\$176,762	-\$173,768	-\$127,499	-\$162,971	-\$159,959	-\$163,389	-\$0.18
State Expenditures	\$122,497	\$87,465	\$59,902	\$1,671	-\$59,400	-\$74,240	-\$81,880	-\$147,332	-\$135,494	-\$139,724	-\$36,653	
Net State Revenue	-\$268,436	-\$243,819	-\$254,180	-\$180,491	-\$98,139	-\$102,522	-\$91,888	\$19,833	-\$27,478	-\$20,236	-\$126,735	

Table 6.17: Economic and Fiscal Impacts of the Connecticut Life and Health Insurance Guaranty Association Assessment Tax Credit

Connecticut Insurance Guaranty	2005	2006	2007	2008	2009	2010	2011	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$12,584,676	\$15,884,835	\$17,036,154	\$10,612,726	\$11,085,145	\$5,719,472	\$3,436,953	\$10,908,566	
Changes in:									
Total Employment	-367	-454	-470	-274	-273	-120	-50	-287	
Total Non-Farm Employment	-160	-200	-205	-115	-109	-37	-3	-118	
GDP	-\$27,603,000	-\$35,106,372	-\$37,395,676	-\$22,030,457	-\$22,135,112	-\$9,018,630	-\$2,932,177	-\$22,317,346	
State Revenues	-\$1,923,170	-\$2,543,599	-\$2,840,336	-\$1,933,262	-\$2,015,348	-\$1,139,952	-\$670,692	-\$1,866,623	-\$0.17
State Expenditures	\$1,862,049	\$1,770,267	\$1,261,866	-\$385,330	-\$549,554	-\$1,588,031	-\$1,876,166	\$70,729	
Net State Revenue	-\$3,785,219	-\$4,313,867	-\$4,102,202	-\$1,547,931	-\$1,465,794	\$448,079	\$1,205,473	-\$1,937,352	

Table 6.18: Economic and Fiscal Impacts of the Connecticut Insurance Guaranty Association Assessment Tax Credit

Connecticut Insurance Guaranty	2005	2006	2007	2008	2009	2010	2011	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$94,187	\$84,936	\$98,954	\$106,146	\$132,786	\$118,944	\$153,570	\$112,789	
Changes in:									
Total Employment	-3	-3	-3	-3	-3	-2	-3	-3	
Total Non-Farm Employment	-1	-1	-1	-1	-1	-1	-1	-1	
GDP	-\$244,000	-\$172,478	-\$257,865	-\$217,222	-\$268,558	-\$204,842	-\$279,146	-\$234,873	
State Revenues	-\$16,356	-\$15,025	-\$22,745	-\$23,611	-\$39,795	-\$36,617	-\$41,364	-\$27,930	-\$0.25
State Expenditures	\$16,356	\$1,768	\$7,278	\$5,667	-\$7,580	-\$9,636	-\$1,970	\$1,698	
Net State Revenue	-\$32,713	-\$16,792	-\$30,023	-\$29,278	-\$32,215	-\$26,981	-\$39,395	-\$29,628	

Appendix A: Eliminated and Expiring Credits

Financial Institutions Tax Credit (administered by DECD; eliminated effective January 1, 2014)

The tax credit is granted to financial institutions that build and occupy a facility located in Connecticut of at least 900,000 square feet and create and maintain an average of 1,200 to 2,000 qualified employees in Connecticut. The credit is allowed for ten consecutive years, but this period may be extended for an additional five years if the taxpayer employs an average of at least 3,000 employees in the income year following the ten-year period. The credit is allowed for a maximum of 15 consecutive years. Depending on the number of qualified employees employed by the financial institution, the amount of the credit allowed to an eligible financial institution varies from 30% to 50% of its corporation business tax liability. The aggregate credit is limited to between \$72 million and \$120 million over the ten-year period for which it is claimed. If the credit is taken for the additional five-year period, the amount of the credit allowed to an eligible financial institution for years 11 through 15 is 25% of its corporation business tax liability and the aggregate credit is limited to \$145 million over the 15-year period.

The DECD commissioner initially certifies a firm's eligibility and each thereafter for years two through ten. For years 11 through 15, the DECD commissioner may certify the firm if it maintains an average of 3,000 qualified employees over this period. Qualified employees are determined from quarterly reports submitted to DECD.

Table A.1 shows the micro-simulation results for the Financial Institutions Tax Credit. Annual claims average \$36,047. Revenue earned per \$1 of credit is \$0.40.

Table A.1 Financial Institutions Tax Credit

Financial Institutions	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$100,762	\$2,556	\$0	\$839	\$0	\$184,219	\$0	\$0	\$36,047	
<i>Changes in:</i>										
Total Employment	-1	0	0	0	0	-5	0	0	-1	
Total Non-Farm Employment	0	0	0	0	0	-2	0	0	0	
GDP	-\$114,813	\$29,605	\$0	\$0	-\$16,169	-\$318,043	\$0	\$34,140	-\$48,160	
State Revenues	\$15,461	\$22,311	\$24,621	\$23,598	\$15,648	-\$3,589	\$9,001	\$9,154	\$14,526	\$0.40
State Expenditures	\$10,847	\$9,526	\$13,171	\$8,396	\$12,191	\$41,461	\$5,401	\$18,405	\$14,925	
Net State Revenue	\$4,614	\$12,785	\$11,449	\$15,201	\$3,457	-\$45,050	\$3,601	-\$9,251	-\$399	

This tax credit has been repealed effective January 1, 2014.

Hiring Incentive Tax Credit (eliminated effective July 1, 2013)

A tax credit may be applied against the tax imposed under Chapter 208 by firms that hire recipients of Temporary Family Assistance (TFA). An employer may claim the credit for \$125 for each full month during which a qualifying employee was employed up to \$1,500 per year per hire. Please refer to CGS §12-217y.

We increase employment in each industry claiming the credit by a number of new employees equal to 20%, 50% and 100% of the credit claimed divided by \$1,500 (amount permitted per qualifying employee). This reflects a range of hiring induced by the tax credit (the 100% case represents firms hiring recipients of benefits from the temporary family assistance program exclusively because of the program). We assume the new workers continue to work throughout the period 1997 through 2010 so that jobs accumulate over the period. We further adjust this figure to reflect a balance between full time and part-time employees because the REMI model requires full-time equivalents (FTEs) as input.²⁸ We assume there is a significant difference in wages paid to these workers and other full-time workers in the industries that hired them. We therefore adjust the compensation of the workers utilizing the certificates in these industries downward with respect to the industry average compensation. We assume the wages these newly hired workers earned were according the federal poverty wages in the relevant year for a family of four. The amount of the credit reduces the firm's cost of capital dollar for dollar because in this program we assume claiming firms used their increased profit in the most productive manner. We reduce state government spending each year by the amount of the opportunity certificate credit claimed.

Table A.2 reports the microsimulation results for the Hiring Incentive tax credit program. The annual average claim from 2000 through 2010 was \$25,251 with the largest claim of \$86,571 occurring in 2009 (there were no claims in 2006 or 2010). This program as modeled was successful in creating jobs and new tax revenue at each level of inducement. The credit was eliminated during the July 2013 session as the number of claims has been declining and other programs exist to incent job creation (such as the Job Expansion Tax Credit).

²⁸ Montgomery, Mark (1988). "Hours of Part-Time and Full-Time Workers at the Same Firm," *Industrial Relations*, vol. 27, no. 3, Fall. Montgomery finds that 20.2% of the national labor force consists of part-time workers.

Table A.2: Economic and Fiscal Impacts of the Hiring Incentive Tax Credit

Hiring Incentive	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$40,492	\$21,546	\$3,941	\$8,483	\$141	\$0	\$4,500	\$265	\$86,571	\$0	\$16,594	
0% Scenario												
<i>Changes in:</i>												
Total Employment	-1	-1	0	0	0	0	0	-1	-2	0	-1	
Total Non-Farm Employment	0	0	0	0	0	0	0	0	-1	0	0	
GDP	-\$53,581	-\$27,873	-\$14,105	\$14,560	-\$15,000	\$0	-\$48,614	-\$16,456	-\$201,418	\$0	-\$36,249	
State Revenues	-\$4,537	-\$6,192	-\$4,857	-\$1,671	-\$1,722	-\$1,768	-\$10,008	-\$12,278	-\$19,898	-\$12,527	-\$7,546	-\$0.45
State Expenditures	\$4,537	\$0	\$1,619	\$0	-\$1,722	-\$7,070	-\$10,008	-\$10,389	-\$7,580	-\$10,600	-\$4,121	
Net State Revenue	-\$9,074	-\$6,192	-\$6,476	-\$1,671	\$0	\$5,303	\$0	-\$1,889	-\$12,318	-\$1,927	-\$3,424	
20% Scenario												
<i>Changes in:</i>												
Total Employment	49	103	115	117	118	116	118	119	137	138	113	
Total Non-Farm Employment	45	92	102	105	105	103	104	104	122	122	100	
GDP	\$4,771,303	\$10,372,343	\$11,880,045	\$12,722,442	\$13,550,000	\$14,020,989	\$15,126,305	\$16,154,498	\$18,070,422	\$18,856,627	\$13,552,497	
State Revenues	\$288,096	\$615,352	\$718,018	\$782,963	\$822,986	\$869,667	\$919,788	\$952,936	\$1,079,211	\$1,139,952	\$818,897	\$49.35
State Expenditures	-\$181,478	-\$341,346	-\$288,988	-\$181,327	-\$81,782	\$18,560	\$88,249	\$147,332	\$108,016	\$194,649	-\$51,811	
Net State Revenue	\$469,573	\$956,698	\$1,007,006	\$964,290	\$904,768	\$851,107	\$831,540	\$805,604	\$971,195	\$945,303	\$870,708	
50% Scenario												
<i>Changes in:</i>												
Total Employment	63	118	130	135	135	134	139	139	179	181	135	
Total Non-Farm Employment	57	106	116	121	120	119	123	123	161	161	121	
GDP	\$6,356,586	\$12,648,672	\$14,069,000	\$15,054,828	\$15,932,661	\$16,723,883	\$18,222,312	\$19,009,979	\$23,392,209	\$24,247,730	\$16,565,786	
State Revenues	\$354,637	\$699,721	\$818,395	\$895,770	\$944,368	\$989,865	\$1,086,278	\$1,139,935	\$1,389,993	\$1,460,834	\$977,980	\$58.94
State Expenditures	-\$233,652	-\$390,884	-\$319,749	-\$214,751	-\$97,278	\$25,630	\$95,527	\$185,110	\$37,900	\$178,268	-\$73,388	
Net State Revenue	\$588,290	\$1,090,604	\$1,138,144	\$1,110,521	\$1,041,646	\$964,235	\$990,751	\$954,825	\$1,352,093	\$1,282,566	\$1,051,368	
100% Scenario												
<i>Changes in:</i>												
Total Employment	77	143	156	163	163	161	170	170	249	250	170	
Total Non-Farm Employment	70	128	139	146	146	143	151	151	224	225	152	
GDP	\$7,661,754	\$14,944,283	\$16,632,000	\$17,795,989	\$18,770,231	\$19,619,076	\$21,933,693	\$22,699,367	\$30,653,438	\$31,763,435	\$20,247,327	
State Revenues	\$434,034	\$841,368	\$981,912	\$1,080,439	\$1,156,140	\$1,198,444	\$1,332,829	\$1,385,488	\$1,846,692	\$1,948,422	\$1,220,577	\$73.56
State Expenditures	-\$288,096	-\$465,190	-\$376,413	-\$253,189	-\$97,278	\$57,448	\$130,099	\$254,053	-\$117,491	\$89,616	-\$106,644	
Net State Revenue	\$722,130	\$1,306,558	\$1,358,325	\$1,333,628	\$1,253,418	\$1,140,996	\$1,202,730	\$1,131,435	\$1,964,183	\$1,858,806	\$1,327,221	

Computer Donation Tax Credit (eliminated effective January 1, 2014)

A tax credit may be applied against the taxes imposed under Chapters 207, 208, 209, 210, 211, or 212 for the donation of new or used computers to a local or regional board of education or a public or nonpublic school. The used computers may not be more than two years old at the time of donation. The amount of the tax credit granted to a business firm cannot exceed \$75,000 annually. The amount of the credit cannot exceed 50% of the fair market value at the time of donation. Please refer to CGS §10-228b.

We assume the cost of capital in the education sector decreases by twice the amount of the credit in the years claimed. The amount of the credit reduces the claiming firm's cost of capital. We reduce state government spending each year by the amount of the computer donation tax credit claimed.

Table A.3 reports the microsimulation results for the Computer Donation tax credit program. The annual average claim from 2001 through 2010 was \$6,798 with the largest claim of \$46,764 occurring in 2001 (there were no claims in 2003, 2004, 2007 and 2008). The claims in 2005 and 2006 were \$250 and \$340. This suggests that in 2001 computers worth about \$94,000 were donated to a local or regional board of education or a public or nonpublic school. This credit was not intended to create jobs or increase tax revenue and the results reported in Table A.3 do not realistically reflect the benefit of this program. We do not know how many computers were donated or how many schools benefited. The claims for most years suggest the number of computers donated was quite small.

Displaced Worker Tax Credit (eliminated effective July 1, 2013)

There are two distinct tax credits available for displaced workers:

Displaced Electric Worker Credit: \$1,500 for each displaced electric worker that is hired. This credit is available to electricity suppliers and is allowed in the income year in which the displaced electric worker first completes six months of full-time employment. Please refer to CGS §§12-217bb and 16-1.

Displaced Worker Credit: \$1,500 for each displaced worker hired by an employer on or after January 1, 2006. The credit is allowed for the income year during which the displaced worker first completes 12 months of full-time employment. Please refer to CGS §12-217hh.

We increase direct employment in the claiming industries by the credit amount divided by \$1,500. There is no inducement range because we assume firms would not have hired displaced workers absent the credit. The amount of the credit reduces the firm's cost of capital. We reduce state government spending each year by the amount of the credit claimed.

Table A.4 reports the microsimulation results for the Displaced Worker tax credit program. The annual average claim from 2003 through 2010 was \$5,712 with the largest claim of \$24,000 occurring in 2009. This credit intended to put displaced workers whose industries were restructured back to work. The credit amounts suggest that sixteen displaced workers were hired in 2009 and three displaced workers were hired in 2010. The reduction in the cost of capital has a relatively significant effect. As modeled, the results show that the revenue earned per dollar of tax credit was \$36.35 and in that regard the program has paid for itself.

The credit was eliminated during the July 2013 session as the number of claims has been declining and other programs exist to incent job creation (such as the Job Expansion Tax Credit).

Table A.3: Economic and Fiscal Impacts of the Computer Donation Tax Credit

	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Computer Donation											
Total Claims	\$46,754	\$0	\$0	\$250	\$340	\$0	\$0	\$1,593	\$12,249	\$6,798	
Changes in:											
Total Employment	0	1	0	0	0	-1	-1	0	-1	0	
Total Non-Farm Employment	1	0	0	0	0	0	0	-1	0	0	
GDP	\$0	\$28,680	\$14,851	-\$15,300	-\$31,313	-\$32,233	-\$16,785	-\$33,570	\$0	-\$9,519	
State Revenues	\$7,353	-\$5,072	-\$6,980	-\$10,787	-\$13,017	-\$15,300	-\$19,828	-\$13,956	-\$6,037	-\$9,292	-\$1.37
State Expenditures	-\$1,616	-\$5,072	\$0	-\$5,394	-\$14,863	-\$15,300	-\$17,855	-\$23,850	-\$12,075	-\$10,669	
Net State Revenue	\$8,970	\$0	-\$6,980	-\$5,394	\$1,846	\$0	-\$1,972	\$9,894	\$6,037	\$1,378	

Table A.4: Economic and Fiscal Impacts of the Displaced Worker Tax Credit

	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Displaced Worker										
Total Claims	\$93	\$0	\$0	\$1,500	\$6,000	\$9,605	\$24,000	\$4,500	\$5,712	
Changes in:										
Total Employment	0	0	0	3	14	29	56	65	21	
Total Non-Farm Employment	0	0	0	3	13	25	50	58	19	
GDP	\$14,348	\$14,811	\$0	\$438,633	\$2,209,240	\$4,218,507	\$6,717,817	\$8,539,989	\$2,769,168	
State Revenues	\$1,544	\$1,594	\$1,642	\$37,086	\$182,204	\$324,247	\$491,566	\$621,225	\$207,638	\$36.35
State Expenditures	-\$1,544	\$0	-\$1,642	-\$23,600	-\$85,028	-\$142,309	-\$272,892	-\$246,285	-\$96,662	
Net State Revenue	\$3,087	\$1,594	\$3,283	\$60,687	\$267,232	\$466,555	\$764,458	\$867,509	\$304,301	

Clean Alternative Fuels Tax Credit (eliminated effective January 1, 2008.)

A tax credit could be applied against the taxes imposed under Chapters 208, 209, 210, 211, or 212 of the Connecticut General Statutes in an amount equal to 10% of the expenditures paid or incurred for the difference between the purchase price of a vehicle that was exclusively powered by a clean alternative fuel and the manufacturer's suggested retail price of a comparably-equipped vehicle that was not powered by a clean alternative fuel. Please reference CGS §12-217i.

We assume the credit induced firms to buy a motor vehicle using LNG, CNG, LPG or other alternative fuel. Further, we assume that firms purchased 20%, 50% or 100% more alternative fuel vehicles than conventional fuel vehicles because of the credit and correspondingly, we increase (automobile) retail sales by 20%, 50% and 100% of ten times the credit. The amount of the credit reduces the firm's cost of capital by 80%, 50% and 0% of the credit because we assume the firm was induced to purchase 20%, 50% and 100% of alternative fuel vehicles because of the credit. We reduce state government spending each year by the amount of the credit claimed for clean alternative fuels.

Table A.5 shows the micro-simulation results for the clean alternative fuels tax credit program. The average credit claimed during the life of the program (1995 through 2010) was \$189,199. However, firms claimed 96% (\$2,710,726) of the total in the first six years of the program after which claims declined precipitously. The total amount claimed over the life of the program was \$2,837,979 suggesting that several alternative fuel vehicles were purchased whose total price difference was \$28,379,790 relative to conventional fuel vehicles. Because this program ostensibly induced the purchase of alternative fuel vehicles rather than conventional fuel vehicles to reduce pollution and we have no knowledge of how many vehicles were purchased or what their reduction in emissions was, the reported results do not realistically represent the benefit to the state of this credit program.

Grants to Higher Education Credit (eliminated effective July 1, 2013)

Firms can claim a credit for grants to institutions of higher education for research and development related to advancements in technology. Firms qualifying for this credit had to make grants to institutions of higher learning for research and development for three immediately preceding years in order to claim a credit in year four if their most recent grant was greater than the average of the three preceding grants. Please refer to CGS §12-217l.

The credit is 25% of the excess grant amount. Under the three scenarios considered, we assume that 20%, 50% and 100% of the credit claimed represents incremental grants to higher education from the industries claiming the credit.

For modeling purposes, we increase student demand for higher education by 70% and for supplies and equipment (represented as retail trade sales) by 30% of the incremental grants.²⁹ The amount of the credit reduces the firm's cost of capital by 80%, 50% and 0% of the credit because we assume the firm would have granted 20%, 50% and 100% of the credits claimed to institutions of higher education for research and development because of the credit. We reduce state government spending each year by the amount of the grants to higher education credit claimed.

Table A.6 reports the micro-simulation results for the Grants to Higher Education tax credit program. From 1995 through 2010, the annual average claim was \$48,288 implying that the annual average grants to higher education were on average \$193,152 more each year over the period 1995 through 2010. However, closer examination of the claims in row 2 of Table A.6 shows the large variation in claims during the period and in 2000 and 2006 there were no claims. The data does not indicate the total amount provided to institutions of higher learning for research and development; therefore we do not know the percentage increase over the baseline grant amount that the tax credit induced. The inducement levels we model instead capture a range of grant increments firms would have conferred in any case.

²⁹ This breakdown is based on data provided by the Office of the Vice President for Research at the University of Connecticut.

Table A.5: Economic and Fiscal Impacts of the Clean Alternative Fuels Tax Credit

Clean Alternative Fuels	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$913,290	\$371,450	\$862,174	\$173,585	\$267,772	\$122,455	\$5,225	\$75,536	\$23,819	\$3,429	\$6,001	\$1,958	\$7,511	\$1,903	\$1,871	\$189,199	
20% Scenario																	
<i>Changes in:</i>																	
Total Employment	21	15	19	8	8	4	1	1	0	0	-1	-2	-2	-1	-2	5	
Total Non-Farm Employment	37	21	33	11	12	6	1	2	0	-1	-1	-1	-1	-1	-1	8	
GDP	\$851,703	\$760,865	\$979,121	\$650,729	\$597,617	\$415,469	\$329,081	\$215,334	\$177,631	\$15,000	\$31,826	\$0	\$50,466	-\$34,120	\$0	\$336,048	
State Revenues	\$48,743	\$69,651	\$55,954	\$43,922	\$32,246	\$14,367	\$8,514	-\$1,619	-\$8,356	-\$14,635	-\$18,560	-\$29,113	-\$32,111	-\$34,110	-\$26,018	\$7,258	\$0.04
State Expenditures	-\$61,787	-\$5,628	-\$4,304	\$45,362	\$47,636	\$57,468	\$55,730	\$47,760	\$45,958	\$24,965	\$8,838	-\$7,278	-\$23,611	-\$36,005	-\$36,617	\$10,566	
Net State Revenue	\$110,529	\$75,279	\$60,258	-\$1,440	-\$15,390	-\$43,101	-\$47,216	-\$49,379	-\$54,314	-\$39,600	-\$27,398	-\$21,835	-\$8,500	\$1,895	\$10,600	-\$3,307	
50% Scenario																	
<i>Changes in:</i>																	
Total Employment	83	37	72	16	21	8	-2	2	-1	-3	-3	-3	-3	-2	-2	15	
Total Non-Farm Employment	95	41	83	18	24	9	-2	3	-1	-3	-3	-3	-2	-2	-2	17	
GDP	\$3,650,838	\$1,745,659	\$3,585,665	\$956,855	\$1,182,465	\$496,279	-\$13,487	\$128,824	-\$14,560	-\$198,000	-\$157,078	-\$209,251	-\$100,931	-\$168,399	-\$102,981	\$718,793	
State Revenues	\$218,999	\$147,745	\$228,836	\$100,085	\$101,867	\$58,980	\$27,865	\$29,142	\$10,863	-\$1,722	-\$7,070	-\$11,827	-\$21,722	-\$27,478	-\$10,600	\$56,264	\$0.30
State Expenditures	-\$233,416	\$21,810	-\$60,258	\$189,370	\$160,496	\$211,724	\$230,660	\$180,516	\$173,806	\$146,347	\$106,057	\$81,880	\$45,333	\$16,108	\$5,782	\$85,081	
Net State Revenue	\$452,415	\$125,935	\$289,093	-\$89,285	-\$58,629	-\$152,744	-\$202,795	-\$151,375	-\$162,943	-\$148,069	-\$113,127	-\$93,707	-\$67,055	-\$43,585	-\$16,381	-\$28,817	
100% Scenario																	
<i>Changes in:</i>																	
Total Employment	185	73	162	30	44	15	-7	4	-4	-6	-5	-5	-3	-2	0	32	
Total Non-Farm Employment	191	76	168	32	46	16	-7	5	-3	-6	-4	-4	-2	-2	-1	33	
GDP	\$8,298,520	\$3,441,465	\$7,896,296	\$1,455,357	\$2,181,899	\$642,966	-\$576,341	\$71,465	-\$399,912	-\$580,000	-\$407,581	-\$435,411	-\$234,775	-\$235,538	-\$136,561	\$1,398,790	
State Revenues	\$460,653	\$267,348	\$517,212	\$213,131	\$226,454	\$144,426	\$78,177	\$114,138	\$89,410	\$72,313	\$82,194	\$72,782	\$87,833	\$87,171	\$97,325	\$174,038	\$0.92
State Expenditures	-\$542,349	\$60,505	-\$168,578	\$411,861	\$351,040	\$465,793	\$527,113	\$432,268	\$444,543	\$408,910	\$347,337	\$292,949	\$248,387	\$216,979	\$192,722	\$245,965	
Net State Revenue	\$1,003,002	\$206,843	\$685,790	-\$198,730	-\$124,586	-\$321,367	-\$448,936	-\$318,130	-\$355,133	-\$336,598	-\$265,142	-\$220,167	-\$160,554	-\$129,809	-\$95,398	-\$71,928	

Table A.6: Economic and Fiscal Impacts of the Grants to Higher Education Tax Credit

	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average
Grants to Higher Education																
Total Claims	\$250	\$3,804	\$45,843	\$87,076	\$319,005	\$0	\$5,446	\$2,042	\$1,512	\$229,755	\$0	\$21,659	\$321	\$605	\$7,002	\$48,288
20% Scenario																
<i>Changes in:</i>																
Total Employment	0	0	0	-2	-7	0	2	1	0	-5	0	-1	0	0	0	-1
Total Non-Farm Employment	0	0	1	0	-1	1	2	1	0	-1	0	0	0	0	0	0
GDP	\$0	\$0	\$0	-\$25,929	-\$402,668	-\$351,000	\$192,413	\$128,824	\$103,861	-\$351,000	\$94,452	\$15,852	\$50,466	\$0	\$34,700	-\$49,600
State Revenues	-\$7,552	-\$7,739	\$1,435	-\$10,801	-\$24,917	-\$11,342	-\$4,644	-\$15,380	-\$14,205	-\$39,600	-\$18,560	-\$19,105	-\$23,611	-\$23,688	-\$20,236	-\$14,368
State Expenditures	-\$7,552	-\$7,739	-\$5,739	\$0	\$18,321	-\$23,441	-\$29,413	-\$30,761	-\$33,424	-\$14,635	-\$59,215	-\$50,038	-\$53,833	-\$54,008	-\$46,253	-\$20,303
Net State Revenue	\$0	\$0	\$7,174	-\$10,801	-\$43,239	\$12,099	\$24,769	\$15,380	\$19,219	-\$24,965	\$40,655	\$30,933				\$5,935
50% Scenario																
<i>Changes in:</i>																
Total Employment	0	0	0	-1	-5	1	1	1	0	-4	0	0	0	0	0	0
Total Non-Farm Employment	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0
GDP	\$0	\$0	-\$12,749	-\$63,818	-\$376,703	-\$320,400	\$123,450	\$114,813	\$74,061	-\$320,400	\$78,334	\$32,233	\$100,492	\$33,570	\$68,281	-\$31,256
State Revenues	-\$3,913	-\$1,337	\$0	-\$2,736	-\$15,390	\$7,183	\$8,824	\$4,614	\$0	-\$18,078	\$6,717	\$3,457	\$3,589	\$3,601	\$7,323	\$257
State Expenditures	-\$3,913	-\$1,337	-\$2,726	\$0	\$16,782	-\$10,132	-\$10,372	-\$9,228	-\$9,526	\$3,271	-\$25,277	-\$19,105	-\$19,833	-\$19,898	-\$9,154	-\$8,030
Net State Revenue	\$0	\$0	\$2,726	-\$2,736	-\$32,173	\$17,316	\$19,196	\$13,842	\$9,526	-\$21,349	\$31,994	\$22,563	\$23,422	\$23,498	\$16,478	\$8,287
100% Scenario																
<i>Changes in:</i>																
Total Employment	0	0	0	-1	-3	0	0	0	0	-2	0	0	0	0	0	0
Total Non-Farm Employment	0	0	0	1	3	0	0	0	0	2	0	0	0	0	0	1
GDP	\$0	\$0	-\$63,580	-\$63,818	-\$350,738	-\$335,700	\$0	\$0	\$14,851	-\$335,700	\$31,313	-\$32,233	\$33,461	-\$33,570	\$0	-\$75,714
State Revenues	\$0	\$0	-\$2,726	-\$5,472	-\$22,352	\$4,310	\$2,941	\$3,076	\$4,763	-\$16,443	\$3,358	\$0	\$1,794	\$5,401	\$5,493	-\$1,057
State Expenditures	\$0	\$0	\$4,089	\$4,104	\$12,605	\$1,437	\$0	-\$1,538	\$3,175	\$6,543	-\$13,522	-\$8,643	-\$5,383	-\$3,601	\$3,662	\$195
Net State Revenue	\$0	\$0	-\$6,815	-\$9,576	-\$34,957	\$2,873	\$2,941	\$4,614	\$1,588	-\$22,985	\$16,881	\$8,643	\$7,178	\$9,001	\$1,831	-\$1,252

SBA Guaranty Fee Tax Credit (eliminated effective January 1, 2014).

A tax credit is allowed against the Connecticut corporation business tax in an amount equal to the amount paid during the income year by a small business to the federal Small Business Administration as a fee to obtain guaranteed financing. Effectively, this law reduces the cost of capital to the borrowing firms by the amount of the credit they claim. Accordingly, we reduce the cost of capital to the firms making claims on this credit by the amount of the claim. We reduce state government spending by the amount of the credit claimed for SBA guaranty fees. Please refer to CGS §12-217cc.

Table A.7 shows the microsimulation results for the SBA Guaranty Fee tax credit program. The average annual claim from 1999 through 2010 was \$44,399. This credit was likely not intended to create new jobs or generate new tax revenue. Rather, it helped make possible guaranteed financing from the federal Small Business Administration. We do not know how much financing was made possible by this credit program for how many small businesses and therefore the results reported in Table A.7 do not realistically represent the benefit of the tax credit.

Qualified Small Business Job Creation Tax Credit (Replaced with the Job Expansion Tax Credit, effective January 1, 2012)

An employer with less than 50 employees in Connecticut may earn a tax credit equal to \$200 per month for hiring a Connecticut resident after May 6, 2010. Total credits claimed in 2010 were \$14,223 (no claims were filed in any other year). As only one year of claims exist and the tax credit has since been eliminated, we do not model the impact of this credit, which would not be much more than the approximately 6 direct jobs that would have resulted in the claim amount. The majority of these jobs were created in the Miscellaneous Manufacturing sector, which claimed \$12,876 in 2010.

Vocational Rehabilitation Job Creation Tax Credit (Replaced with the Job Expansion Tax Credit, effective January 1, 2012)

An employer may earn a tax credit equal to \$200 per month for hiring a new employee who is receiving rehabilitation services from the Department of Social Services or from the Board of Education and Services for the Blind. The new employee must be hired prior to January 1, 2012 to work at least 20 hours per week for 48 weeks of a calendar year.

No claims have been filed for this tax credit.

Table A.7: Economic and Fiscal Impacts of the SBA Guaranty Fee Tax Credit

SBA Guaranty Fee	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010	Annual Average	Revenue earned per \$1 of credit
Total Claims	\$6,829	\$20,128	\$2,942	\$3,101	\$239,602	\$178,791	\$893	\$33,328	\$991	\$0	\$1,788	\$44,399	
<i>Changes in:</i>													
Total Employment	0	-1	0	0	-6	-3	1	0	1	1	0	-1	
Total Non-Farm Employment	0	0	0	0	-1	0	1	1	1	0	0	0	
GDP	\$0	-\$13,439	\$0	\$0	-\$310,999	-\$152,600	\$172,272	\$48,402	\$133,953	\$67,139	\$136,673	\$7,400	
State Revenues	\$0	\$0	\$0	-\$1,538	-\$25,486	-\$13,171	\$3,358	\$5,186	\$8,972	\$12,697	\$10,985	\$91	\$0.00
State Expenditures	\$1,392	\$1,437	\$0	-\$3,076	\$27,074	\$6,543	-\$28,635	-\$13,920	-\$14,450	-\$7,201	\$5,493	-\$2,304	
Net State Revenue	-\$1,392	-\$1,437	\$0	\$1,538	-\$52,560	-\$19,714	\$31,994	\$19,105	\$23,422	\$19,898	\$5,493	\$2,395	

Appendix B: A Literature Review of the Economic Impact of Corporate Tax Policy Changes

This review of relevant literature provides insight into the experiences of states that have changed their tax policy as it relates to firms and explicates some theoretical issues of corporate taxation.

Fundamentally, the imposition of taxes changes the returns to labor, capital, savings, and the quantities of goods and services consumed. Considering their direct impact, increased taxes reduce returns to labor, capital, savings, and reduce consumption, and individuals and firms reduce corresponding productive and consumption activity. Reduced taxes have the opposite effect. Some taxes are essential to provide public goods that the private sector could or would not produce, such as national defense, transportation infrastructure, and education for all people. However, researchers have shown that public investment makes private capital more productive (Aschauer 1989, Munnell 1990, 1992), because, among other things, it reduces transaction costs. These public expenditures over time may offset the direct impact of taxes. Taxes also influence behavior by creating incentives or disincentives in specific areas such as pollution abatement, use of clean fuels, job training, and child care. Certain taxes on businesses may be passed along to consumers in some amount depending on their responsiveness to price changes. There are obviously several other costs firms in particular must bear. These include regulatory costs, health insurance costs, environmental compliance costs, unemployment insurance costs, and workmen's compensation costs. In a recent study for example, the Small Business Administration finds that federal regulatory burdens fall disproportionately on small firms (Crain, et al., 2001), and, within that group, the manufacturing sector bears the heaviest burden. Barrow (1998) supports these findings in his survey of the state dependency model. Relatively small firms are tied more closely to the competitive (local) market than relatively larger oligopolistic or monopolistic firms that are more insulated from market volatility. The latter large firms seek and enjoy long-term stability and not necessarily competitive advantage as do their smaller counterparts. Because of their ostensibly more secure and stable market segments, larger firms' viability is less likely to be threatened by government-mandated costs. Clearly, studies such as Barrow and Crain et al. inform public policy as states work to improve the climate for their core industries.

Barrow (1998) nicely summarizes the theoretical arguments undergirding the role of the state vis-à-vis business. The essential idea is that the state (that is, any jurisdictional political entity) has a vested interest in maintaining a 'healthy' business climate that will maintain and grow its revenues from taxes. Businesses depend on the state to create tax (including mandated costs), spending, and regulatory policies that help them grow. In a democratic society, should the state not produce the desired business climate, Barrow argues, its elected functionaries will be voted out of office, although Williams and Collins (1997) suggest that business in general faces a serious collective action problem in so doing. Williams and Collins (1997) agree in general with the proposition that business has power over public policy, but its strength and mechanisms of operation are not clear.

This interdependency then, in its extreme, produces jurisdictions with low taxes, low employee mandates such as minimum wages, unemployment insurance, workmen's compensation, and family leave; minimal social regulation and environmental protection; right-to-work laws to protect a free labor market, and correspondingly low wages. This neoclassical, laissez-faire view of the economy would promote business expansion in such jurisdictions, while in others where the climate was less favorable, business investment and employment and hence tax revenues would falter in the long run. This model further suffers, as all neoclassical models do, from the assumption that business managers are perfectly rational as they exclusively seek to maximize profit or minimize costs, that they have no uncertainty or ambiguity regarding location decisions, and that they clearly recognize a favorable business climate. Further, the only distinguishing characteristic of different jurisdictions is their mandated costs, not their tax or spending structures. The model ignores workforce quality and availability, transportation and communication infrastructure, and several other elements critical to business success. As a result, indices such as the Grant Thornton index failed to indicate actual, favorable regions because they incorporate only variables to measure neoclassical characteristics as in Barrow's explication of the model.

Barrow (1998) points out that the problem with this formulation is that it neglects the complex reality of business location decision making as has been studied in business colleges. A growing business location analysis and site selection literature suggests that such decisions take many factors into account such as the quality and availability of skilled labor and the transportation and communication infrastructure. This suggests that transaction costs matter greatly in an imperfectly competitive and 'frictionful' market. Such frictions include search costs and negotiation and enforcement costs among others. Taxes and fees that firms pay to support public infrastructure can be regarded as transaction costs in a general sense as they are a cost of creating and using markets. One can divide public infrastructure into economic overhead capital and social overhead capital. The former category includes roads, bridges, seaports, airports, waterways, water treatment, and distribution and mass transit. Social overhead capital includes public education at all levels, public health facilities, job training, and public safety facilities. The public sector usually makes these investments as they are too costly and too uncertain for private investors. These investments are often nonrivalrous and nonexclusive, and thus their returns may be below requisites because private firms cannot capture all the benefits that accrue through public use.

Empirical studies by Aschauer (1989) and Munnell (1990, 1992) among others have confirmed that such public investment positively affects private output, investment and productivity.

Firms once located in a region tend to develop networks of appropriate workers, communication and transportation that become customized to their purposes. They tend to expand in the same location to continue to take advantage of these specialized structures and relationships with local institutions and

services that have emerged in their support. Industrial clusters and districts emerge and are self-sustaining given that the business climate does not deteriorate appreciably; otherwise, there is relocation to perceived better business climates. Empirical evidence has shown that taxes and fees are not the primary factors influencing location; high quality public infrastructure is quite important. There is confusion about whether such socialized (publicly provided) factors of production are regarded as costs or benefits (investments with a positive return), but the multifarious business climate rankings suggest that taxes and fees are only part of the complex location decision calculus. Adding to the complexity is uncertainty about future changes in policy; governments do not necessarily adopt time consistent policies (Williams and Collins, 1997).

Durbin (2001) reviews recent trends in state corporate income taxes. He finds that nationwide state corporate income tax revenue as a fraction of domestic corporate profits rose from slightly more than 2% in 1959 to more than 12% in 1986. This proportion has declined steadily since 1986 to just under 6% in 1996. Since then the trend has slowed considerably. The national average tax rate of 11.2% in 1986 declined to 9.1% in 1991 and further to 6.2% in 1996. The increase in the 1959-1986 period is primarily due to the increase in the number of states imposing corporate income taxes. The decrease is more problematic. Three non-mutually exclusive factors seem to be responsible: measurement errors having to do with the emergence of S corporations; the growth and sophistication of aggressive tax planning; and, actions of state policy makers. S corporation net income is taxed at the shareholder level and resulting income taxes are personal income taxes. The growing share of S corporation income taxes as personal income taxes reduces the effective corporate profits tax rate.

Durbin (2001) cites UConn Professor Richard Pomp who notes that three factors have reduced the corporate income burden: increasing attention by CEOs and CFOs to state tax matters; widespread and increasing use of tax incentives by state legislatures and economic development officials; and, increasingly sophisticated and aggressive tax planning strategies. Two federal tax changes, ERTA (1981) and TRA (1986), stimulated increased corporate attention because they first lowered federal marginal tax rates on corporate net income, which however increased the after-tax cost of state taxes. TRA 86 eliminated or reduced the effectiveness of several loopholes. Whereas previously the firm's main concern was tax compliance, it now focused on minimizing multi-state tax liabilities.

The decade of the 1990s first saw a recession followed by almost ten years of high growth. State budgets suffering deficit in the first years of the decade enjoyed surpluses later. Between 1989 and 1993 corporate income tax increases averaged \$493.6 million, while between 1994 and 1999 reductions in such taxes averaged \$541.7 million. During this latter period, no enacted annual tax change exceeded 7% of total corporate tax revenues.

Durbin (2001) discusses the tax rate cuts, incentives and structural changes (e.g., three factor to single factor) that many states use to retain and expand existing firms and attract new ones. He cites an

analyst who estimates that the increased use of incentives has resulted in the reduction of the contribution of all business taxes from one half of state tax revenue in the 1950s to one quarter in 1990. Mazerov (2001) argues that the move from three factor to single factor corporate tax structure in several states has not improved economic growth, especially as this structure is not uniform across the nation and therefore creates winners and losers. Moreover, the loss in revenue has reduced public investment. Mazerov cites abundant research that shows that economic development (e.g., job and firm creation) is not statistically related to low business taxes and that other factors mentioned above are more important.

Durbin (2001) suggests that despite the several reasons for the reduced role of corporate income taxes in state tax structures, the underlying cause is competition among states for increasingly mobile business capital. He cites Oakland and Testa (1995) who do not dispute interstate competition. However, they believe the relative decline in the importance of business taxes and the rise of personal income taxes in relative importance in state budgets is proper given the increasing role that public services play in benefiting individuals directly and firms indirectly. Firms benefit by having a well-educated, healthy, and safe workforce. Workers that are more productive earn more and are taxed more heavily than lower productive workers are. Thus, ostensibly, states can make up in personal taxes what they forgo in corporate taxes if they spend appropriately on infrastructure. This echoes Barrows' (1998) arguments that there are factors other than taxes that have greater impact on job creation and retention.

Durbin (2001) references Wasylenko (1997) who suggests that state policymakers should maintain a stable business tax climate with low rates and broad bases that can efficiently support the level and types of public services desired by individuals and firms, rather than ad hoc, competitive tax reductions.

Durbin points out that other analyst suggest that over-reliance on tax reductions as the preferred means to attract and retain mobile business capital often leads to over dependence on these means. This improper weight on tax-based incentives may lead to sub-par provision of public services that actually retards development. Johnson (1997) acknowledges the argument that a tax cut will lead to economic growth, which will in turn lead to a higher quality of life. Although there is some evidence that this statement is true if taxes could be cut without accompanying reductions in public services, studies also show that increases in public services can lead to economic growth. Because tax cuts often come at the expense of public services, it is not clear that the net effect will help a state's economy. Therefore, comparisons of state tax levels that ignore the level of public services needed and demanded by a state's residents provide little useful information to policymakers.

Tannenwald (1996) concedes states are more concerned than ever before about their business tax climate. Over the previous two decades, profound technological and political changes have enhanced

employers' geographic mobility and extended their geographic range, thereby intensifying economic competition both within the United States and throughout the world. This study ranks the business tax climate of 22 states, including the six within New England. It finds only modest differences in business tax climate among most states. Within the region, New Hampshire and Massachusetts have the most attractive business tax climates. The study also estimates the importance of business tax climate in determining where manufacturers invest in plant and equipment. Business tax climate exerts only a small, highly uncertain effect on such investment. Tannenwald (1996) suggests that states may be more likely to stimulate their economies by enhancing public services valued by business.

Carroll and Wasylenko (1994) examine the effect of state and local government fiscal variables on states' employment and personal income growth and find substantial effects during the 1970s. However, when they estimate similar models for the 1980s, the results reveal that the effect of government fiscal variables on subnational growth has waned. The authors pool cross-section and time-series data for the 1967-1988 period to test for the presence of a structural change in the relationship between state and local fiscal behavior and subnational economic growth. Using a switching regression model, they uncover evidence of structural changes between 1976 and 1983. In particular, their results suggest that fiscal variables influenced manufacturing employment in states more significantly during the 1970s than during the 1980s. Moreover, the results indicate that government fiscal variables had little impact on employment changes in non-manufacturing industries in either the 1970s or the 1980s.

Fisher and Peters (1998) investigate the actual value of economic development incentives to firms, and the spatial pattern of incentives, in the twenty-four largest manufacturing states in the United States and in a random sample of 112 cities within those states. They use the hypothetical firm method to measure the value of competitive incentives to typical manufacturing firms and examine the menu of incentives that states and cities offer and the difference those incentives make to a firm's income. The authors consider the effects of taxes and incentives on the spatial distribution of investment returns. They examine the implications of the findings for public policy at the local, state, and national level.

Goss and Phillips (2001) ask whether the returns to business tax incentives differ according to the initial economic conditions of the area providing tax relief. Past research has provided conflicting answers to this question. Bartik (1997) concluded that rates of return to business tax incentives are likely to be greater for less affluent areas than for wealthier areas offering equivalent incentives. In contrast, Fisher and Peters (1998) determined that tax incentives tend only to offset higher taxes on businesses located in low-income areas. This study examines this issue using a unique data set that allows for a fresh look at this issue. Goss and Phillips (2001) find that the returns to subsidized

investment are greater in lower unemployment and higher income areas. This suggests that tax incentives reinforce pre-existing economic differences across such areas.

Goss and Phillips (1999) assert a lack of detailed data on state tax incentive programs has limited the assessment of their economic impacts. However, in 1987, the Nebraska legislature, as part of its new business tax incentive initiative, required that the state Department of Revenue collect data on all business tax incentive agreements and report findings yearly. Nebraska's legislative mandate produced a unique data set for assessing the impact of a business tax incentive program. Using this data, the authors evaluate business tax incentives across Nebraska's 93 counties from 1987 through 1995 and conclude that qualifying business investment:

- (a) had a positive and statistically significant impact on economic growth for low-unemployment counties,
- (b) had no statistically significant impact on economic growth for high-unemployment counties, and
- (c) tended to be undertaken in areas with historically higher investment activity, thus contributing to greater economic performance differences among counties in the state.

Holmes (1998) provides new evidence that state policies play a role in the location of industry. The paper classifies a state as pro-business if it has a right-to-work law and anti-business if it does not. The author finds that, on average, there is a large, abrupt increase in manufacturing activity when one crosses a state border from an anti-business state into a pro-business state.

Mullen and Williams (1994) analyze the impact of state and local tax structures on state economic performance. Specifically, growth rates in Gross State Product over the 1969-1986 period are related to several measures of a state's marginal tax environment in addition to more traditional growth determinants. Mullen and Williams derive estimates of marginal tax rates for individual states and utilized alternately with other tax climate surrogates in explaining variations in economic growth. They report both output and productivity equations in order to distinguish separate impacts resulting from taxation; the endogeneity problem is also addressed in this fashion. Their findings suggest that, after controlling for overall tax burdens, higher marginal tax rates impede output growth.

Papke (1991) examines the impact of state and local tax differentials on the location of industry using a panel data set of manufacturing firm start-ups. Papke models the number of firm births as a Poisson count process and the estimation technique explicitly accounts for unobserved location or state heterogeneity in the estimation. A second focus of the analysis is the development of an industry- and year-specific series of effective tax rates for each state. After controlling for state and industry effects,

the estimates indicate that a high state marginal effective tax rate reduces the number of firm births for half of the industries examined.

Goss and Phillips (1999) evaluate the impact of state and local taxes on economic development by applying meta regression analysis to a survey of the literature by Bartik (1991). The results generally confirm Bartik's conclusion that the effect of taxes is modest across interstate and inter-metro areas but much more pronounced *within* metro areas. Studies neglecting to control for public services and fixed effects will underestimate the tax elasticity. Those measuring growth as aggregate income or investment growth will find lower tax elasticity. Still, most modeling differences encountered across studies do not affect the estimated tax elasticity.

Some of the above papers appeared in the March/April 1997 issue of *The New England Economic Review* that represented the proceedings of a symposium convened by FRB Boston. In addition to the papers presented there, a panel discussed policy implications of state and local development programs and the possible role of the federal government in affecting the costs and benefits of interjurisdictional economic competition. There seems to be consensus on several broad issues:

- 1) States and localities have limited influence over business location and expansion because many important determinants are outside jurisdictional control, e.g., labor costs, energy costs, climate, natural resources, and the availability of appropriately skilled labor;
- 2) Interjurisdictional policy differences are most likely to attract business when they are large and when the competing jurisdictions are otherwise very similar, so that public policy is more effective within regions (metro areas or states) than between them;
- 3) Public policies designed to stimulate economic development can work at cross-purposes, because tax incentives can reduce public services that firms value, and a relaxed regulatory environment can degrade working conditions and the physical environment. Furthermore, policymakers have other goals including an equitable distribution of income and an even-handed treatment of diverse business activities.
- 4) Empirical work shows great variation in the tax elasticity; however a central tendency is about -0.2 which means that a 10% reduction in taxes would increase economic activity by 2%. Issues plaguing empirical work include measurement errors and confounding causes and effects. There is consensus that both public services and taxes affect economic development however fragile the relationship.
- 5) Jurisdictional incentives can effectively subsidize labor or capital and therefore influence how firms substitute between them. Therefore, policymakers need to be clear on their development goals.
- 6) The shift away from federal incentives for state and local economic development (devolution) has forced states and localities to make up the difference and therefore to become more

competitive, perhaps at the expense of social welfare, as these subnational units notoriously do not evaluate the effectiveness of their programs.

- 7) For tax and incentive programs that are more effective, state and local governments should coordinate their efforts and not work at cross-purposes. Goals of each program should be clearly defined, balanced and compatible. Programs should be broad-based and not focused on a few industries; rather, policymakers should direct tax and incentive programs at industrial clusters. They should tailor their programs to the needs of the region and of the times.

There was no consensus on whether interjurisdictional competition is intrinsically good or bad.

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Appendix C: The REMI Model

The Connecticut REMI model is a dynamic, multi-sector, regional economic model developed and maintained for the Department of Economic and Community Development by Regional Economic Models, Inc. of Amherst, Massachusetts. This model provides detail on all eight counties in the State of Connecticut and any combination of these counties. The REMI model includes the major inter-industry linkages among 466 private industries, aggregated into 67 major industrial sectors. With the addition of farming and three public sectors (state and local government, civilian federal government, and military), there are 70 sectors represented in the model for the eight Connecticut counties.*

The REMI model is based on a national *input-output* (I/O) model that the U.S. Department of Commerce (DoC) developed and continues to maintain. Modern input-output models are largely the result of groundbreaking research by Nobel laureate Wassily Leontief. Such models focus on the inter-relationships between industries and provide information about how changes in specific variables—whether economic variables such as employment or prices in a certain industry or other variables like population affect factor markets, intermediate goods production, and final goods production and consumption.

The REMI Connecticut model takes the U.S. I/O “table” results and scales them according to traditional regional relationships and current conditions, allowing the relationships to adapt at reasonable rates to changing conditions. Listed below are some salient structural characteristics of the REMI model:

- REMI determines consumption on an industry-by-industry basis, and models real disposable income in Keynesian fashion, that is, with prices fixed in the short run and GDP (Gross Domestic Product) determined solely by aggregate demand.
- The demand for labor, capital, fuel, and intermediate inputs per unit of output depends on relative prices of inputs. Changes in relative prices cause producers to substitute cheaper inputs for relatively more expensive inputs.
- Supply of and demand for labor in a sector determine the wage level, and these characteristics are factored by regional differences. The supply of labor depends on the size of the population and the size of the workforce.
- Migration—that affects population size—depends on real after-tax wages as well as employment opportunities and amenity value in a region relative to other areas.
- Wages and other measures of prices and productivity determine the cost of doing business. Changes in the cost of doing business will affect profits and/or prices in a given industry.

* The seminal reference is George I. Treyz (1993), Regional Economic Modeling: A Systematic Approach to Economic Forecasting and Policy Analysis, Kluwer Academic Publishers, Boston.

When the change in the cost of doing business is specific to a region, the share of the local and U.S. market supplied by local firms is also affected. Market shares and demand determine local output.

- “Imports” and “exports” between states are related to relative prices and relative production costs.
- Property income depends only on population and its distribution adjusted for traditional regional differences, *not* on market conditions or building rates relative to business activity.
- Estimates of transfer payments depend on unemployment details of the previous period, and total government expenditures are proportional to population size.
- Federal military and civilian employment is exogenous and maintained at a *fixed* share of the corresponding total U.S. values, unless specifically altered in the analysis.
- Because each variable in the REMI model is related, a change in one variable affects many others. For example, if wages in a certain sector rise, the relative prices of inputs change and may cause the producer to substitute capital for labor. This changes demand for inputs, which affects employment, wages, and other variables in those industries. Changes in employment and wages affect migration and the population level that in turn affect other employment variables. Such chain-reactions continue in time across all sectors in the model. Depending on the analysis performed, the nature of the chain of events cascading through the model economy can be as informative for the policymaker as the final aggregate results. Because REMI generates extensive sectoral detail, it is possible for experienced economists in this field to discern the dominant causal linkages involved in the results.

The REMI model is a structural model, meaning that it clearly includes cause-and-effect relationships. The model shares two key underlying assumptions with mainstream economic theory: *households maximize utility* and *producers maximize profits*. In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers outside the region. The output is produced using labor, capital, fuel and intermediate inputs. The demand for labor, capital and fuel per unit output depends on their relative costs, because an increase in the price of one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects population size and its growth rate. People move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply of and demand for labor in the model determine the real wage rate. These wage rates, along with other prices and productivity, determine the cost of doing business for each industry in the model. An increase in the cost of doing business causes either an increase in price or a cut in profits, depending on the market supplied by local firms. This market share combined with the demand described above determines the amount of local output. The model has many other feedbacks. For

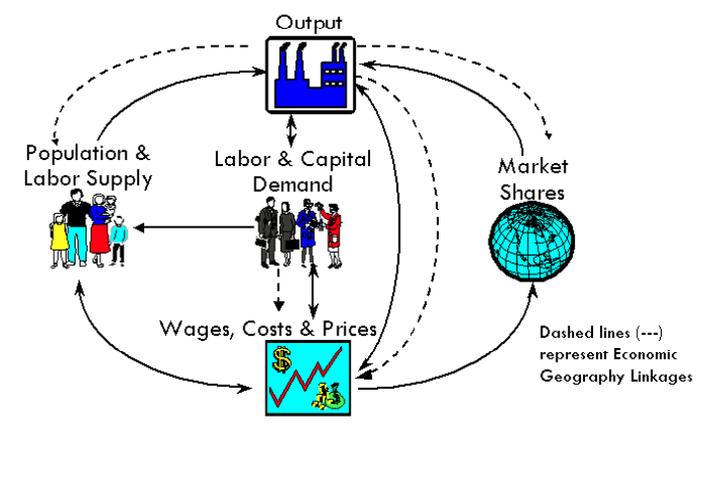
example, changes in wages and employment impact income and consumption, while economic expansion changes investment and population growth impacts government spending.

Model Overview

Figure B1 is a pictorial representation of the model. The Output block shows a factory that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend on both output and their relative costs. Population and Labor Supply contribute to final demand and to wage determination in the product and labor market. The feedback from this market shows that economic migrants respond to labor market conditions. Demand and supply interact in the Wage, Price and Profit block. Once prices and profits are established, they determine market shares, which along with components of demand, determine output.

Figure B1

REMI Model Structure (2002 -)



The REMI model brings together the above elements to determine the value of each of the variables in the model for each year in the baseline forecasts. The model includes each inter-industry relationship that is in an input-output model in the Output block, but goes well beyond the input-output model by including the relationships in all of the other blocks shown in Figure C1.

In order to broaden the model in this way, it is necessary to estimate key relationships econometrically. This is accomplished by using extensive data sets covering all areas of the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available. The model has strong dynamic properties, which means that it forecasts not only what will happen, but also when it will happen. This results in long-term predictions that have general

equilibrium properties. This means that the long-term properties of general equilibrium models are preserved without sacrificing the accuracy of event timing predictions and without simply taking elasticity estimates from secondary sources.

Understanding the Model

In order to understand how the model works, it is critical to know how the key variables in the model interact with one another and how policy changes are introduced into the model. To introduce a policy change, one begins by formulating a policy question. Next, select a baseline forecast that uses the baseline assumptions about the external policy variables and then generate an alternative forecast using an external variable set that includes changes in the external values, which are affected by the policy issue.

Figure B2

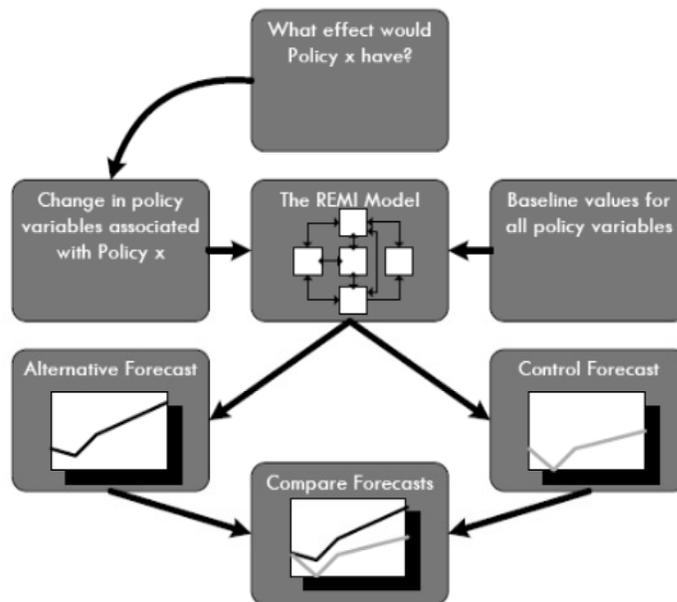


Figure B2 shows how this process would work for a policy change called Policy X. In order to understand the major elements in the model and their interactions, subsequent sections examine the various blocks and their important variable types, along with their relationships to each other and to other variables in the other blocks. The only variables discussed are those that interact with each other in the model. Variables determined outside of the model include:

- Variables determined in the U.S. and world economy (e.g., demand for computers).
- Variables that may change and affect the local area, but over which the local area has no control (e.g., an increase in international migration).
- Variables that are under control of local policy (e.g., local tax rates).

For simplicity, the last two categories are called policy variables. Changes in these variables are automatically entered directly into the appropriate place in the model structure. Therefore, the diagram showing the model structure also serves as a guide to the organization of the policy variables (see Figure B3).

Output Block

The Output Block variables are:

- State and Local Government Spending
- Investment
- Exports
- Consumption
- Real Disposable Income

These variables interact with each other to determine output and depend on variable values determined in other blocks as follows:

Variables in the Output Block	Variables Outside of the Output Block that are Included in its Determinants
State and Local Government Spending	Population
Investment	Optimal Capital Stock (also the actual capital stock)
Output	Share of Local Market (The proportion of local demand supplied locally, called the Regional Purchase Coefficient)
Exports	The Regional Share of Interregional and International Trade
Real Disposable Income	Employment, Wage Rates and the Consumer Expenditure Price Index

Labor and Capital Demand Block

The Labor and Capital Demand block has three types of key variables:

- Employment - determined by the labor/output ratio and the output in each industry, determined in the Output block.
- Optimal Capital Stock - depends on relative labor, capital and fuel costs and the amount of employment.
- Labor/Output Ratio - depends on relative labor, capital and fuel costs.

Simply put, if the cost of labor increases relative to the cost of capital, the labor per unit of output falls and the capital per unit of labor increases.

Population and Labor Supply Block

The model predicts population for 600 cohorts segmented by age, ethnicity and gender. This block also calculates the demographic processes - births, deaths and aging. The model deals with different population sectors as follows:

- Retired Migrants are based on past patterns for each age cohort 65 and over.
- International migrants follow past regional distributions by country of origin.
- Military and college populations are treated as special populations that do not follow normal demographic processes.
- Economic migrants are those who are sensitive to changes in quality of life and relative economic conditions in the regional economies. The economic variables that change economic migration are employment opportunity and real after-tax wage rates.

This block allows the determination of the size of the labor force by predicting the labor force participation rates for age, ethnicity and gender cohorts, which are then applied to their respective cohorts and summed. The key variables that change participation rates within the model are the ratio of employment to the relevant population (labor market tightness) and the real after-tax wage rates.

Wage, Price and Profit Block

Variables contained within the Wage, Price and Profit block are:

- Employment Opportunity
- Wage Rate
- Production Costs
- Housing Price
- Consumer Price Deflator
- Real Wage Rate
- Industry Sales Price
- Profitability

The wage rate is determined by employment opportunity and changes in employment demand by occupation for occupations that require lengthy training. The housing price increases when population density increases. The Consumer Expenditure Price Index is based on relative commodity prices, weighted by their share of U.S. nominal personal consumption expenditures. The model uses the price index to calculate the real after-tax wage rate for potential migrants that includes housing price directly, while the price index used to deflate local income uses the local sales price of construction. Wage rates affect production costs, as well as other costs, and they in turn determine profitability or sales prices, depending on whether the type of industry involved serves mainly local or external markets. For example, a cost increase for all local grocery stores results in an increase in their prices, while an increase in costs for a motor vehicle factory reduces its profitability of production at that facility but may not increase their prices worldwide.

Market Shares Block

The Market Shares Block consists of:

- Share of Local Market
- Share of External Market

An increase in prices leads to some substitution away from local suppliers toward external suppliers. In addition, a reduction in profitability for local factories leads to less expansion of these factories relative to those located in areas where profits have not decreased. These responses occur because the U.S. is a relatively open economy where firms can move to the area that is most advantageous for their business.

The Complete Model

Figure B3 illustrates the entire model and its components and linkages. This diagram is helpful in understanding the complex relationships shared by variables within the various blocks discussed above, as well as their relationships to variables in other blocks.

Figure B3

REMI Model Linkages (Excluding Economic Geography Linkages)

