An Assessment of Connecticut's Tax Credit and Abatement Programs

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT
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Executive Summary

The Connecticut General Assembly mandated[1] 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 2007 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 2007 inclusive. New credit programs that have been enacted since 2007 are not included in this report. Since 2007, there have been new tax credit programs, such as the angel investor tax credit, as well as revisions to existing credits, such as the film tax credit and job creation credit. Since this report does not contain data for post 2007 tax years, the impact of the post 2007 new credits or modifications will be analyzed in future reports.

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). Certain tax credit programs (e.g., the Insurance Reinvestment tax credit) may be claimed against the personal income tax. In those cases, firms such as S-corporations, LLCs and LLPs may participate in certain tax credit programs through their shareholders, partners or members.

The starting assumption for this analysis is based on the premise that eligible firms spend at least what they can recapture as a tax credit (their indifference point) and will spend an amount in any case that is equivalent to the rate of economic growth or their historical spending pattern. For example, if a firm recognized that it could spend $100,000 on pollution abatement and receive a tax credit for that amount, it would do so. This is a dollar-for-dollar spending assumption and is equivalent to assuming that no additional or incremental activity would occur absent the credit. However, firms may spend the full amount of the credit irrespective of the incentive or they may spend a fraction of the credit because of the incentive.

We have evaluated each tax credit, abatement and exemption program separately for its impact on jobs and its fiscal return to the state (measured by net state revenue). Section 3 explains the assumptions and modeling strategies (for example, changes in public and private

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

spending, employment and the firm's cost of capital) for each tax credit program that does not require pre-authorization but is reviewed and audited by DRS. The analysis of the DECD-administered tax credit programs (the film, urban site reinvestment, insurance reinvestment, manufacturing facilities, enterprises zone property tax abatements and job creation tax credit) appears in Section 4.

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 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.

This 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 do not require pre-authorization and are reviewed and audited by DRS., we make general observations and recommendations.

The top three claim amounts and number of claims have been for Connecticut's 5% Fixed Capital Investment Tax Credit ($77.5 million in 2006 and by 7,114 firms in 2000), the Electronic Data Processing (EDP) tax credit ($38 million in 1997 and by 6,777 firms in 2000) and the R&D tax credit ($55.4 million in 1997 and by 279 businesses in 1999).

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."

We have assumed that there have been more firms eligible for the tax credit and abatement programs in existence over the study period (1995 through 2007) than those that claimed tax credits or abatements. Firms eligible for a tax credit or abatement may have decided not to take advantage of it because the costs of applying and/or complying exceeded the program's

benefits to the firm. 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. 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.

DECD's analysis concludes that several Connecticut tax credit, property tax abatement and exemption programs have negative or very limited positive impacts. Other programs have had little or no participation. We recommend that these be eliminated. A few programs have significant impacts. The enterprise zone programs that depend on the demographics of Census tracts for their designation should be reevaluated in light of the 2010 Census. We may find the existing zones no longer qualify because the program has been successful and that other zones could be designated to receive benefits. In general, however, the enterprise zone programs generate little economic and fiscal impact and may require municipal and state efforts disproportionate to their benefits.

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Connecticut Tax Credit and Abatement Programs

Section 1: Introduction

Pursuant to 2010 Conn. Pub. Acts 1, June Spec. Sess., §27 ("the Act"), 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 DECD 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 is organized in roughly the same way as the law is written with certain exceptions to reduce redundancy and increase clarity. The analysis of the tax credit programs that do not require pre-authorization but are reviewed and audited by DRS appears in Section 3. The analysis of tax credit and abatement programs that DECD administers for which specific additional information is required appears in Section 4.

The Act 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 2007) 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 Act 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 4 lists the relevant DECD-administered tax credits claimed by NAICS code.

Table 1.1 shows the most recent snapshot of carryforwards 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	
		2007	2008
Credit Program	Administrative Agency	Corp Tax	Insurance Premium Taxes
Historic Homes Rehab	CCCT	$25,476	$35,299
Housing Program Contribution	CHFA	$578,205	$0
Film Production Infrastructure	DECD	$1,406,780	$0
Film Production	DECD	$605,652	$46,788
Insurance Reinvestment	DECD	$2,964,847	$227,427
Urban Industrial Reinvestment	DECD	$339,900	$1,090,250
Hiring Incentive	DOL	$11,976	$0
Alternative Fuels	DRS	$18,446	$0
Donation of Land	DRS	$4,188,003	$0
Electronic Data Processing Credit	DRS	$145,450,164	$17,413,551
Fixed Capital Investment	DRS	$271,742,823	$0
Human Capital Investment	DRS	$4,627,618	$0
Research & Development (Nonincremental)	DRS	$837,131,452	$0
Research & Experimental (Incremental)	DRS	$557,011,389	$0
SBA Guaranty Fee	DRS	$198,708	$0
Totals		**$1,826,301,439**	**$18,813,315**

The Act 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 ten tax credit programs DECD administers,[2] 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 2007 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

[2] We include the Housing Program Contribution tax credit program under DECD-administered programs but it is actually administered by the Connecticut Housing Finance Authority (CHFA).

level[3] during the 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 2007, the legislature has created new tax credit programs (for example, the angel investor tax credit) and modified existing programs (for example, the insurance reinvestment, the film tax and the job creation tax credit programs). As there is no data for new or modified tax credit programs after 2007, we cannot report on their impact. Data for the machinery and equipment property tax exemption and the enterprise zone property tax abatement exist and we assess these programs for grand list year 2009 for which payments appear in state fiscal year (SFY) 2011.

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).

Our starting assumption is that eligible firms spend at least what they can recapture as a tax credit (their indifference point) and would spend some amount in any case equivalent to the rate of economic growth or their historical spending pattern (although for some firms this amount could be zero). For example, if a firm recognized that it could spend $100,000 on pollution abatement equipment and receive a tax credit for that amount, it would do so. This is the unitary elasticity or dollar-for-dollar spending assumption and is equivalent to assuming that the incremental (net new) activity occurred because of the credit exclusively. However, this may be optimistic; firms may spend the full amount of the credit or a multiple[4] irrespective of the credit or they may spend a fraction of the credit or a multiple. Empirical research suggests (see the literature review in Appendix B) that the elasticity (responsiveness) of economic growth with respect to business tax policy is about -0.2. This means that reducing business taxes by 10% results in a 2% increase in targeted economic activity (the '20%' case). We apply this elasticity estimate at the industry level. In addition, we calculate economic impact results for an industry-level elasticity of -0.5 or a 5% increase in targeted economic activity for a 10% business tax reduction (the '50%' case), as well as for the unitary elasticity case (the '100%' case).

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

[4] Some credits amount to 5% of the amount invested implying that the qualifying expenditure or investment was 20 times the credit claimed.

This range of firm behavior explicitly admits we do not 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. To capture a plausible range of economic activity, we assume 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 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 or in some cases their non-wage labor costs. 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. Appendix A 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 but is reviewed and audited by DRS. The film, urban and industrial site reinvestment, insurance reinvestment, manufacturing facilities, enterprise zone property tax abatements and job creation tax credit analyses appear in Section 3 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 2007. We have provided this data, 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 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.[5] The latter data is currently available from FY 2001 through FY 2009. 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 theses tables is from the DRS 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.

[5] Section 27 of PA 10-1 of the June Special Session 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.

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

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

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

* The 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.

The following section provides a detailed view of the history of Connecticut's tax credit, abatement and exemption programs.

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 2007 (2009 in the cases of claims against the insurance premiums tax, the public service companies' tax, the health care centers tax and the enterprise zone property tax abatement and machinery and equipment property tax exemptions). 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 Section 27 (b) (2) of PA 10-1 JSS.

While some programs began before 1989, we consider this period because it covers the recessions of 1989-1991 and 2001-2003 as well as the expansions from February 1992-July 2000 and April 2003-December 2007.[6] 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.

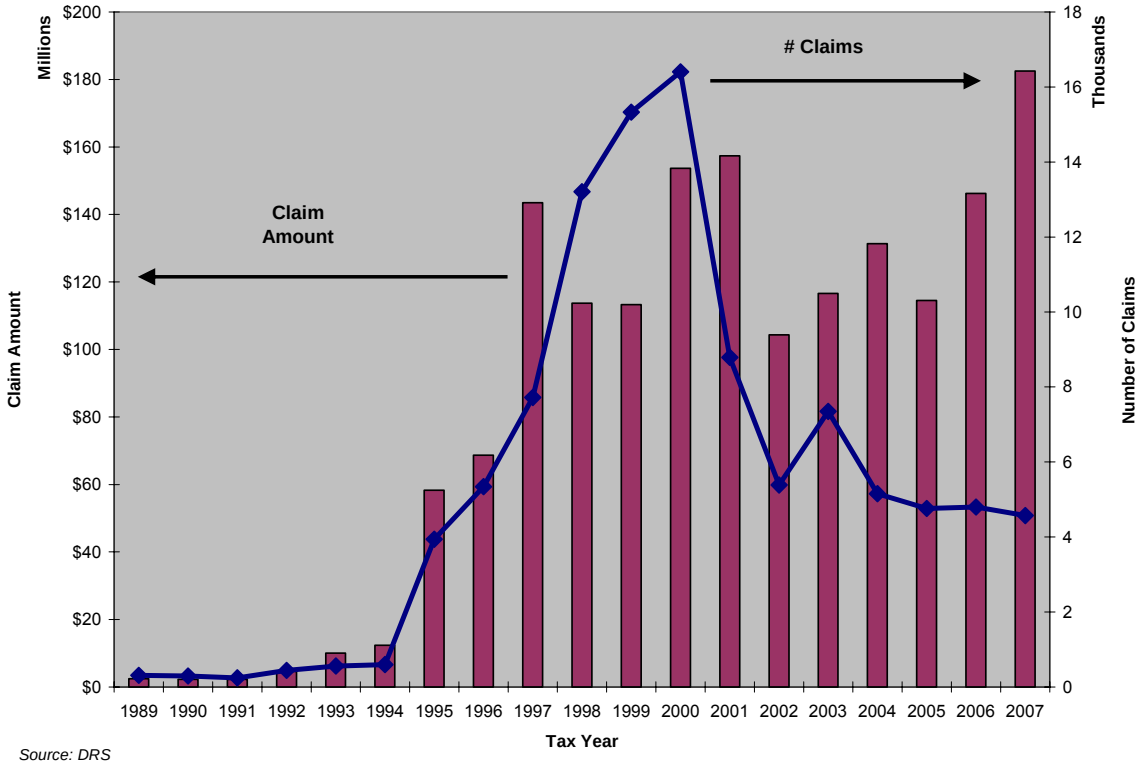
The DRS Informational Publication 2007(31), *Guide to Connecticut Business Tax Credits* (Issued 7/09/08) provides a brief overview of the then available business tax credits (some credit programs have expired and new programs have emerged).[7] The *Guide* describes the taxes against which credits may 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.

[6] 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.

[7] See http://www.ct.gov/ecd/lib/ecd/drstaxcreditguide070908.pdf.

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 2007 totaled $1.638 billion in current dollars. In 2008, credits applied against the Insurance Premiums Tax and unrelated business tax totaled $43.3 million in current dollars. The annual amount claimed rose from $2.44 million in 1989 to $182.54 million in 2007. The largest annual amount claimed was $182.54 million in 2007. Chart 2.1 shows the dollar amount of tax credits claimed (left scale) and the number of claims (right scale) from 1989 through 2007 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 leveled from 2004 through 2007. We observe the value of the average credit claimed has increased significantly since 2002.[8]

Chart 2.1: Connecticut Corporate Tax Credits Claimed in Tax Years 1989 – 2007



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. Between 1995 and 1997, the number of claims for the

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

Child Day Care Subsidy declined from 33 to 20 while the amount claimed rose from $339,000 to $505,000. In 2003, the number of claims for the Donation of Open Space Land credit jumped to 90 from five the year before and the amount claimed declined from more than $665,000 in 2000 to $185,000 in 2003. In 2004, the number of claimants for the Donation of Open Space Land credit declined to four while the amount claimed increased to $1.23 million. 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, 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.

Some credits are little used. The R&D Grants to Institutions of Higher Education has had no more than two claims each year since 2001 (there was one in 2000 and none in 2001). Traffic Reduction credit claims peaked at nine claimants in 2001 and declined to two in 2005. The Small Business Administration (SBA) Guaranty Fee credit has been taken by six or fewer firms since 2003 when they claimed $3,101. The following year (2004) four firms claimed $239,602. The number of the Apprenticeship Training credit claims (fewer than 15 since 2003) has declined significantly from its peak of 78 claims in 1999. The number of Hiring Incentive tax credit claims declined sharply and consistently from 25 in 1999 to one in 2007. The number of Financial Institutions claims except for 15 in 2003 has been fewer than four each year. Through tax year 2007, one firm has claimed the Displaced Electric Worker credit.

The top three claim amounts and number of claims have been for Connecticut's 5% Fixed Capital Investment Tax Credit ($77.5 million in 2006 and by 7,114 firms in 2000), the Electronic Data Processing (EDP) tax credit ($38 million in 1997 and by 6,777 firms in 2000) and the R&D tax credit ($55.4 million in 1997 and by 279 businesses in 1999).

Insurance premium tax credits include those for EDP 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 $73.6 million claimed on 2007 tax returns and $43.3 million for the 2008 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."[9] The credit amounts claimed ranged from $3,647 by 12 taxpayers in 1997 to $32,911 claimed by 47 organizations on their 2008 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 $57.3 million in SFY 2010.

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 2009, these abatements and payouts have been in the range of $15 - $18 million.

Tables 2.1 and 2.2 display the corporation tax credits claimed from tax years 1989 through 2007. 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 carryforward, carryback and/or assignment provisions and therefore, data may appear after the program expired. The bars represent the dollar amounts claimed (left-hand scale) and the lines represent the number of claims (right-hand scale).

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).

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

Table 2.1: Corporation Tax Credits Claimed 1989-2007

DRS Annual Report Year:	1989-1990	1990-1991	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Amount Claimed in Tax Return Year:	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Air Pollution Abatement	$261,419	$108,542	$321,210	$118,309	$83,271	$198,320	$496,013	$175,945	$164,124	$29,416	$23,649	$4,333	$304	$0	$19,200				
# of Credits	9	8	4	8	11	59	48	13	9	18	11	6	2	0	3				
Apprenticeship Training	$62,181	$45,253	$35,518	$52,486	$55,568	$103,863	$110,053	$144,036	$344,055	$960,165	$557,725	$435,903	$274,150	$244,668	$1,198,990	$86,370	$1,187,501	$295,076	$106,757
# of Credits	14	11	14	17	19	19	21	20	52	65	78	65	37	23	9	14	14	12	8
Computer Donation													$46,754	$22,551			$250	$340	
# of Credits													1	1			1	1	
Day Care Centers	$33,423	$19,438	$36,585	$90,013															
# of Credits	5	4	4	9															
Child Day Care Subsidy	$119,627	$14,804	$85,468	$709,527	$431,027	$280,424	$339,092	$355,668	$504,864	$66,155	$245,018	$23,540	$9,208	$5,670	$7,867				
# of Credits	13	10	13	25	29	25	33	23	20	17	17	14	5	2	1				
Clean Alternative Fuels		392,490		15,448	17,725	253,520	913,290	371,450	862,174	173,585	267,772	122,454	5,225	$ 8,817	$ 75,536	$ 23,819	$ 3,429	$ 6,001	$ 1,958
# of Credits		25		3	5	6	11	6	19	9	12	9	5	2	8	2	3	2	2
Conversion to Alternative Fuels						$177,872													
# of Credits						4													
Displaced Electric Worker														$892	$93			$1,500	$5,999
# of Credits														1	1			1	1
Donation of Open Space Land											$86,033	$665,663	$557,257	$334,414	$184,782	$1,234,270	$55,757	$6,778	$94,876
# of Credits											3	9	4	5	90	4	3	2	4
Electronic Data Processing							$24,177,852	$30,702,243	$38,032,318	$26,132,451	$29,296,541	$26,488,367	$28,072,552	$12,955,763	$19,896,275	$16,698,046	$23,059,263	$16,046,037	$13,736,970
# of Credits							2940	4,207	4,842	5,842	6,329	6,777	3,704	1,908	2,454	1,770	1,623	1,609	1,477
Employee Training						$129,720	$386,854	$1,152,161	$1,859,704										
# of Credits						50	116	199	170										
Employer Assisted Housing						$496,677	$525,942	$467,425	$533,958	$167,060	$454,850	$156,273	$135,026	$101,331	$16,334	$8,029	$11,898	$83,049	$32,425
# of Credits						11	14	8	11	4	15	9	7	4	3	1	4	1	2
Enterprise Zone or Entertainment District	$107,867	$79,154	$150,911	$188,703	$128,982	$292,076	$497,738			$293,618									
# of Credits	13	19	17	30	31	37	48			39									
Film Production																			$11,438,432
# of Credits																			10
Fixed Capital								$588,785	$398,206	$20,416,193	$37,374,387	$50,790,548	$54,235,916	$37,064,650	$48,915,004	$57,932,133	$44,015,180	$77,486,450	$46,228,288
# of Credits								46	35	4,340	6,055	7,114	3,744	2,543	3,793	2,466	2,304	2,313	2,207
Financial Institutions								$250	$51,262					$1,741	$100,762	$2,556		$839	
# of Credits								1	2					3	15	2		2	
Hiring Incentive												$40,492	$52,155	$252,452	$3,941	$8,483	$141		$4,500
# of Credits												25	11	5	6	2	1		1
Historic Homes Rehabilitation														$209,497	$541,772	$265,000	$67,007		$4,680,420
# of Credits														2	4	3	1		57
Housing Program Contribution						$413,071	$971,338	$784,756	$999,297	$992,250	$2,093,902	$3,013,842	$3,593,351	$2,731,744	$3,762,045	$1,739,525	$2,016,285	$3,358,032	$3,146,933
# of Credits						13	22	23	26	25	62	42	22	24	26	8	5	8	8
Human Capital										$1,501,947	$2,868,128	$2,538,751	$2,964,233	$2,078,714	$1,323,432	$2,258,410	$1,443,930	$1,692,412	$1,514,318
# of Credits										336	388	387	206	167	180	172	167	177	162

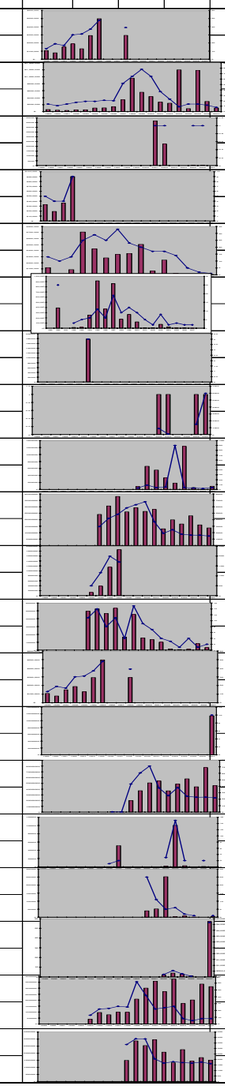


Table 2.2: Corporation Tax Credits Claimed 1989-2007

DRS Annual Report Year:	1989-1990	1990-1991	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009		
Amount Claimed in Tax Return Year:	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007		
Industrial Waste Treatment	$87,962	$91,380	$71,140	$331,574	$6,972	$466,855	$41,385	$48,066	$379,098	$3,390		$11,937									Industrial Waste Treatment
# of Credits	15	10	8	15	9	7	8	14	10	3		1									
Insurance Reinvestment											$8,281	$6,210	$128,403	$36,550	$334,040	$314,773	$159,615	$2,165,750	$5,868,838		Insurance Reinvestment
# of Credits											1	6	3	2	4	3	1	5	6		
Low Income Housing			$308,035	$405,252	$361,677																Low Income Housing
# of Credits			16	20	16																
Machinery and Equipment									$12,025,481	$9,676,278	$7,262,009	$6,538,797	$3,061,185	$2,349,047	$1,529,827	$2,117,602	$1,573,204	$1,052,677	$1,854,847		Machinery and Equipment
# of Credits									1,737	1,662	1,431	1,040	507	277	265	203	174	145	132		
Manufacturing Facility in Targeted Investment Community				$935,580		$867,056	$880,055	$1,438,744	$969,638	$954,663	$1,119,742	$1,079,806	$674,564	$467,145	$400,245	$1,869,062	$617,235	$1,549,934	$3,469,806		Manufacturing Facility in Targeted Investment Community
# of Credits				85		56	74	97	96	110	158	139	76	10	50	45	38	38	41		
Neighborhood Assistance	$1,237,261	$1,124,215	$853,169	$1,761,292	$1,829,270	$1,524,679	$1,579,428	$1,929,244	$2,035,945	$2,265,651	$2,447,486	$2,137,474	$1,220,022	$1,232,322	$1,395,880	$1,217,040	$1,071,745	$1,174,715	$752,850		Neighborhood Assistance
# of Credits	158	132	114	226	231	128	250	239	226	263	258	269	111	97	94	84	74	73	59		
New Facilities	$229,397	$402,964	$395,068		$861,169	$22,037															New Facilities
# of Credits	61	66	50		84	7															
Opportunity Certificate									$29,621	$104,906	$72,694										Opportunity Certificate
# of Credits									8	11	21										
Rental Housing	$299,236																				Rental Housing
# of Credits	15																				
Research & Development							$5,437,646	$9,182,729	$55,439,160	$30,062,084	$15,197,525	$23,720,780	$34,702,296	$1,980,787	$3,430,736	$5,932,629	$3,673,756	$4,831,443	$5,321,279		Research & Development
# of Credits							152	177	180	217	279	274	183	129	122	134	132	164	134		
Research & Experimental Expenditures					$6,271,728	$7,095,290	$21,966,634	$21,305,092	$22,745,583	$19,863,128	$13,577,729	$15,797,584	$8,682,936	$22,382,442	$9,811,504	$10,268,517	$14,320,781	$15,352,339	$10,637,252		Research & Experimental Expenditures
# of Credits					120	151	192	236	229	215	192	161	100	121	126	149	135	157	153		
Research & Development Grants to Institutions of Higher Ed						$11,312	$250	$4,450	$45,843	$87,076	$319,005		$5,446		$2,042	$1,512	$229,755		$21,657		Research & Development Grants to Institutions of Higher Ed
# of Credits						16	1	2	15	10	1		2		1	1	2		1		
SBA Guaranty Fee											$7,684	$20,128	$2,942	$297	$3,101	$239,602	$178,791	$893	$33,324		SBA Guaranty Fee
# of Credits											1	21	2	1	6	4	1	1	2		
Traffic Reduction									$10,709	$6,366	$12,862	$222,103	$175,411	$19,536	$142,757	$218,946	$2,546				Traffic Reduction
# of Credits									3	4	1	6	9	3	5	7	2				
Urban and Industrial Site Reinvestment																	$94		$560,040		Urban and Industrial Site Reinvestment
# of Credits																	4		1		
Work Education	$6,885	$9,896	$3,749	$3,189	$3,327	$31,362	$16,226	$11,172	$461,762												Work Education
# of Credits	8	8	6	6	6	10	9	29	20												
Total Claims	$2,445,258	$2,288,136	$2,260,853	$4,611,373	$10,050,716	$12,364,134	$58,339,796	$68,662,216	$137,892,802	$113,756,382	$113,293,022	$133,814,985	$138,599,336	$84,481,030	$93,096,165	$102,436,324	$93,688,163	$125,101,926	$109,511,769		Total Claims
Total Claimants	311	293	246	444	561	599	3,939	5,340	7,710	13,190	15,313	16,374	8,741	5,330	7,266	5,074	4,689	4,708	4,468		Total Claimants

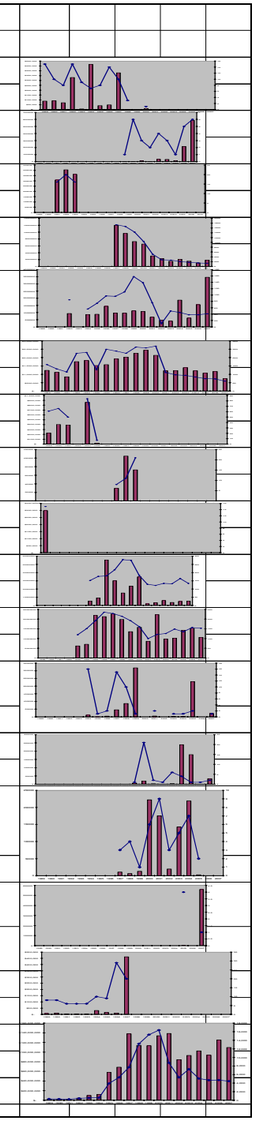


Table 2.3: Insurance Premiums Tax and Unrelated Business Tax Credits/Property Tax Abatements

DRS Annual Report Year:		1989-1990	1990-1991	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009		
Amount Claimed in Tax Return Year:	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
Insurance Premium Tax Credits																						
CT Life & Health Ins Guaranty Credit									$1,506,703												CT Life & Health Ins Guaranty Credit	
# of Credits									Not Reported													
Coporation Business Tax Credit									$297,677												Coporation Business Tax Credit	
# of Credits									Not Reported													
EDP									$3,441,713			$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	EDP	
# of Credits									Not Reported			36	41	46	43	41	26	37	35	33		
Housing Pgm Contribution												$59,399	$831,452	$1,380,637	$2,167,338	$1,982,714	$377,410		$446,493		Housing Pgm Contribution	
# of Credits												1	2	2	9	10	4		5			
Insurance Dept Assessment									$338,672			$981,433	$1,018,575	$1,072,910	$1,130,438	$1,000,475	$973,210	$1,122,053	$923,638	$690,815	Insurance Dept Assessment	
# of Credits									Not Reported			21	18	16	16	11	10	11	14	8		
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	Insurance Reinvestment	
# of Credits												8	14	13	19	13	15	24	29	17		
Neighborhood Assistance									$2,481			$3,000	$76,000	$67,706	$80,909	$132,400	$106,021	$282,600	$168,300	$655,000	Neighborhood Assistance	
# of Credits									Not Reported			1	2	2	4	4	3	8	3	10		
Film Production Credit																			$42,693,902	$20,618,603	Film Production Credit	
# of Credits																			14	21		
Film Production Infrastructure																				$1,596,465	Film Production Infrastructure	
# of Credits																				1		
Health Care Coverage under HUSKY												$5,395,338	$1,639,154								Health Care Coverage under HUSKY	
# of Credits												3	1									
Historic Homes													$239,707	$591,523	$466,844	$665,593	$1,062,543	$528,618	$3,542,162	$1,169,112	Historic Homes	
# of Credits													2	3	5	6	6	6	12	6		
Urban Industrial Renovation																			$287,621		Urban Industrial Renovation	
# of Credits																			1			
Total Insurance Premium Tax Credits									$5,587,246			$19,857,390	$18,753,753	$19,787,274	$23,526,722	$28,888,787	$20,826,925	$21,090,476	$73,556,308	$43,307,242	Total Insurance Premium Tax Credits	
Total Claimants												12	19	18	28	23	24	38	59	55		
Unrelated Business Taxable Income Tax									$3,647	$2,969	$5,316	$8,125	$12,365	$20,024	$28,514	$34,739	$31,051	$34,240	$32,911		Unrelated Business Taxable Income Tax	
# of Credits									12	18	17	17	28	40	54	55	53	50	47			
Property Tax Abatement/Exemption Programs↓ /Years→														2002	2003	2004	2005	2006	2007	2008	2009	
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	Mfg. Machinery & Equipment Exemption Program
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	EZ Abatement Program

Section 3: Tax Credit Programs Administered by DRS

We present results for the tax credit programs administered by DRS 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. In addition, if the induced activity is small (that is, on the order of 20 times or more smaller) relative to the total investment, we do not apply a range of induced activity (the results would be quite close for each case).

The property tax abatements and exemptions are independent of profit, while the cases for corporate tax credits require that firms earn profit to be used. The economic and fiscal impacts of tax credit, exemption and abatement programs administered by DECD appear in Section 4 below.

General Methodology and Explanation of Results

Tables 3.1 through 3.28 below present the details of each tax credit impact. For tax credit programs in which there is incremental induced activity, we examine results in which corporations spend 20%, 50% and 100% of the credit claimed on the targeted activity. The remainder of the credit adds to their retained earnings and, in effect, reduces their 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.

Except for the claim amounts reported as absolute levels, the averages reported in Tables 3.1 through 3.28 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 cost per private, nonfarm job created is the sum of the revenues forgone divided by the sum of the changes from the baseline (some above and some below) of private, nonfarm jobs created during the period in which the credit or exemption was in effect. 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 these measures 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 jobs or 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.

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. In terms of average state revenue gained or lost per dollar forgone, our results show that, with few exceptions, the amounts are significantly less than one dollar gained or lost per tax revenue dollar forgone.

However, the purpose of several tax credit programs described in this section is or was not to create jobs or to increase tax revenue. Donating land or adding to open space ostensibly improves the quality of life for Connecticut residents while tax credit programs such as this do not (intend to) create jobs or increase tax revenue. Other programs such as traffic reduction, air pollution abatement, child day care, clean alternative fuels, employer-assisted housing, grants to higher education, human capital investment and neighborhood assistance were presumably not intended to create jobs or increase tax revenue. These programs appear to target quality of life improvement. Therefore, the cost per non-farm job and the revenue returned per dollar of tax credit claimed are 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 or the number of additional people seeking work because of increased child care opportunities 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.

For tax credit programs in which the cost per job created is negative and the metric is meaningful, the state saved (did not spend) money because private, nonfarm employment declined causing demand for public services (e.g., social insurance and social services) to decline reflected in a decline in state spending. In several cases, public employment declined as well further reducing the average cost per job. Private sector employment declines may have offsetting effects on public spending. On the one hand, demand for certain public services declines such as public transportation, public education and public safety. However, demand for unemployment insurance, retirement benefits and other supportive social services increases as private sector employment declines.

Recalling that the amounts claimed flowed into the Connecticut economy through different channels in each tax credit case,[10] we see a trend of declining private sector employment and increasing public sector unemployment for several tax and exemption programs (primarily those stimulating capital growth) as the inducement fraction of the credits or exemptions claimed declines. This is because the greater the amounts captured in firms' retained earnings, the greater the productive (unfettered) use to which firms may put these funds. The implication is that for certain tax credit programs, when most of the credit or exemption claimed flows into retained earnings, it creates the most private sector employment and the least public sector unemployment. We attribute the decline in private sector employment below the baseline forecast (shown as negative numbers) to the decline in the public sector's demand for privately-provided goods and services as public spending declines (the spillover effect of reduced public spending). We model an increase in retained earnings by a reduction in capital cost in industries claiming a tax credit. This has the effect of inducing additional investment by firms in plant and equipment, because we have altered the cost of capital relative to labor and made capital (plant and equipment) more affordable. In fact, REMI responds to a reduction in the cost of capital by inducing additional plant construction or renovation and we see a relatively significant change in construction employment in the model's simulation results. This explains the significant decline below the baseline forecast in the R & D (nonincremental) tax credit shown in Table 3.16 below as the decline in the R & D tax credit claims in later years caused the buildup of physical plant to catch up to the much larger demand in earlier years and subsequently reduce the demand for construction labor.

Most DRS-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 ($48.5 million) is the fixed capital investment tax credit program from income year 1998 through 2007 followed by the electronic data processing tax credit program ($27.9 million) from income year 1995 through 2007. The research and development (nonincremental) and the research and experimental (incremental) tax credit programs average approximately $16 million per year from income year 1995 through 2007.

[10] There is some leakage out of state to the extent that capital goods purchased are not manufactured here or that reductions in the cost of capital flowed into dividends paid to out-of-state stockholders.

General Recommendations and Observations

Though DECD is not required to recommend disposition on DRS-administered tax credit programs, it seems clear that several 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.

Some tax credit programs such as the research and development (non-incremental) and research and experimental (incremental) tax credit programs experience significant credit accumulation as the recipient is not able to apply the credits earned. An option to this situation is to monetize these credits and put them to productive use. Currently, businesses in Connecticut can use one-third of the tax credits received in an income year; the balance of unused tax credits may be carried forward for a maximum of 15 years. According to Connecticut statutes, small businesses (firms that have gross income for the previous income year not exceeding $100 million) may receive a refund for a portion of their unused tax credits. Because accrued tax credits are non-refundable and non-transferable for larger businesses, they provide no economic benefit. As a result, such businesses are not effectively incentivized to pursue additional research and development initiatives.

Therefore, the state could amend its policy regarding the exclusion of medium and large businesses from monetizing their unused tax credits in order for this incentive program to be economically productive. Alternative methods of monetizing tax credits may include allowing a percentage of the accrued credits to be sold on the open market, refunding them directly, allowing some combination selling and refunding or establishing a voucher system whereby the credits may be used to purchase goods and services from Connecticut firms.

DRS-Administered 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 DRS. Tax credit, abatement and exemption programs that DECD administers appear in Section 4 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 REMI in Appendix B.

Air Pollution Abatement (This program ended in 2003.)
A credit against the corporation business tax is available for 5% of the expenditures paid or incurred during an income year for the construction, rebuilding, acquisition or expansion of air pollution abatement facilities, including the planning thereof, approved by the Department of Environmental Protection. Qualifying expenditures include purchases of tangible personal property and services. Please refer to CGS §§12-247a and 12-247b.

We assume the firm spends the amount it did irrespective of the credit because it is quite small (5% of the firm's expenditure on pollution abatement equipment) relative to the investment and the small increase in profit due to the credit is spent in unknown ways. Therefore, we assume the amount of the credit reduces the firm's cost of capital dollar-for-dollar. We reduce state government spending each year by the amount of the credit claimed for pollution abatement equipment.

Table 3.1 shows the microsimulation results for the air pollution abatement tax credit. The average credit claimed during the life of the program (1995 through 2003) was $114,123 suggesting that the average investment in pollution abatement was $2,281,460 between 1995 and 2003. The bulk of the investment occurred in 1995, 1996 and 1997 (92% of the total). This credit program had very little economic and fiscal impact. It purportedly intended to reduce pollution and not necessarily create jobs or increase tax revenue. We do not know by how much pollution was reduced and therefore the reported economic and fiscal outcomes in Table 3.1 do not realistically assess the benefit of this credit program.

Apprenticeship in Manufacturing, Plastics and Construction
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 assume the maximum credit of $4,800 per apprentice reduces the non-wage cost of labor to firms in the plastics and manufacturing industries and the maximum credit of $4,000 per apprentice reduces the non-wage cost of labor to firms 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 calculate the ratio of the total credits claimed to the total compensation of each industry and use this to reduce the non-wage labor cost share of the industries claiming the credit. We assume 100%, 50% and 20% of the credit amount reduces the non-wage labor costs (expressed as a share of the wage bill of the relevant industry) associated with the hiring of apprentices. To the extent that the claiming firms did not view the credit as a dollar-for-dollar reduction in non-wage labor cost, the remainder reduces the firm's cost of capital. Therefore, we adjust the firm's cost of capital by 0%, 50% and 80% corresponding to the 100%, 50% and 20% reductions in the non-wage labor costs associated with the hiring of apprentices. We reduce state government spending each year by the amount of the credit claimed for apprentices in the manufacturing, plastics and construction industries.

Table 3.2 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 that program as modeled here has paid for itself since 1995. The annual average claim over the 1995-2007 period was $470,578 suggesting approximately 90 to 100 apprentices were hired on average each year. That the total and the non-farm employment reported in Table 3.2 does not reflect these ostensible direct hires reflects the response of the model to the positive changes in non-wage labor and capital costs and the response of the model to the reduction in state spending that ripples into the private sector.

Child Day Care

From 1989 through 1997, under CGS §§17b-740, 741, and 742, corporations could claim a credit for (1) subsidizing employee day care costs, (2) day care facility planning, site preparation, construction, renovation, or acquisition and (3) providing parent education programs. To qualify for the credit, corporations had to apply to the Department of Social Services (DSS). DSS could approve up to $2 million worth of tax credits annually. DSS prioritized corporate applications based on which day care programs benefited low-wage employees. Individual credits were limited to (1) 50% of the corporation's costs for subsidizing day care and (2) the lesser of 40% of day care facility construction or $50,000 (although for all income years except for those beginning in 1998 the cap was $20,000). (Source: http://www.cga.ct.gov/2000/rpt/olr/htm/2000-r-0631.htm)

We increase labor supply due to increased child care capacity as a function of the amount of the credit claimed. The credit effectively reduces the cost of child care to firms and permits them to

purchase or supply more of the service. We assume that child care permits some parents to work who otherwise could not. We increase the labor force participation rate (LFPR) of women aged 25-29 who are black-non-Hispanic or Hispanic estimated by the increased number of workers seeking employment due to the greater availability of child care. We assume the operational activity in this case is child care subsidy absent information on construction of child day care facilities. The subsidy is twice the credit amount. The subsidy divided by the average annual cost of child care provides the number of additional children whose parents or guardians seek (and not necessarily find) employment. The number of parents or guardians seeking employment is the number of children divided by 1.76.[11] The increase in the cohort LFPR is the relevant labor force component to which we add the incremental cohort of workers seeking work divided by the relevant cohort population. In addition to stimulating parents or guardians to seek employment, the subsidy provides additional revenue to the child care sector. To capture the range of subsidy inducement up to the amount of the credit claimed, we assume at one extreme that the half the subsidy occurred only because of the credit (the 100% case). The intermediate cases are ones in which the credit induced 50% and 20% of half the subsidy. We adjust the claiming firms' cost of capital by 0%, 50% and 80% corresponding to the 100%, 50% and 20% inducement up to 50% of the subsidy. We reduce state government spending each year by the amount of the credit claimed for child day care.

Table 3.3 shows the microsimulation results for the child day care tax credit program. The average credit claimed during the life of the program (1995 through 2001) was $221,031 suggesting that the average investment in (1) subsidizing employee day care costs, (2) day care facility planning, site preparation, construction, renovation, or acquisition and (3) providing parent education programs was approximately $440,000, significantly less than the $2 million annual cap. Because the annual average net state revenue is small and positive for each inducement level and the number of total jobs created on average is very small and negative, we conclude that at least fiscally, this program did not harm the state. However, the program ostensibly intended to increase participation in child day care thus providing an incentive for some parents to return to work or increase their participation from part to full time. Because we do not know how many parents returned to work or increased their participation from part to full time, the reported economic and fiscal outcomes do not realistically assess the benefit of this credit program.

[11] See McMillen, Stan and Kathryn Parr (2004). "The Economic Impact and Profile of Connecticut's ECE Industry," Connecticut Center for Economic Analysis report, page 8. 1.76 is the average number of children per household with children younger than 12.

Table 3.1: Net Economic and Fiscal Impacts of the Air Pollution Abatement Tax Credit

Air Pollution Abatement	1995	1996	1997	1998	1999	2000	2001	2003	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$496,013	$175,945	$164,124	$29,416	$23,649	$4,333	$304	$19,200	$114,123		
Changes in:											
Total Employment	-8	1	0	2	1	1	0	0	0		
Total Non-Farm Employment	1	4	2	2	1	1	0	0	1	$76,324	
GDP	-$427,527	$130,404	$103,547	$221,285	$149,538	$168,000	$124,851	$80,541	$68,830		
State Revenues	-$31,360	-$6,395	-$13,817	-$15,420	-$22,164	-$35,275	-$34,380	-$40,942	-$24,969		-$0.22
State Expenditures	$8,624	-$33,576	-$27,634	-$34,086	-$32,835	-$36,954	-$36,099	-$35,602	-$28,520		
Net State Revenue	-$39,984	$27,181	$13,817	$18,666	$10,671	$1,680	$1,719	-$5,340	$3,551		

Table 3.2: Net Economic and Fiscal Impacts of the Apprenticeship in Manufacturing, Plastics and Construction Tax Credit

Apprenticeship	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
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	$470,758		
20% Scenario															
Changes in:															
Total Employment	-2	-2	-4	-18	-1	2	6	-13	11	-11	8	9	-1		
Total Non-Farm Employment	0	1	2	0	7	9	10	5	11	6	11	9	6	$81,763	
GDP	-$113,883	-$29,507	-$73,547	-$722,801	$402,678	$839,000	$1,124,682	$48,748	$1,672,277	$304,948	$1,762,191	$1,764,041	$581,569		
State Revenues	-$10,192	$0	$10,566	-$13,797	$46,790	$72,229	$79,074	$50,733	$133,979	$92,202	$128,408	$92,234	$56,852		$0.12
State Expenditures	$1,568	-$6,395	$6,502	$47,883	-$17,238	-$30,235	-$37,818	$54,293	-$45,571	$67,056	-$19,975	-$3,884	$1,349		
Net State Revenue	-$11,760	$6,395	$4,064	-$61,680	$64,028	$102,464	$116,892	-$3,560	$179,550	$25,146	$148,382	$96,118	$55,503		
50% Scenario															
Changes in:															
Total Employment	-2	-2	-4	-17	-1	3	7	-11	13	-10	11	11	0		
Total Non-Farm Employment	0	1	2	0	8	10	10	7	13	7	13	10	7	$70,117	
GDP	-$113,976	-$14,563	-$44,322	-$693,039	$462,298	$900,300	$1,186,801	$194,040	$1,821,490	$304,615	$1,952,680	$1,887,385	$653,642		
State Revenues	-$10,505	$0	$17,068	-$7,710	$51,633	$80,124	$85,262	$74,675	$139,083	$95,928	$157,799	$107,380	$65,895		$0.14
State Expenditures	$1,490	-$4,557	$4,633	$51,048	-$17,238	-$27,212	-$31,114	$52,602	-$41,743	$74,600	-$18,167	-$3,689	$3,388		
Net State Revenue	-$11,995	$4,557	$12,435	-$58,758	$68,871	$107,336	$116,376	$22,073	$180,826	$21,328	$175,966	$111,069	$62,507		
100% Scenario															
Changes in:															
Total Employment	-2	-1	-3	-17	0	4	8	-8	15	-9	13	13	1		
Total Non-Farm Employment	0	1	3	1	8	11	11	10	15	8	16	12	8	$58,727	
GDP	-$70,943	$14,278	$44,516	-$663,856	$521,918	$977,000	$1,233,159	$387,867	$1,937,063	$354,848	$2,142,716	$2,028,762	$742,277		
State Revenues	-$8,624	$8,794	$27,634	$8,116	$76,341	$102,464	$111,735	$140,628	$168,613	$117,348	$215,915	$155,342	$93,692		$0.20
State Expenditures	-$3,136	-$7,994	$3,251	$51,129	-$18,880	-$26,876	-$27,504	$54,293	-$36,457	$86,614	-$5,707	$14,563	$6,941		
Net State Revenue	-$5,488	$16,788	$24,383	-$43,014	$95,221	$129,340	$139,239	$86,335	$205,070	$30,734	$221,622	$140,778	$86,751		

Table 3.3: Net Economic and Fiscal Impacts of the Child Day Care Tax Credit

Child Day Care	1995	1996	1997	1998	1999	2000	2001	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$338,911	$355,668	$504,864	$66,155	$245,018	$34,392	$9,208	$222,031		
20% Scenario										
Changes in:										
Total Employment	-6	-5	-5	3	-1	1	1	-2		
Total Non-Farm Employment	0	2	5	4	3	2	1	2	$91,597	
GDP	-$355,650	-$276,038	-$236,126	$294,725	-$44,959	$259,000	$249,702	-$15,621		
State Revenues	-$39,984	-$33,576	-$34,136	-$18,666	-$39,402	-$35,275	-$36,099	-$33,877		-$0.15
State Expenditures	-$19,600	-$48,766	-$78,839	-$103,882	-$98,504	-$109,183	-$99,702	-$79,782		
Net State Revenue	-$20,384	$15,189	$44,702	$85,216	$59,103	$73,909	$63,603	$45,905		
50% Scenario										
Changes in:										
Total Employment	-4	-4	-3	2	-1	1	1	-1		
Total Non-Farm Employment	2	3	6	3	3	2	1	3	$75,786	
GDP	-$341,648	-$334,101	-$354,189	$191,330	-$89,918	$198,000	$219,001	-$73,075		
State Revenues	-$37,632	-$31,977	-$37,387	-$13,797	-$34,477	-$26,036	-$24,925	-$29,462		-$0.13
State Expenditures	-$21,168	-$48,766	-$78,839	-$92,520	-$96,863	-$107,504	-$103,140	-$78,400		
Net State Revenue	-$16,464	$16,788	$41,451	$78,723	$62,386	$81,468	$78,214	$48,938		
100% Scenario										
Changes in:										
Total Employment	-1	-1	-2	0	0	0	0	-1		
Total Non-Farm Employment	6	6	8	1	4	1	0	4	$60,062	
GDP	-$341,648	-$406,442	-$575,799	-$44,450	-$268,778	$46,000	$94,150	-$213,852		
State Revenues	-$34,496	-$36,774	-$52,830	-$18,666	-$32,835	-$14,278	-$14,611	-$29,213		-$0.13
State Expenditures	-$26,656	-$45,568	-$66,647	-$66,549	-$75,520	-$77,268	-$75,636	-$61,978		
Net State Revenue	-$7,840	$8,794	$13,817	$47,883	$42,685	$62,990	$61,024	$32,765		

Table 3.4: Net Economic and Fiscal Impacts of the Child Day Care Tax Credit

Clean Alternative Fuels	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	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	$235,558		
20% Scenario															
Changes in:															
Total Employment	24	15	22	10	10	6	2	2	0	-1	-1	-1	7		
Total Non-Farm Employment	39	21	35	12	13	7	1	2	0	-1	-1	-2	11	$22,309	
GDP	$1,410,465	$944,239	$1,668,366	$914,131	$924,597	$717,000	$453,352	$420,720	$232,231	$151,919	$138,167	$53,176	$669,030		
State Revenues	$85,455	$42,370	$86,966	$37,333	$43,506	$15,958	-$8,595	-$15,131	-$24,608	-$40,979	-$56,119	-$81,554	$7,050		$0.03
State Expenditures	-$105,839	-$45,568	-$47,953	$8,116	$9,030	$17,637	$26,644	$18,691	$15,494	$9,313	-$9,512	-$18,447	-$10,199		
Net State Revenue	$191,294	$87,938	$134,920	$29,217	$34,477	-$1,680	-$35,239	-$33,822	-$40,103	-$50,292	-$46,607	-$63,107	$17,250		
50% Scenario															
Changes in:															
Total Employment	85	41	76	21	23	9	-2	1	-2	-4	-4	-3	20		
Total Non-Farm Employment	96	45	85	22	25	10	-2	2	-2	-4	-3	-3	23	$10,464	
GDP	$4,742,933	$2,396,769	$4,843,488	$1,385,691	$1,596,053	$793,000	-$47,075	$193,934	-$99,837	-$202,929	-$207,250	-$176,866	$1,268,159		
State Revenues	$309,677	$176,675	$317,793	$126,606	$131,339	$91,546	$27,504	$37,382	$11,848	-$10,245	-$18,072	-$33,010	$97,420		$0.41
State Expenditures	-$293,213	-$30,379	-$92,656	$146,896	$131,339	$176,373	$196,825	$170,000	$161,322	$149,014	$125,554	$105,826	$78,909		
Net State Revenue	$602,889	$207,054	$410,449	-$20,289	$0	-$84,827	-$169,321	-$132,618	-$149,473	-$159,258	-$143,626	-$138,836	$18,512		
100% Scenario															
Changes in:															
Total Employment	186	84	166	39	45	15	-8	1	-7	-9	-8	-7	41		
Total Non-Farm Employment	190	85	169	39	46	16	-8	1	-6	-9	-7	-7	42	$5,552	
GDP	$10,311,981	$4,822,093	$10,055,682	$2,226,382	$2,744,468	$824,000	-$796,181	-$145,185	-$778,081	-$947,001	-$725,941	-$670,474	$2,243,479		
State Revenues	$685,992	$391,724	$720,927	$289,734	$303,722	$190,651	$88,528	$110,367	$74,737	$58,674	$48,510	$36,894	$250,038		$1.06
State Expenditures	-$613,081	-$16,788	-$191,001	$368,457	$329,990	$430,855	$480,460	$404,084	$400,114	$374,397	$328,153	$296,120	$215,980		
Net State Revenue	$1,299,074	$408,512	$911,928	-$78,723	-$26,268	-$240,204	-$391,932	-$293,717	-$325,377	-$315,723	-$279,643	-$259,226	$34,058		

Clean Alternative Fuels (Not available for income years beginning on or after 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 3.4 shows the microsimulation results for the clean alternative fuels tax credit program. The average credit claimed during the life of the program (1995 through 2007) was $235,558. 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 $2,826,696 suggesting that several alternative fuel vehicles were purchased whose total price difference was $28,266,960 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.

Donation of Open Space Land (Expired)

This 1999 law allows a firm to claim a tax credit equal to 50% of the value of the land it donates to be permanently preserved open space land. We assume the donation of open space would not have occurred were it not for the credit. We enter the value of the land (twice the credit amount) into the economic model as an increase in the non-pecuniary amenity value of the region. In other words, the donation improves the quality of life in Connecticut by at least the value of the donation. The cost of capital for firms in the donating industry decreases by the amount of the credit claimed. We reduce state spending by the amount of the credit claimed for the donation of open space land.

Table 3.5 shows the microsimulation results for the donation of the open space land tax credit program. The annual average claim over the life of this program (1999 through 2001) was $436,318 suggesting that the annual average value of land donated was $872,636. 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 3.5 do not realistically reflect the value of the program. We do not know how many acres of open space increased the state's stock of open space because of this program, but our quality of life nonetheless increased incrementally because of this program.

Table 3.5: Net Economic and Fiscal Impacts of the Open Space Land Tax Credit

Open Space	1999	2000	2001	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$86,033	$665,663	$557,257	$436,318		
Changes in:						
Total Employment	-2	-8	0	-3		
Total Non-Farm Employment	0	3	9	4	$107,230	
GDP	-$59,620	-$412,000	$187,379	-$94,747		
State Revenues	$3,119	$20,829	$67,213	$30,387		$0.07
State Expenditures	$12,559	$100,953	$114,743	$76,085		
Net State Revenue	-$9,440	-$80,124	-$47,530	-$45,698		

Land Donation Credit (Active)

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 3.6 shows the microsimulation results for the donation of the land donation tax credit program. The annual average claim from 2003 through 2007 was $315,293 suggesting that the annual average value of land donated was $630,586. 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 3.6 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.

Electronic Data Processing

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. We increase demand for computers and other electronic data processing equipment by 20%, 50% and 100% of the sum of the credits claimed across all industries. 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 purchased 20%, 50% and 100% of electronic data processing equipment because the credit. For each scenario, we reduce state government spending each year by the amount of the electronic data processing credit claimed.

Table 3.7 shows the microsimulation results for the Electronic Data Processing tax credit program. From 1995 through 2007, the annual average claim was almost $28 million suggesting that investment in electronic data processing equipment was approximately $2 billion on average annually.[12] This program likely did not intend to create jobs and the results in Table 3.7 reflect that. However, net state revenue on average each year from 1995 through 2007 was positive except in the 100% case in which the investment occurred exclusively because of the tax credit. In this case, there is no residual profit used for other purposes (no amount of the credit claimed reduces a firm's capital cost). In this case, the demand for EDP equipment is countered only by the tax cost that overwhelms the benefit of the former. One reason is that Connecticut does not produce much EDP equipment and the EDP investment flowed to other regions and/or countries. Nevertheless, in the 100% case, the annual average tax cost of $28 million that we build into the model produces a net fiscal loss of $615,814 on average each year. This case is likely an optimistic one because it is probable that some EDP investment occurred irrespective of the credit.

[12] 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 3.6: Net Economic and Fiscal Impacts of the Land Donation Tax Credit

Land Donation	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$184,782	$1,234,270	$55,757	$6,778	$94,876	$315,293		
Changes in:								
Total Employment	-4	-26	3	3	2	-4		
Total Non-Farm Employment	-1	-7	3	3	2	0	$1,844,895	
GDP	-$242,576	-$1,887,687	$389,224	$380,185	$317,550	-$208,661		
State Revenues	-$3,382	-$85,218	$31,945	$18,167	$7,379	-$6,222		-$0.02
State Expenditures	$32,220	$219,014	$76,369	$65,345	$83,302	$95,250		
Net State Revenue	-$35,602	-$304,232	-$44,425	-$47,178	-$75,923	-$101,472		

Table 3.7: 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	Annual Average	Cost per Non-Farm Job	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	$27,985,407		
20% Scenario															
Changes in:															
Total Employment	-310	-433	-499	-18	-222	-135	-225	-87	-57	-545	-360	-313	-267		
Total Non-Farm Employment	153	142	194	414	271	289	214	197	167	-9	58	72	180	$155,323	
GDP	-$14,043,972	-$18,780,082	-$17,897,198	$15,289,948	$4,444,123	$12,497,000	$9,447,739	$22,023,663	$25,732,012	-$8,256,873	$8,191,471	$13,793,271	$4,370,092		
State Revenues	-$586,426	-$835,411	-$494,164	$1,325,308	$550,804	$855,830	$332,626	$743,194	$641,640	-$1,468,716	-$773,299	-$929,136	-$53,146		$0.00
State Expenditures	$90,943	$144,698	$0	-$1,842,284	-$938,255	-$1,253,090	-$874,111	-$1,392,042	-$1,383,537	$545,763	-$585,919	-$933,020	-$701,738		
Net State Revenue	-$677,369	-$980,109	-$494,164	$3,167,592	$1,489,059	$2,108,921	$1,206,737	$2,135,237	$2,025,178	-$2,014,478	-$187,380	$3,884	$648,592		
50% Scenario															
Changes in:															
Total Employment	-495	-646	-757	-298	-448	-346	-402	-215	-155	-641	-458	-409	-439		
Total Non-Farm Employment	-17	-54	-42	160	67	101	58	87	85	-90	-23	-7	27	$1,031,527	
GDP	-$25,695,475	-$33,318,702	-$36,960,510	-$6,841,486	-$14,943,083	-$7,172,000	-$9,291,164	$4,818,670	$9,952,272	-$24,755,093	-$9,901,567	-$5,292,122	-$13,283,355		
State Revenues	-$1,077,988	-$1,510,935	-$1,508,501	-$86,839	-$643,562	-$392,221	-$785,583	-$307,068	-$252,464	-$2,098,299	-$1,539,940	-$1,659,242	-$988,553		-$0.04
State Expenditures	$995,669	$806,631	$477,096	-$1,577,709	-$1,127,055	-$1,683,945	-$1,593,512	-$2,405,813	-$2,544,688	-$680,806	-$1,861,435	-$2,259,248	-$1,121,235		
Net State Revenue	-$2,073,657	-$2,317,566	-$1,985,597	$1,490,870	$483,493	$1,291,724	$807,930	$2,098,744	$2,292,224	-$1,417,492	$321,495	$600,007	$132,681		
100% Scenario															
Changes in:															
Total Employment	-802	-1,001	-1,185	-764	-824	-695	-695	-427	-317	-801	-620	-569	-725		
Total Non-Farm Employment	-302	-379	-432	-263	-271	-212	-202	-96	-51	-224	-157	-139	-227	-$123,135	
GDP	-$45,080,730	-$57,355,875	-$68,545,280	-$43,614,474	-$47,260,957	-$39,856,000	-$40,490,604	-$23,673,689	-$16,392,871	-$52,166,003	-$39,952,816	-$37,077,219	-$42,622,210		
State Revenues	-$1,900,395	-$2,586,177	-$3,134,854	-$2,388,477	-$2,603,801	-$2,402,876	-$2,500,284	-$1,901,153	-$1,620,507	-$2,981,204	-$2,607,150	-$2,633,039	-$2,438,326		-$0.09
State Expenditures	$2,495,445	$1,910,653	$1,274,423	-$1,148,384	-$1,475,104	-$2,446,550	-$2,818,299	-$4,093,353	-$4,469,609	-$2,703,666	-$3,958,759	-$4,436,942	-$1,822,512		
Net State Revenue	-$4,395,840	-$4,496,830	-$4,409,278	-$1,240,092	-$1,128,697	$43,673	$318,015	$2,192,200	$2,849,102	-$277,538	$1,351,609	$1,803,903	-$615,814		

Employee Training (This program ceased in 1997.)

We view the credits as reducing the cost of employee training. Because this represents a reduction in the price of a service, we expect an increase in the amount of training claiming firms purchase. Therefore, we increase education spending (for example, for community college tuition and supplies) by 20%, 50% and 100% of the credit amount. In addition, the increased training raises labor productivity at least so that the investment reduces production costs by the amount of the investment in training. 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 purchased 20%, 50% and 100% of the cost of employee training because of the credit. We reduce state government spending each year by the amount of the employee training credit claimed. Please refer to CGS §12-217k.

Table 3.8 Net Economic and Fiscal Impacts of the Employee Training Tax Credit

Employee Training	1995	1996	1997	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$386,854	$1,152,161	$1,859,704	$1,132,906		
20% Scenario						
Changes in:						
Total Employment	-8	-24	-32	-21		
Total Non-Farm Employment	0	-1	2	0	$5,568,019	
GDP	-$398,776	-$1,336,213	-$1,565,206	-$1,100,065		
State Revenues	-$35,907	-$94,573	-$80,627	-$70,369		-$0.06
State Expenditures	$14,974	$53,402	$66,647	$45,008		
Net State Revenue	-$50,881	-$147,976	-$147,274	-$115,377		
50% Scenario						
Changes in:						
Total Employment	-6	-17	-23	-15		
Total Non-Farm Employment	2	5	11	6	$184,382	
GDP	-$327,646	-$1,060,366	-$1,240,630	-$876,214		
State Revenues	-$28,224	-$71,949	-$52,830	-$51,001		-$0.05
State Expenditures	$6,272	$33,576	$49,579	$29,809		
Net State Revenue	-$34,496	-$105,526	-$102,409	-$80,810		
100% Scenario						
Changes in:						
Total Employment	-2	-5	-6	-5		
Total Non-Farm Employment	5	16	27	16	$70,666	
GDP	-$199,388	-$610,043	-$634,928	-$481,453		
State Revenues	-$16,464	-$28,940	-$1,544	-$15,649		-$0.01
State Expenditures	-$5,958	$3,038	$15,524	$4,201		
Net State Revenue	-$10,505	-$31,977	-$17,068	-$19,850		

Table 3.8 reports the microsimulation results for the Employee Training tax credit program. From 1995 through 1997, the annual average claim was $1.13 million. As modeled, the economic and fiscal benefits from additional spending on education, reductions in the cost of capital and the gains in worker productivity were insufficient to offset the tax cost of the claims. Without knowing how many people were trained and the change in their level of training, we

cannot realistically evaluate the net benefit of this program. We do not capture the ongoing benefits workers with higher productivity provide their companies.

Employer-Assisted Housing (This credit was repealed effective June 7, 2006.)
Firms could claim a credit for each dollar they put into a revolving loan fund for new housing for low-income workers. The credit was limited to $100,000 per year. The fund had to be established and maintained by the corporation for five years and provide revolving loans for housing to its low- and moderate-income employees. Please refer to CGS §12-217p.

We assume that 90% of the firms' contribution goes towards new construction and 10% towards individuals. We increase investment in new residential capital by 20%, 50% and 100% of 90% of the amount of the credits claimed (this represents the additional funds borrowed and used to purchase new housing by low- and moderate-income workers). We increase total consumer spending on housing by 20%, 50% and 100% of 10% of the amount of the credits claimed. 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 contributed 20%, 50% and 100% into a revolving loan fund for new housing for low-income workers because of the credit. We reduce state government spending each year by the full amount of the employer assisted housing credit claimed.

Table 3.9 reports the microsimulation results for the Employer-Assisted Housing tax credit program. From 1995 through 2007, the annual average claim was $214,448 (it is not clear why the claim amount in some years exceeded $100,000). This program ostensibly intended to provide increased access to housing for low- and moderate-income workers. We do not know how many workers obtained loans or the size of the loans obtained and whether these loans leveraged additional capital enabling workers to purchase affordable homes. It is clear from Table 3.9 that the program created insignificant economic and fiscal impact while it may have helped low- and moderate-income households obtain housing that they would otherwise not have been able to obtain.

Fixed Capital
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. We assume the firm spends the amount it did irrespective of the credit because it is quite small (5% of the firm's expenditure on fixed capital) relative to the investment and firms spend the small increase in profit due to the credit in unknown (but presumably the most productive) ways. Therefore, we assume the amount of the credit reduces the firm's cost of capital dollar-for-dollar. We reduce state government spending each year by the amount of the fixed capital credit claimed.

Table 3.10 reports the microsimulation results for the Fixed Capital tax credit program. From 1995 through 2007, the annual average claim was $48.5 million implying that the annual average investment in fixed capital (e.g., machines) was $9.7 billion on average each year from 1995 through 2007. Despite the large tax cost, the program has on average paid for itself. If the credit induced additional spending on fixed capital, we have not captured the enduring but small effects of its productivity gains.

Table 3.9: Net Economic and Fiscal Impacts of the Employer-Assisted Housing Tax Credit

Employer-Assisted Housing	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$525,942	$467,425	$515,057	$167,060	$454,850	$156,273	$135,026	$16,334	$8,029	$11,898	$83,049	$32,428	$214,448		
20% Scenario															
Changes in:															
Total Employment	-11	-5	-7	1	-2	3	1	3	1	0	-360	-313	-57		
Total Non-Farm Employment	-1	3	3	4	5	6	3	3	1	0	58	72	13	$16,329	
GDP	-$584,349	-$203,697	-$221,610	$294,725	$89,918	$534,000	$406,277	$469,468	$314,705	$270,572	$8,191,471	$13,793,271	$1,946,229		
State Revenues	-$50,959	-$30,379	-$32,511	-$20,289	$0	-$5,039	-$29,223	-$35,602	-$45,571	-$66,125	-$773,299	-$929,136	-$168,178		-$0.784
State Expenditures	$16,464	-$23,184	-$20,319	-$51,129	-$37,760	-$70,549	-$61,024	-$64,084	-$67,445	-$70,781	-$585,919	-$933,020	-$164,063		
Net State Revenue	-$67,423	-$7,195	-$12,192	$30,840	$37,760	$65,510	$31,801	$28,482	$21,874	$4,657	-$187,380	$3,884	-$4,115		
50% Scenario															
Changes in:															
Total Employment	-11	-6	-8	0	-4	1	0	2	1	1	-1	0	-2		
Total Non-Farm Employment	0	2	2	3	4	4	3	2	1	0	0	0	2	$132,586	
GDP	-$626,355	-$334,101	-$354,189	$132,385	-$149,538	$290,000	$234,351	$323,223	$214,868	$202,929	$16,988	$87,855	$3,201		
State Revenues	-$47,823	-$23,184	-$29,260	-$8,927	-$4,925	-$3,359	-$14,611	-$16,911	-$17,317	-$27,009	-$36,144	-$40,777	-$22,521		-$0.11
State Expenditures	$14,896	-$13,590	-$10,566	-$40,579	-$23,805	-$49,552	-$43,834	-$48,953	-$45,571	-$44,704	-$47,558	-$46,602	-$33,368		
Net State Revenue	-$62,719	-$9,593	-$18,694	$31,652	$18,880	$46,193	$29,223	$32,042	$28,254	$17,695	$11,414	$5,825	$10,848		
100% Scenario															
Changes in:															
Total Employment	-10	-9	-9	-3	-8	-2	-2	0	0	0	-1	0	-4		
Total Non-Farm Employment	1	0	0	0	0	0	1	1	0	0	0	0	0	$555,084	
GDP	-$641,290	-$595,861	-$664,830	-$206,791	-$566,877	-$153,000	-$77,776	$64,645	$49,919	$51,009	-$104,191	-$17,340	-$238,532		
State Revenues	-$39,984	-$39,972	-$47,953	-$21,913	-$41,864	-$19,317	-$14,611	$1,780	$1,823	$3,725	-$10,463	-$14,563	-$20,276		-$0.09
State Expenditures	$31,360	$7,994	$3,251	-$25,159	-$12,313	-$38,634	-$36,099	-$45,393	-$43,748	-$39,116	-$41,851	-$42,719	-$23,536		
Net State Revenue	-$71,343	-$47,966	-$51,205	$3,246	-$29,551	$19,317	$21,487	$47,173	$45,571	$42,841	$31,389	$28,156	$3,260		

Table 3.10 Net Economic and Fiscal Impacts of the Fixed Capital Tax Credit

Fixed Capital Investment	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	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	$48,500,613		
Changes in:												
Total Employment	-364	-465	-413	-309	-355	-667	-377	-1,118	-395	-496		
Total Non-Farm Employment	9	188	434	557	389	200	245	-6	217	248	$195,488	
GDP	-$17,541,950	-$19,544,083	-$12,348,075	-$188,606	$2,929,665	-$13,000,000	$10,320,681	-$40,387,674	$16,298,210	-$8,162,426		
State Revenues	$0	$914,714	$2,183,740	$2,793,464	$3,223,366	$1,354,155	$2,248,582	-$794,930	$1,803,129	$1,525,136		$0.03
State Expenditures	$1,205,813	$1,372,071	$1,091,870	$638,506	$1,074,455	$2,200,502	$864,839	$3,533,022	$180,313	$1,351,266		
Net State Revenue	-$1,205,813	-$457,357	$1,091,870	$2,154,958	$2,148,911	-$846,347	$1,383,743	-$4,327,951	$1,622,816	$173,870		

Grants to Higher Education

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.[13] 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 3.11 reports the microsimulation results for the Grants to Higher Education tax credit program. From 1995 through 2007, the annual average claim was $60,000 implying that the annual average grants to higher education were on average $240,000 more each year over the period 1995 through 2007. However, closer examination of the claims in row 2 of Table 3.11 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.

This program mostly paid for itself while under the under the assumption that firms did not need the credit to increase their grants (the 100% case), the average annual net state revenue is $4,400 in the red.

Human Capital

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

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

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.

We increase the demand for higher education in Connecticut by the amount of the credits claimed each year. This represents the added amount we assume firms spent educating workers because of (that is, induced by) the credit. In addition, we assume increased worker productivity reduces firms' production costs by the amount of the credit claimed. These reductions in production costs are cumulative. The amount of the credit does not reduce the firm's cost of capital because its benefit is increased output (sales) from increased worker productivity. We reduce state government spending each year by the amount of the human capital credit claimed. We do not model a range of inducement because the return to (reward for) human capital investment is 20 times smaller than the investment. We assume therefore that these incremental investments (5% of the total) occurred because of the tax credit program.

Table 3.12 reports the microsimulation results for the Human Capital tax credit program. From 1995 through 2007, the annual average claim was $2 million implying that the average investment in human capital was $40 million each year from 1995 through 2007. 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 3.11: Net Economic and Fiscal Impacts of the Grants to Higher Education Tax credit

Grants to Higher Education	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$250	$3,804	$45,843	$87,076	$319,005	$0	$5,446	$2,042	$1,512	$229,755	$0	$21,659	$59,699		
20% Scenario															
Changes in:															
Total Employment	0	0	0	0	0	2	2	2	1	0	1	0	1		
Total Non-Farm Employment	0	0	1	2	5	2	2	1	1	3	1	1	2	$38,357	
GDP	$0	$0	$29,516	$14,785	$89,528	$228,900	$203,036	$210,254	$99,403	$135,397	$241,905	$141,146	$116,156		
State Revenues	$0	-$1,519	$4,633	$1,542	$9,358	$6,383	$9,798	$6,764	$0	$3,539	-$9,036	-$14,855	$1,384		$0.02
State Expenditures	-$1,490	$0	-$1,544	$1,542	$6,239	-$3,192	-$4,899	-$1,691	-$3,463	$1,770	-$7,229	-$9,223	-$1,932		
Net State Revenue	$1,490	-$1,519	$6,177	$0	$3,119	$9,575	$14,697	$8,456	$3,463	$1,770	-$1,807	-$5,631	$3,316		
50% Scenario															
Changes in:															
Total Employment	0	0	-1	-1	-5	1	1	1	1	-3	0	0	0		
Total Non-Farm Employment	0	0	0	0	1	1	1	1	0	0	1	0	0	$119,770	
GDP	$0	$0	-$44,322	-$58,945	-$298,295	$167,800	$124,953	$97,073	$66,197	-$203,040	$172,822	$52,944	$6,432		
State Revenues	$0	-$1,519	-$1,544	-$7,710	-$18,798	-$1,596	$1,633	$0	$1,732	-$21,328	-$14,553	-$33,301	-$8,082		-$0.14
State Expenditures	-$1,490	$0	$3,089	$3,084	$14,119	-$16,042	-$13,150	-$13,618	-$10,390	$1,770	-$19,975	-$14,855	-$5,621		
Net State Revenue	$1,490	-$1,519	-$4,633	-$10,794	-$32,917	$14,446	$14,783	$13,618	$12,122	-$23,097	$5,422	-$18,447	-$2,461		
100% Scenario															
Changes in:															
Total Employment	0	0	-1	-1	-4	0	0	0	0	-3	0	0	-1		
Total Non-Farm Employment	0	0	0	1	2	0	0	0	0	1	0	0	0	$154,441	
GDP	$0	$0	-$44,322	-$103,202	-$343,059	$15,300	$0	$0	$0	-$270,683	$34,542	-$35,258	-$62,223		
State Revenues	$0	-$1,519	-$3,089	-$6,168	-$29,716	-$1,596	$0	$3,382	$5,195	-$17,789	$7,229	$0	-$3,672		-$0.06
State Expenditures	-$1,490	$0	$3,089	$4,626	$11,000	-$4,787	-$1,633	-$3,382	-$3,463	$8,848	-$3,614	$0	$766		
Net State Revenue	$1,490	-$1,519	-$6,177	-$10,794	-$40,715	$3,192	$1,633	$6,764	$8,659	-$26,636	$10,843	$0	-$4,438		

Table 3.12: Net Economic and Fiscal Impacts of the Human Capital Tax Credit

Human Capital Investment	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$1,501,855	$2,865,262	$2,538,752	$2,964,233	$1,323,432	$2,258,417	$1,443,930	$1,692,881	$1,514,328	$2,011,454		
Changes in:												
Total Employment	-9	-2	35	65	118	140	180	204	230	107		
Total Non-Farm Employment	18	47	73	106	126	158	182	206	225	127	$15,878	
GDP	-$774,695	-$233,268	$3,121,114	$6,115,564	$11,756,744	$14,862,000	$20,223,426	$24,252,433	$28,786,047	$12,012,152		
State Revenues	$30,145	$237,063	$645,763	$988,088	$1,461,259	$1,809,490	$2,276,257	$2,663,898	$3,050,895	$1,462,540		$0.73
State Expenditures	$41,450	$54,121	$17,938	$51,879	$50,417	$200,584	$301,829	$491,973	$697,811	$212,000		
Net State Revenue	-$11,304	$182,943	$627,825	$936,209	$1,410,843	$1,608,905	$1,974,428	$2,171,925	$2,353,084	$1,250,540		

Industrial Waste Credit (This program ceased in 1997.)

Please refer to CGS §§ 12-217c and 12-217d. A 5% credit was available for expenditures paid or incurred in the income year for the construction, rebuilding, acquisition, expansion or planning of industrial waste treatment facilities approved by the Department of Environmental Protection (DEP). We assume the firm spent the amount it did irrespective of the credit because it is small (5% of the firm's expenditure on the construction, rebuilding, acquisition, expansion or planning of industrial waste treatment facilities) and we assume the small increase in profit due to the credit was spent in unknown ways. Therefore, we assume the amount of the credit reduced the firm's cost of capital dollar-for-dollar. We reduce state government spending each year by the amount of the industrial waste credit claimed.

Table 3.13 shows the microsimulation results for the Industrial Waste tax credit from 1995 through 2000. The annual average credit amount of $78,836 suggests that investment in the construction, rebuilding, acquisition, expansion or planning of industrial waste treatment facilities was approximately $1,576,720 on average each year. We note that 80% of the total investment over the six-year analysis of the occurred in 1997. This program was likely not intended to create jobs or generate tax revenue and we do not know the amount by which the investments reduced pollution or industrial waste. Therefore, the results reported in Table 3.13 do not realistically reflect the benefit of this program.

Machinery and Equipment Expenditure 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 251and 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.

We increase firms' investment in new producers' durable goods by 20%, 50% and 100% of the amount of the credits claimed in each year which we assume represents the firms' collective spending beyond what they would have done without the incentive. We assume the firm's cost of capital declines by 80%, 50% and 0% of the credit claimed because the firm would have spent 20%, 50% and 100% of its claim on machinery and equipment because of the credit. We reduce

state government spending each year by the amount of the machinery and equipment expenditure credit claimed. The economic model endogenously increases the stock of non-residential capital according to historic investments in producers' durable capital.

Table 3.14 shows the microsimulation 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. Except for the 100% case in which firms made their incremental investment in machinery and equipment exclusively because of the credit, the credit pays for itself. In the 100% case, net state revenue on average over the 1997 through 2007 period is negative and relatively small. 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 3.13: Net Economic and Fiscal Impacts of the Industrial Waste Treatment Tax Credit

Industrial Waste Treatment	1995	1996	1997	1998	1999	2000	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$41,385	$48,056	$379,098	$3,390	$0	$1,087	$78,836		
Changes in:									
Total Employment	-1	1	-7	2	2	1	0		
Total Non-Farm Employment	0	2	0	2	2	1	1	$63,526	
GDP	-$42,939	$72,341	-$325,157	$221,285	$193,520	$153,000	$45,342		
State Revenues	-$4,704	$13,590	-$3,251	$17,043	$12,313	$6,719	$6,952		$0.09
State Expenditures	$4,704	-$6,395	$25,196	-$8,927	-$3,283	$0	$1,882		
Net State Revenue	-$9,408	$19,986	-$28,447	$25,971	$15,597	$6,719	$5,070		

Table 3.14: Net Economic and Fiscal Impacts of the Machinery and Equipment Tax Credit

Machinery and Equipment	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
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	$4,651,542		
20% Scenario													
Changes in:													
Total Employment	-264	-155	-64	-38	63	64	25	21	20	8	-32		
Total Non-Farm Employment	-37	18	59	67	103	78	51	38	29	29	44	$106,857	
GDP	-$13,806,603	-$6,104,190	$133,900	$2,823,000	$9,665,717	$9,895,918	$6,954,979	$6,514,790	$6,117,839	$5,027,400	$2,722,275		
State Revenues	-$326,734	$21,913	$300,439	$419,936	$731,434	$643,508	$476,673	$419,101	$357,639	$336,897	$338,081		$0.07
State Expenditures	$902,175	$322,197	-$62,386	-$123,461	-$440,923	-$315,969	-$62,888	$7,451	$47,558	$118,448	$39,220		
Net State Revenue	-$1,228,908	-$300,284	$362,825	$543,398	$1,172,357	$959,477	$539,561	$411,650	$310,081	$218,449	$298,861		
50% Scenario													
Changes in:													
Total Employment	-296	-200	-115	-87	15	33	5	7	10	-4	-63		
Total Non-Farm Employment	-66	-22	14	24	60	51	33	26	22	19	16	$290,659	
GDP	-$16,420,248	-$10,070,706	-$4,459,175	-$2,151,500	$4,700,230	$6,031,550	$3,924,371	$4,027,083	$4,112,836	$2,734,032	-$757,153		
State Revenues	-$668,178	-$380,793	-$123,705	-$27,212	$295,066	$324,246	$205,161	$190,086	$181,388	$111,069	$10,713		$0.00
State Expenditures	$948,747	$337,454	-$89,229	-$222,650	-$581,967	-$548,361	-$347,707	-$303,802	-$275,743	-$179,614	-$126,287		
Net State Revenue	-$1,616,925	-$718,247	-$34,477	$195,438	$877,033	$872,608	$552,868	$493,887	$457,131	$290,683	$137,000		
100% Scenario													
Changes in:													
Total Employment	-350	-275	-199	-170	-66	-20	-31	-17	-6	-26	-116		
Total Non-Farm Employment	-114	-90	-63	-50	-13	5	2	6	10	1	-31	-$152,483	
GDP	-$20,731,969	-$16,602,586	-$12,094,915	-$10,452,300	-$3,654,040	-$420,402	-$1,274,989	-$304,615	$553,006	-$1,164,197	-$6,614,701		
State Revenues	-$1,212,247	-$1,061,870	-$876,772	-$829,794	-$465,591	-$264,791	-$297,306	-$229,108	-$172,352	-$314,761	-$572,459		-$0.12
State Expenditures	$1,030,918	$369,999	-$136,182	-$384,494	-$818,072	-$948,974	-$827,479	-$829,540	-$818,194	-$683,308	-$404,533		
Net State Revenue	-$2,243,164	-$1,431,869	-$740,589	-$445,301	$352,481	$684,184	$530,174	$600,432	$645,843	$368,548	-$167,926		

Neighborhood Assistance 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.

We assume 20%, 50% and 100% of the credit claimed is additional spending by firms on this program beyond the level they would have done without the incentive. For modeling purposes, we assign half the new spending as net new output (sales) of nonprofits and half as increased spending of local government. The amount of the credit reduces the firm's cost of capital by 80%, 50% and 0% because the firm would have invested 20%, 50% and 100% of the credit claimed in these programs in any case. We reduce state government spending each year by the amount of the neighborhood assistance program credit claimed.

Table 3.15 shows the microsimulation results for the Neighborhood Assistance tax credit program from 1995 through 2007. Claims for this credit averaged $1.66 million each 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 $1.66 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 3.15 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.

Research and Development (Nonincremental) Expenditures

A credit may be applied against the Connecticut corporation business tax for research and development (R & D) expenses incurred in Connecticut. We assume for purposes of this analysis that the R & D activity qualifying for this credit occurs irrespective of the credit (qualifying R & D expenditure is nonincremental). The effect of the credit is to reduce the claiming firms' cost of capital that may feed back to produce additional R & D or it may be used for other purposes. We assume the inducement to produce additional R & D is negligible because the credit represents a quite small fraction of the industry's R & D expenditure (from 1% for firms with R & D expenditures of $50 million or less to 6% for qualified small businesses). We reduce state government spending each year by the total amount of the research and development credit claimed across all industries.

Table 3.16 shows the microsimulation results for the Research and Development (nonincremental) tax credit program from 1995 through 2007. Claims averaged $16.4 million over the period; however, the largest amounts claimed occurred between 1997 and 2001 when claims averaged $31.8 million. This credit ostensibly intended to stimulate R & D spending beyond what firms would do absent the credit. If they did, firms added new staff and equipment to existing workforces and capital stocks. However, this credit does not require firms to undertake more R & D activity than they would absent the credit. Therefore, we assume the credits claimed reduced the claiming firms' cost of capital and they put their increased profit to best use. The results show modest job gains in both the public and private sectors and respectable net state revenue gains on average over the period 1995 through 2007. In this case, the reported results may be meaningful and show that the average cost per non-farm job created was $14,855 and the tax revenue earned per dollar of credit claimed (tax cost) is $0.61.

Table 3.15: 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	Annual Average	Cost per Non-Farm Job	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	$1,657,415		
20% Scenario															
Changes in:															
Total Employment	-10	-3	2	7	0	1	9	-1	-2	-4	-11	-3	-1		
Total Non-Farm Employment	16	27	33	40	36	31	24	16	12	9	6	7	22	$76,458	
GDP	-$470,466	$203,697	$870,957	$1,401,152	$1,312,614	$1,694,000	$2,404,916	$1,827,004	$1,888,230	$1,810,834	$1,278,608	$1,992,927	$1,351,206		
State Revenues	-$24,304	$50,364	$94,281	$153,388	$158,428	$166,295	$132,363	$82,775	$45,571	$12,107	-$63,728	-$51,457	$63,007		$0.04
State Expenditures	-$41,552	-$68,752	-$75,588	-$78,723	-$41,044	-$38,634	-$61,884	-$13,351	-$10,026	-$7,451	$10,463	-$36,894	-$38,619		
Net State Revenue	$17,248	$119,116	$169,869	$232,112	$199,472	$204,929	$194,247	$96,126	$55,597	$19,558	-$74,191	-$14,563	$101,626		
50% Scenario															
Changes in:															
Total Employment	-7	-3	0	3	-2	-1	4	-2	-2	-3	-9	-2	-2		
Total Non-Farm Employment	16	23	26	31	28	25	18	13	10	8	7	6	18	$93,800	
GDP	-$541,409	-$203,697	$148,063	$471,560	$343,059	$656,000	$1,249,533	$857,335	$976,670	$879,358	$501,704	$987,215	$527,116		
State Revenues	-$29,792	-$1,599	$8,128	$49,506	$34,477	$47,873	$36,099	$32,042	$20,963	-$10,245	-$67,533	-$59,224	$5,058		$0.00
State Expenditures	-$28,224	-$48,766	-$56,081	-$57,622	-$37,760	-$42,834	-$61,024	-$24,031	-$22,786	-$9,313	$0	-$24,272	-$34,393		
Net State Revenue	-$1,568	$47,167	$64,209	$107,128	$72,237	$90,706	$97,123	$56,073	$43,748	-$931	-$67,533	-$34,952	$39,451		
100% Scenario															
Changes in:															
Total Employment	0	-1	-2	-3	-4	-4	-3	-3	-3	-3	-4	-3	-3		
Total Non-Farm Employment	15	17	16	17	17	14	7	8	6	6	7	4	11	$148,932	
GDP	-$655,292	-$871,898	-$945,472	-$1,149,911	-$1,237,356	-$1,068,000	-$624,255	-$759,839	-$661,966	-$659,796	-$898,083	-$582,619	-$842,874		
State Revenues	-$41,552	-$48,766	-$57,707	-$63,303	-$73,878	-$70,549	-$50,710	-$54,293	-$41,925	-$37,253	-$56,119	-$48,544	-$53,717		-$0.03
State Expenditures	-$1,568	-$3,198	-$1,626	$1,623	-$3,283	-$8,399	-$14,611	-$16,911	-$20,963	-$15,833	-$21,877	-$28,156	-$11,233		
Net State Revenue	-$39,984	-$45,568	-$56,081	-$64,926	-$70,595	-$62,151	-$36,099	-$37,382	-$20,963	-$21,421	-$34,242	-$20,389	-$42,483		

Table 3.16: 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	Annual Average	Cost per Non-Farm Job	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	$16,408,405		
Changes in:															
Total Employment	-102	582	444	506	1,743	4,576	2,754	1,504	303	-229	-530	-632	910		
Total Non-Farm Employment	5	708	1,375	974	1,865	4,652	3,102	1,426	339	-191	-455	-545	1,105	$14,855	
GDP	-$5,141,522	$32,098,425	$36,783,415	$48,259,533	$124,274,179	$301,880,000	$201,250,561	$128,846,165	$45,486,800	$5,025,537	-$20,166,670	-$29,845,346	$72,395,923		
State Revenues	-$382,588	$3,630,241	$7,521,374	$6,081,972	$12,991,918	$32,582,866	$24,808,594	$16,297,756	$8,811,619	$4,698,587	$1,977,477	$569,909	$9,965,810		$0.61
State Expenditures	$170,126	-$2,248,815	-$1,016,775	-$779,927	-$4,419,567	-$12,466,232	-$1,786,899	$4,677,227	$9,500,654	$10,556,686	$10,353,457	$9,300,102	$1,820,003		
Net State Revenue	-$552,714	$5,879,055	$8,538,150	$6,861,899	$17,411,484	$45,049,099	$26,595,494	$11,620,529	-$689,034	-$5,858,099	-$8,375,980	-$8,730,193	$8,145,807		

Research and Experimental (Incremental) Expenditures

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. 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.

We assume the credit induces 20%, 50% and 100% of firms' incremental research and experimental expenditure equal to the claim amount. 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 credit claim. In addition, we assume that the industry purchases durable equipment equal to 20%, 50% and 100% of 20% of the industry's credit claim. The amount of the credit reduces the firm's cost of capital; however, in the case in which the credit induced the firm to produce 20% (or 50% or 100%) more research and experimental activity, its cost of capital is reduced by 80% (or 50% or 0% respectively) of the credit claimed. That is, the portion of the credit received which the firm did not use for producing additional research and experimental activity was used for other purposes. We reduce state government spending each year by the amount of the research and experimental credit claimed across all industries.

Table 3.17 shows the results for the microsimulation of the Research and Experimental (incremental) tax credit program. The annual average credit claimed was $15.2 million over the period 1995 through 2007. 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 $75 million. Except for the 100% case in which we assume firms spent what they did only because of the credit, job creation and net state revenue were modest and positive on average over the period. In this case, there is no reduction in claiming firms' cost of capital (an additional benefit in the model) because we assume they spent the entire amount of their claim on the targeted activity. Another factor contributing to the least favorable results in each case but most noticeably in the 100% case is that Connecticut does not manufacture much producers' durable equipment (milling and grinding machines, metal fabrication equipment and related equipment). As such, this spending flows out of state. The 100% case is perhaps extreme in that we assume no incremental spending for research and experimental activity would have occurred without the credit.

SBA Guaranty Fee

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 3.18 shows the microsimulation results for the SBA Guaranty Fee tax credit program. The average annual claim from 1999 through 2007 was $60,207. However, in 2004, claims were $240,000 and in 2005 they were $179,000. 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 3.18 do not realistically represent the benefit of the tax credit.

Traffic Reduction

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. The employee must be employed in a severe nonattainment area and participate in an alternative means of commuting according to a qualifying traffic reduction program. The maximum credit allowed for all corporations is $1.5 million annually.

The credit may be applied against the Connecticut corporation business tax by Connecticut corporations that participate in traffic reduction programs that are established under CGS §13b-38p in Connecticut in order to achieve the goals of the federal Clean Air Act. To qualify for the credit, the corporation is required to employ 100 or more employees at a work location located in a severe nonattainment area. Please refer to CGS §§12-217s,13b-38o, 13b-38p, 13b-38t, 13b-38v and 13b-38x as well as Conn. Agencies Regs. §12-217s-1.

We model this credit as increased spending on transit and vans. We increase spending equally in the transit and ground passenger transportation and motor vehicle (vans) retail sales sectors by 20%, 50% and 100% of the amount of the credit claimed in each year. The amount of the credit reduces the firm's cost of capital by 80%, 50% and 0% because we assume the firm would have invested 20%, 50% and 100% of the credit claimed in these programs in any case. We reduce state government spending each year by the full amount of the traffic reduction credit claimed.

Table 3.19 reports the microsimulation results for the Traffic Reduction tax credit. The annual average claim from 1997 through 2005 was $98,962 (no claims were reported after 2005). Our model of this tax credit program implies that approximately $200,000 was spent on average each year over the period to transport workers to and from their worksites using mass transit and/or vans. Because we do not know how many vans were purchased or how workers used mass transit because of this program, we cannot estimate the vehicle miles or commute time saved This credit program did not intend to create jobs or increase tax revenue and the results reported in Table 3.19 do not realistically represent the benefit of the program.

Work Education Credits for High School Students (program ended in 1997)

A credit was available for employers that hire public high school students who are enrolled in state-approved Cooperative Work Education-Diversified Occupational (CWE/DO) programs. The credit was equivalent to 10% of wages paid to such students. Please refer to CGS §12-217f and Conn. Agencies Regs. §§12-217f-1 through 12-217f-4.

We increase new employment in the claiming industry using 20%, 50% and 100% of ten times the amount of the credit divided by the minimum wage on a 20 hour per week annualized basis. This reflects the range of inducement used to model this credit's net benefit. 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. Because firms paid different wages to the hired students and full-time adult workers, we adjust the wages of the student workers downward with respect to the industry average wage for the industry in which the hiring firm was located. We reduce state government spending each year by the amount of the Work Education credit claimed.

Table 3.20 reports the microsimulation results for the Work Education Credits for High School Students tax credit program. The annual average claim from 1995 through 1997 was $163,000 with the largest claim of $462,000 occurring in 1996. This suggests that the average payroll for high school students over the period was $1.63 million. For the 20% case, we estimate 233 high school students were hired over the period, while for the 50% and 100% cases, 503 and 956 students were hired over the three-year period. At each level of inducement, as modeled this tax credit program was successful and produced significant new employment and tax revenue. The highest average cost per non-farm job created was $858 for 20% case, while $35.37 was the largest amount of tax revenue earned per dollar of tax credit in the 100% case.

Table 3.17: 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	Annual Average	Cost per Non-Farm Job	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	$15,216,484		
20% Scenario															
Changes in:															
Total Employment	1,649	1,826	3,031	2,551	1,042	22	-284	-502	-557	-631	-607	-452	591		
Total Non-Farm Employment	1,950	2,080	3,222	2,687	1,187	259	-147	-339	-387	-406	-376	-302	786	$19,368	
GDP	$87,726,052	$102,250,075	$177,358,770	$156,943,497	$71,510,602	$12,833,000	-$6,651,896	-$22,493,131	-$26,792,242	-$28,359,020	-$25,351,317	-$12,611,849	$40,530,212		
State Revenues	$10,338,494	$12,113,061	$20,762,212	$19,236,853	$11,007,053	$5,475,131	$2,840,646	$1,059,163	$184,107	-$147,151	-$607,796	-$363,111	$6,824,888		$0.45
State Expenditures	-$6,301,723	-$4,794,220	-$6,952,435	-$2,695,253	$4,027,191	$7,558,016	$7,727,760	$7,537,857	$6,617,829	$5,920,499	$4,866,172	$3,459,261	$2,247,579		
Net State Revenue	$16,640,217	$16,907,281	$27,714,647	$21,932,107	$6,979,862	-$2,082,885	-$4,887,114	-$6,478,694	-$6,433,722	-$6,067,650	-$5,473,968	-$3,822,372	$4,577,309		
50% Scenario															
Changes in:															
Total Employment	841	962	1,705	1,443	556	-110	-230	-365	-396	-477	-472	-337	260		
Total Non-Farm Employment	1,193	1,275	1,988	1,657	740	144	-89	-203	-230	-256	-243	-186	482	$31,545	
GDP	$45,066,728	$54,566,942	$99,953,923	$90,061,206	$39,237,687	$1,785,000	-$6,621,195	-$16,768,377	-$19,175,297	-$20,811,843	-$20,478,111	-$10,283,686	$19,711,081		
State Revenues	$5,875,231	$6,905,532	$12,306,965	$11,351,553	$6,296,898	$2,718,668	$1,353,712	$227,854	-$314,440	-$589,535	-$989,214	-$696,124	$3,703,925		$0.24
State Expenditures	-$3,355,483	-$2,782,838	-$4,363,763	-$2,041,932	$1,877,331	$4,155,691	$3,987,218	$3,893,091	$3,343,093	$3,064,093	$2,417,868	$1,359,238	$962,800		
Net State Revenue	$9,230,715	$9,688,370	$16,670,727	$13,393,486	$4,419,567	-$1,437,022	-$2,633,507	-$3,665,237	-$3,657,533	-$3,653,629	-$3,407,082	-$2,055,362	$2,741,124		
100% Scenario															
Changes in:															
Total Employment	-463	-440	-417	-348	-235	-330	-149	-147	-140	-234	-261	-157	-277		
Total Non-Farm Employment	-28	-32	12	-6	13	-49	-1	12	21	-19	-33	-6	-10	-$1,584,597	
GDP	-$23,644,653	-$22,774,062	-$24,098,411	-$18,032,341	-$13,258,089	-$16,495,000	-$7,135,950	-$8,053,018	-$7,384,714	-$9,069,697	-$13,253,807	-$7,126,678	-$14,193,868		
State Revenues	-$1,324,945	-$1,547,709	-$1,250,853	-$1,433,248	-$1,392,196	-$1,825,884	-$1,160,324	-$1,279,896	-$1,270,521	-$1,534,841	-$1,830,997	-$1,440,793	-$1,441,017		-$0.09
State Expenditures	$1,366,497	$460,475	-$278,780	-$1,007,981	-$1,622,040	-$1,377,391	-$2,134,137	-$2,120,106	-$2,115,408	-$1,756,498	-$1,797,706	-$2,316,530	-$1,224,967		
Net State Revenue	-$2,691,442	-$2,008,184	-$972,073	-$425,267	$229,844	-$448,492	$973,813	$840,210	$844,887	$221,658	-$33,291	$875,738	-$216,050		

Table 3.18 Net Economic and Fiscal Impacts of the SBA Guaranty Fee Tax Credit

SBA Guaranty Fee	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$6,829	$20,128	$2,942	$3,101	$239,602	$178,791	$893	$33,328	$60,702		
Changes in:											
Total Employment	0	0	0	0	-6	-3	0	0	-1		
Total Non-Farm Employment	0	0	0	0	-2	-1	1	0	0	-$361,651	
GDP	-$14,915	-$15,260	-$15,617	-$16,172	-$364,287	-$219,961	$155,528	$17,640	-$59,130		
State Revenues	$0	$1,604	-$1,642	-$5,091	-$29,548	-$21,318	-$10,881	-$25,923	-$11,600		-$0.19
State Expenditures	$0	$4,804	$6,558	$5,091	$24,335	$8,885	-$10,881	-$1,854	$4,617		
Net State Revenue	$0	-$3,200	-$8,200	-$10,182	-$53,883	-$30,203	$0	-$24,068	-$16,217		

Table 3.19: Net Economic and Fiscal Impacts of the Traffic Reduction Tax Credit

Traffic Reduction	1997	1998	1999	2000	2001	2003	2004	2005	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$10,709	$6,366	$12,862	$222,103	$175,411	$142,757	$218,946	$2,546	$98,962		
20% Scenario											
Changes in:											
Total Employment	0	0	0	-4	-2	-1	-2	2	-1		
Total Non-Farm Employment	0	0	0	0	0	1	1	2	0	$216,187	
GDP	-$14,806	-$14,785	-$14,954	-$213,600	-$62,425	$32,322	-$33,098	$304,615	-$2,091		
State Revenues	$0	$1,542	-$1,560	-$19,233	-$16,416	-$6,764	$0	$14,249	-$3,523		-$0.04
State Expenditures	$1,544	$0	$3,119	$17,637	$4,899	$1,691	$6,927	-$10,617	$3,150		
Net State Revenue	-$1,544	$1,542	-$4,679	-$36,870	-$21,316	-$8,456	-$6,927	$24,867	-$6,673		
50% Scenario											
Changes in:											
Total Employment	0	0	0	-3	-2	-1	-2	1	-1		
Total Non-Farm Employment	0	0	0	0	1	1	1	1	0	$202,673	
GDP	-$14,806	$0	-$14,954	-$198,400	-$109,296	-$16,214	-$99,403	$203,040	-$31,254		
State Revenues	$0	$0	-$1,560	-$19,233	-$11,517	-$10,147	-$12,213	$1,770	-$6,613		-$0.07
State Expenditures	$1,544	$0	$0	$12,850	$8,165	-$1,691	$1,732	-$10,617	$1,498		
Net State Revenue	-$1,544	$0	-$1,560	-$32,083	-$19,683	-$8,456	-$13,945	$12,387	-$8,110		
100% Scenario											
Changes in:											
Total Employment	0	0	0	-3	-2	-1	-2	0	-1		
Total Non-Farm Employment	0	0	0	1	1	1	1	0	1	$185,301	
GDP	-$14,806	$0	-$14,954	-$213,600	-$156,166	-$97,073	-$198,698	$16,966	-$84,791		
State Revenues	-$1,544	$0	$0	-$20,829	-$16,416	-$15,309	-$17,408	$0	-$8,938		-$0.09
State Expenditures	$1,544	$1,542	$3,119	$11,254	$6,532	$1,691	$6,927	-$1,770	$3,855		
Net State Revenue	-$3,089	-$1,542	-$3,119	-$32,083	-$22,949	-$17,000	-$24,335	$1,770	-$12,793		

Table 3.20: Net Economic and Fiscal Impacts of the Work Education Credits for High School Students Tax Credit

Work Education	1995	1996	1997	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$16,226	$11,172	$461,762	$163,053		
20% Scenario						
Changes in:						
Total Employment	61	42	546	216		
Total Non-Farm Employment	54	37	479	190	$858	
GDP	$5,694,133	$3,664,638	$66,008,860	$25,122,544		
State Revenues	$313,597	$207,853	$3,397,379	$1,306,276		$8.01
State Expenditures	-$180,318	-$31,977	-$1,219,155	-$477,150		
Net State Revenue	$493,915	$239,831	$4,616,534	$1,783,427		
50% Scenario						
Changes in:						
Total Employment	82	50	1,333	489		
Total Non-Farm Employment	73	45	1,157	425	$384	
GDP	$8,019,393	$4,183,399	$161,145,423	$57,782,738		
State Revenues	$430,411	$242,229	$8,282,940	$2,985,193		$18.31
State Expenditures	-$237,549	-$30,379	-$3,136,480	-$1,134,803		
Net State Revenue	$667,961	$272,608	$11,419,420	$4,119,996		
100% Scenario						
Changes in:						
Total Employment	127	68	2,632	942		
Total Non-Farm Employment	112	62	2,276	817	$200	
GDP	$12,890,210	$5,504,572	$317,698,967	$112,031,250		
State Revenues	$674,233	$327,769	$16,300,917	$5,767,639		$35.37
State Expenditures	-$357,500	-$18,387	-$6,266,457	-$2,214,115		
Net State Revenue	$1,031,733	$346,156	$22,567,374	$7,981,754		

The following two credit programs are essentially identical and overlap in time and having data for both we analyze them separately.

Opportunity Certificate (Expired)

Certificates were issued to recipients of benefits from the temporary family assistance program who use them to negotiate for employment opportunities. Hiring companies may redeem these certificates for a corporation business tax credit of $125 for each full month that the qualified worker is employed with an annual limit of $1,500 per employee. Please refer to CGS §12-217y as amended by P.A. 99-203.

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 the one in which firms hired 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 2001 so that jobs accumulate over the period. We further adjust this figure to reflect a balance between full time and part-time employees because REMI requires FTEs as input.[14] 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 3.21 reports the microsimulation results for the Opportunity Certificate tax credit program. The annual average claim from 1997 through 2001 was $47,486 with the largest claim of $104,906 occurring in 1998 (there were no claims in 2000). This suggests that on average each year from 1997 through 2001 there were 38 workers hired in the 100% case accounting for the full time/part time adjustment. This program as modeled was successful in creating jobs and new tax revenue at each level of inducement. The cost per non-farm job created ranged from $170 in the 100% case to $325 in the 20% case while the tax revenue earned per dollar of credit claimed ranged from $41.05 in the 100% case to $22.97 in the 20% case. Total employment increased on average by 164 jobs each year in the 20% case and by 314 jobs on average each year in the 100% case.

[14] 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.

Hiring Incentive (Active)

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 the one in which firms hired 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 2001 so that jobs accumulate over the period. We further adjust this figure to reflect a balance between full time and part-time employees because REMI requires FTEs as input. 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 3.22 reports the microsimulation results for the Hiring Incentive tax credit program. The annual average claim from 2000 through 2007 was $11,300 with the largest claim of $40,492 occurring in 2000 (there were no claims in 2006). This suggests that on average each year from 2000 through 2007 there were 38 workers hired in the 100% case accounting for the full time/part time adjustment. This program as modeled was successful in creating jobs and new tax revenue at each level of inducement. The cost per non-farm job created ranged from $170 in the 100% case to $325 in the 20% case while the tax revenue earned per dollar of credit claimed ranged from $41.05 in the 100% case to $22.97 in the 20% case. Total employment increased on average by 164 jobs each year in the 20% case and by 314 jobs on average each year in the 100% case.

Table 3.21 Net Economic and Fiscal Impacts of the Opportunity Certificate Tax Credit

Opportunity Certificate	1997	1998	1999	2000	2001	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$29,621	$104,906	$72,292	$0	$30,610	$47,486		
20% Scenario								
Changes in:								
Total Employment	59	132	206	206	216	164		
Total Non-Farm Employment	53	119	184	183	191	146	$325	
GDP	$5,803,476	$13,093,522	$21,281,358	$22,278,000	$24,999,873	$17,491,246		
State Revenues	$364,121	$823,753	$1,316,676	$1,387,470	$1,562,570	$1,090,918		$22.97
State Expenditures	-$165,805	-$293,792	-$348,870	-$116,742	$68,760	-$171,290		
Net State Revenue	$529,926	$1,117,544	$1,665,546	$1,504,212	$1,493,810	$1,262,208		
50% Scenario								
Changes in:								
Total Employment	70	176	266	265	300	216		
Total Non-Farm Employment	63	159	238	235	266	192	$247	
GDP	$7,087,654	$17,339,495	$27,142,675	$28,336,000	$35,118,942	$23,004,953		
State Revenues	$429,143	$1,043,690	$1,631,070	$1,730,138	$2,096,319	$1,386,072		$29.19
State Expenditures	-$193,439	-$392,804	-$441,628	-$131,020	$50,710	-$221,636		
Net State Revenue	$622,582	$1,436,495	$2,072,698	$1,861,158	$2,045,609	$1,607,708		
100% Scenario								
Changes in:								
Total Employment	93	258	387	385	445	314		
Total Non-Farm Employment	82	231	345	342	393	279	$170	
GDP	$9,642,461	$25,449,458	$39,655,124	$41,198,700	$52,249,007	$33,638,950		
State Revenues	$559,673	$1,464,413	$2,293,758	$2,420,513	$3,008,248	$1,949,321		$41.05
State Expenditures	-$248,057	-$575,815	-$615,325	-$147,398	$113,110	-$294,697		
Net State Revenue	$807,731	$2,040,228	$2,909,083	$2,567,911	$2,895,138	$2,244,018		

Table 3.22 Net Economic and Fiscal Impacts of the Hiring Incentive Tax Credit

Hiring Incentive	2000	2001	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$40,492	$21,546	$3,941	$8,483	$141	$0	$4,500	$11,300		
20% Scenario										
Changes in:										
Total Employment	58	117	129	130	131	129	131	118		
Total Non-Farm Employment	52	104	115	115	116	115	115	105	$108	
GDP	$6,577,000	$13,522,793	$15,587,819	$16,144,363	$17,174,650	$17,678,538	$19,032,217	$15,102,483		
State Revenues	$376,263	$796,756	$957,697	$1,022,614	$1,074,761	$1,131,889	$1,189,333	$935,616		$82.80
State Expenditures	-$181,413	-$294,808	-$192,251	-$41,925	$85,683	$219,720	$328,159	-$10,977		
Net State Revenue	$557,676	$1,091,564	$1,149,948	$1,064,540	$989,078	$912,170	$861,175	$946,593		
50% Scenario										
Changes in:										
Total Employment	73	134	146	149	150	147	152	136		
Total Non-Farm Employment	65	119	130	133	133	131	134	121	$93	
GDP	$8,071,900	$15,256,175	$17,318,598	$18,164,877	$19,170,892	$19,803,813	$21,890,055	$17,096,616		
State Revenues	$461,342	$891,817	$1,062,723	$1,147,388	$1,195,462	$1,244,507	$1,307,393	$1,044,376		$92.42
State Expenditures	-$230,713	-$334,431	-$212,189	-$59,060	$94,158	$235,890	$344,470	-$23,125		
Net State Revenue	$692,055	$1,226,248	$1,274,912	$1,206,448	$1,101,304	$1,008,618	$962,923	$1,067,501		
100% Scenario										
Changes in:										
Total Employment	90	162	175	180	180	177	185	164		
Total Non-Farm Employment	80	144	156	161	161	158	163	146	$77	
GDP	$9,705,000	$18,066,550	$20,374,697	$21,410,787	$22,487,392	$23,208,602	$26,069,883	$20,188,987		
State Revenues	$568,594	$1,071,796	$1,244,294	$1,350,726	$1,423,080	$1,473,358	$1,589,338	$1,245,884		$110.25
State Expenditures	-$282,197	-$401,386	-$249,215	-$67,445	$113,623	$288,204	$414,568	-$26,264		
Net State Revenue	$850,791	$1,473,182	$1,493,509	$1,418,171	$1,309,457	$1,185,155	$1,174,770	$1,272,148		

Computer Donation

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 3.23 reports the microsimulation results for the Computer Donation tax credit program. The annual average claim from 2001 through 2006 was $9,469 with the largest claim of $46,764 occurring in 2001 (there were no claims in 2003 and 2004). 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 3.23 do not realistically reflect the benefit of this program. We do not how many computers were donated in 2001 or how many schools benefited. The claims for 2005 and 2006 suggest the number of computers donated was quite small.

Displaced Worker Credit

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 3.24 reports the microsimulation results for the Displaced Worker tax credit program. The annual average claim from 2003 through 2007 was $1,519 with the largest claim of $6,000 occurring in 2007 (there were no claims in 2004 and 2005). The claims in 2003 and 2006 were $93 and $1,500. This credit intended to put displaced workers back to work whose industries in which worked were restructured. The credit amounts suggest that one displaced worker was hired in 2006 and four displaced workers were hired in 2007. The reduction in the cost of capital has a relatively significant effect. As modeled, the results show that the cost per non-farm job created was $438 and the revenue earned per dollar of tax credit was $27.88 and in that regard the program has paid for itself.

Table 3.23 Net Economic and Fiscal Impacts of the Computer Donation Tax Credit

Computer Donation	2001	2003	2004	2005	2006	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$46,754	$0	$0	$250	$340	$9,469		
Changes in:								
Total Employment	0	1	0	0	0	0		
Total Non-Farm Employment	1	0	0	0	0	0	$43,095	
GDP	$0	$16,214	$16,603	$0	$0	$6,564		
State Revenues	$13,150	$1,691	-$1,732	-$3,539	-$9,223	$69		$0.01
State Expenditures	$3,266	$0	-$5,195	-$3,539	-$11,068	-$3,307		
Net State Revenue	$9,884	$1,691	$3,463	$0	$1,845	$3,377		

Table 3.24 Net Economic and Fiscal Impacts of the Displaced Worker Tax Credit

Displaced Worker	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$93	$0	$0	$1,500	$6,000	$1,519		
Changes in:								
Total Employment	0	0	0	3	16	4		
Total Non-Farm Employment	0	0	0	3	14	3	$438	
GDP	$0	$0	$33,821	$483,810	$2,345,966	$572,719		
State Revenues	$0	$5,195	$3,539	$36,239	$166,701	$42,335		$27.88
State Expenditures	-$1,691	-$1,732	$0	-$12,746	-$50,001	-$13,234		
Net State Revenue	$1,691	$6,927	$3,539	$48,985	$216,701	$55,569		

Historic Homes Rehabilitation

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.

We assume that the credit induces all, half and 20% of the claim amount for the rehabilitation of historic homes qualifying and whose owners claim the credit. Therefore, we assume that maintenance and repair of residential structures occurs in the amounts of 100%, 50% and 20% of the credit claimed each year. 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 3.25 reports the microsimulation results for the Historic Homes Rehabilitation tax credit program. The annual average claim from 2003 through 2007 was $2,682,938 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 3.24 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 rehabilitation expenditures amounted to approximately $1.8 million in 2003, $833,333 in 2004, $3.76 million in 2005, $10.85 million in 2006 and $27.4 million in 2007. 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.

Table 3.25 Net Economic and Fiscal Impacts of the Historic Homes Rehabilitation Tax Credit

Historic Homes Rehabilitation	2003	2004	2005	2006	2007	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$541,772	$265,000	$1,129,550	$3,255,787	$8,222,582	$2,682,938		
20% Scenario								
Changes in:								
Total Employment	-12	-4	-21	-61	-133	-46		
Total Non-Farm Employment	-4	0	-5	-12	-16	-7	-$370,011	
GDP	-$921,715	-$215,258	-$1,488,998	-$4,164,672	-$8,255,051	-$3,009,139		
State Revenues	-$30,556	$17,381	-$74,609	-$264,872	-$440,733	-$158,678		-$0.06
State Expenditures	$42,438	$3,473	$69,282	$188,674	$444,432	$149,660		
Net State Revenue	-$72,993	$13,908	-$143,891	-$453,545	-$885,165	-$308,337		
50% Scenario								
Changes in:								
Total Employment	-12	-5	-21	-59	-135	-46		
Total Non-Farm Employment	-3	0	-4	-10	-16	-7	-$407,013	
GDP	-$921,768	-$314,596	-$1,641,284	-$4,613,974	-$10,248,313	-$3,547,987		
State Revenues	-$40,764	-$1,732	-$87,080	-$282,972	-$596,317	-$201,773		-$0.08
State Expenditures	$37,382	$1,732	$62,213	$165,123	$403,694	$134,029		
Net State Revenue	-$78,147	-$3,463	-$149,293	-$448,095	-$1,000,011	-$335,802		
100% Scenario								
Changes in:								
Total Employment	-10	-5	-20	-56	-138	-46		
Total Non-Farm Employment	-1	0	-2	-6	-17	-5	-$501,793	
GDP	-$873,232	-$414,000	-$1,878,145	-$5,408,885	-$13,705,531	-$4,455,958		
State Revenues	-$49,220	-$20,872	-$106,545	-$328,343	-$844,475	-$269,891		-$0.10
State Expenditures	$32,220	$1,732	$47,964	$128,788	$324,081	$106,957		
Net State Revenue	-$81,440	-$22,603	-$154,509	-$457,131	-$1,168,557	-$376,848		

Historic Investment

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.

We assume that the credit induces all, half and 20% of the claim amount for the rehabilitation of historic structures for mixed residential and non-residential use. Therefore, we assume that maintenance and repair of structures for mixed residential and non-residential use occurs in the amounts of 100%, 50% and 20% of the credit claimed (most conservative fraction) in each year. 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. **Because our data is available through income year 2007, there is no data available for this credit.**

Historic Structures Rehabilitation

A tax credit 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.

We assume that the credit induces all, half and 20% of the claim amount for the rehabilitation of historic structures for residential use. Therefore, we assume that maintenance and repair of structures for residential use occurs in the amounts of 100%, 50% and 20% of the credit claimed (most conservative fraction) in each year. 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. **There have been no claims to date for this program.**

Service Facility Tax Credit

A tax credit may be applied against the portion of the 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%

There have been no claims to date for the Service Facility tax credit program.

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 3.26 shows the microsimulation results for the Insurance Department Assessment tax credit program. The annual average claim was $922,263 from 2000 through 2009. Claims in each year over the period were in the neighborhood of $1 million. This suggests that the Insurance Department Assessment averaged $1.15 million each year over the period. This credit program did not intend to create jobs or increase tax revenue and the results in Table 3.26 do not reflect the benefit of the credit.

Connecticut Life and Health Insurance Guaranty Association Assessment
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 3.27 shows the microsimulation results for the Connecticut Life and Health Insurance Guaranty Association Assessment tax credit program. The annual average claim was $12,813,082 from 2005 through 2009. Claims ranged from $7.9 million to $17 million over the period. This credit program did not intend to create jobs or increase tax revenue and the results in Table 3.27 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

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 3.28 shows the microsimulation results for the Connecticut Life and Health Insurance Guaranty Association Assessment tax credit program. The annual average claim was $98,490 from 2005 through 2009. Claims were in the neighborhood of $100,000 over the period. This credit program did not intend to create jobs or increase tax revenue and the results in Table 3.28 do not reflect the benefit of the credit that appears to offset a business expense and reduce state revenue dollar for dollar.

Table 3.26 Net Economic and Fiscal Impacts of the Insurance Department Assessment Tax Credit

Insurance Department Assessment	2000	2001	2003	2004	2005	2006	2007	2008	2009	Annual Average	Cost per Non-Farm Job	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	$922,263		
Changes in:												
Total Employment	-30	-31	-32	-26	-19	-22	-21	-13	-16	-23		
Total Non-Farm Employment	-12	-12	-13	-10	-7	-7	-7	-3	-4	-8	-$109,849	
GDP	-$2,059,900	-$2,170,565	-$2,328,582	-$2,036,684	-$1,522,853	-$1,693,561	-$1,675,723	-$944,786	-$1,303,220	-$1,748,430		
State Revenues	-$165,035	-$177,057	-$191,806	-$151,205	-$129,642	-$152,377	-$174,080	-$133,500	-$168,060	-$160,307		-$0.17
State Expenditures	$94,486	$55,696	$33,911	-$17,408	-$53,272	-$67,152	-$81,457	-$127,800	-$130,963	-$32,662		
Net State Revenue	-$259,521	-$232,752	-$225,717	-$133,797	-$76,369	-$85,225	-$92,622	-$5,700	-$37,096	-$127,644		

Table 3.27 Net Economic and Fiscal Impacts of the Connecticut Life and Health Insurance Guaranty Association Assessment

Connecticut Insurance Guaranty	2005	2006	2007	2008	2009	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$12,584,676	$15,884,835	$17,036,154	$10,612,726	$7,947,017	$12,813,082		
Changes in:								
Total Employment	-338	-413	-425	-244	-164	-317		
Total Non-Farm Employment	-135	-164	-167	-89	-52	-122	-$105,386	
GDP	-$27,275,846	-$34,457,859	-$36,406,860	-$21,038,542	-$13,963,277	-$26,628,477		
State Revenues	-$2,051,732	-$2,679,629	-$2,962,945	-$1,926,400	-$1,497,164	-$2,223,574		-$0.17
State Expenditures	$1,163,517	$950,692	$481,462	-$661,800	-$1,141,473	$158,480		
Net State Revenue	-$3,215,249	-$3,630,321	-$3,444,407	-$1,264,600	-$355,692	-$2,382,054		

Table 3.28 Net Economic and Fiscal Impacts of the Connecticut Insurance Guaranty Association Assessment Tax Credit

CT Life & Health Insurance Guaranty	2005	2006	2007	2008	2009	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$94,187	$84,936	$98,954	$106,146	$108,229	$98,490		
Changes in:								
Total Employment	-2	-2	-2	-2	-2	-2		
Total Non-Farm Employment	-1	-1	-1	-1	-1	-1	-$112,058	
GDP	-$220,006	-$190,036	-$211,662	-$181,694	-$186,192	-$197,918		
State Revenues	-$14,249	-$14,553	-$25,923	-$26,700	-$27,361	-$21,757		-$0.22
State Expenditures	$10,617	$5,422	$5,534	$3,800	-$1,947	$4,685		
Net State Revenue	-$24,867	-$19,975	-$31,457	-$30,500	-$25,414	-$26,442		

<u>Section 4:</u> 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.

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. 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 several programs that should be eliminated because they have no claims to date (Urban Jobs, Financial Institutions, 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 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).

Enterprise Zone Tax Credit for Qualifying Corporations

A tax credit may be applied against the 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.

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).[15]

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

[15] 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.

- 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, 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, carryback or assignment is allowed.

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

Table 3.1 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 3.1 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.[16]

Table 4.1 shows that from 1995 through 2007 (excluding 2002 because of the lack of data) $16.7 million was claimed by firms in a variety of industries. Claims varied from $62 in the Accommodations sector in 1996 (the single claim in this industry) to $2.56 million in the Machinery Manufacturing sector over the period. Total claims peaked in 2007 at $3.47 million while just over $400,000 was claimed in 2003.

[16] 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.

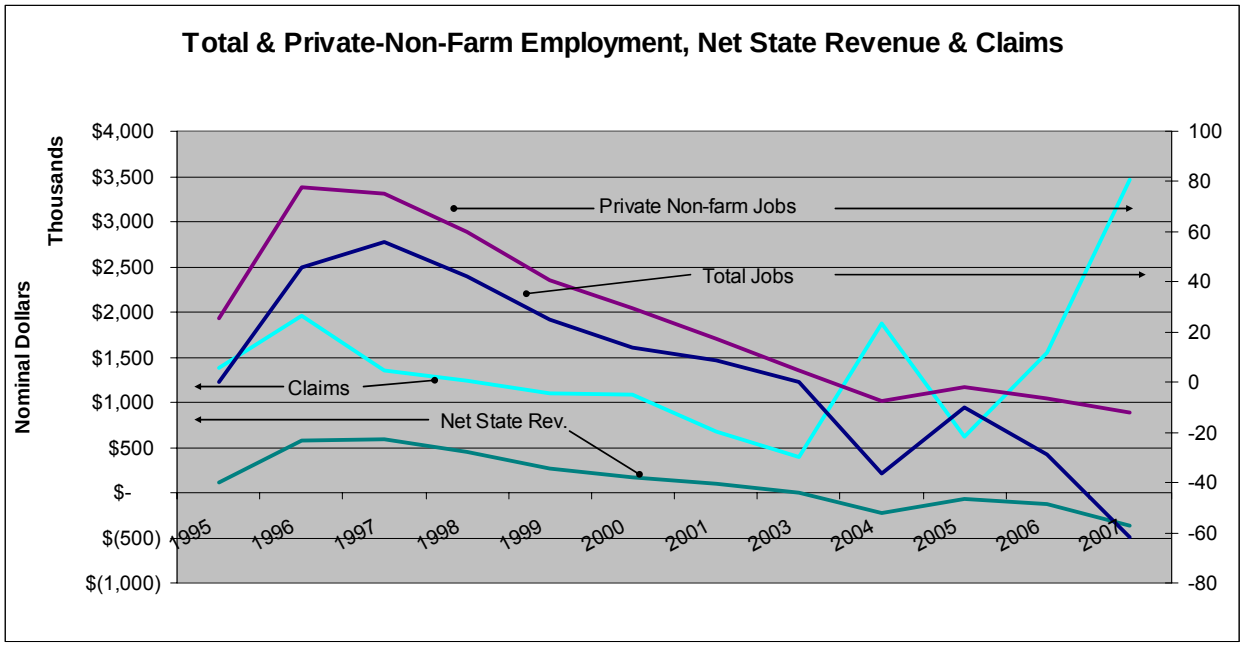
Table 4.1: Manufacturing Facilities Tax Credit: Income Years 1995 through 2007

Manufacturing Facilities Tax Credit for Facilities in a Targeted Investment Community or Enterprise Zone		Actual and Imputed Credits Claimed												
Industry	**NAICS Code**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2003**	**2004**	**2005**	**2006**	**2007**	**Industry Totals**
Forestry and Logging	113	$715	$1,647	$962	$776	$1,223	$351	$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	$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	$212,537
Construction of Buildings	236	$257	$258	$300	$167	$3,002	$3,675	$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	$7,659
Specialty Trade Contractors	238	$257	$258	$300	$167	$3,002	$3,675	$0	$4,835	$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	$174,242
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	$96,775
Textile Mills	313	$12,858	$12,863	$3,463	$13,964	$20,150	$58	$63	$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	$63,417
Apparel Manufacturing	315	$13,916	$13,916	$4,513	$15,101	$20,865	$1,049	$128	$147	$105	$0	$0	$0	$69,741
Leather and Allied Product Manufacturing	316	$16,249	$16,682	$17,061	$19,668	$8,959	$33,169	$10,279	$0	$0	$0	$4,368	$242	$126,677
Wood Product Manufacturing	321	$2,676	$4,303	$3,794	$5,094	$3,679	$7,752	$2,280	$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	$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	$152,953
Petroleum and Coal Products Manufacturing	324	$4,075	$4,085	$5,237	$4,420	$7	$0	$0	$0	$0	$0	$0	$0	$17,825
Chemical Manufacturing	325	$68,023	$186,763	$103,961	$75,841	$39,752	$63,976	$23,855	$8,046	$6,021	$24,779	$17,101	$4,207	$622,325
Plastics and Rubber Products Manufacturing	326	$20,334	$20,347	$23,759	$23,606	$12,572	$33,605	$10,694	$4,310	$13,536	$2,457	$104	$804	$166,129
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	$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	$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	$707,493
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	$2,563,805
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	$396,219
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	$384,046
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	$2,394,655
Furniture and Related Product Manufacturing	337	$66,916	$59,727	$48,221	$64,710	$56,147	$50,040	$16,651	$0	$0	$0	$2,407	$2,239	$367,059
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	$503,991
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	$1,544,452
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	$611,613
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	$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	$54,659
Electronics and Appliance Stores	443	$8,302	$15,710	$4,595	$8,981	$8,785	$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	$1,491,277
Food and Beverage Stores	445	$0	$0	$0	$0	$0	$2,214	$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	$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	$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	$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	$603,733
Nonstore Retailers	454	$0	$0	$0	$0	$0	$2,214	$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	$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	$161,536
Postal Service	491	$841	$1,477	$747	$765	$631	$1,498	$51	$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	$18,570
Warehousing and Storage	493	$5,617	$5,631	$192	$6,093	$1,037	$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	$139,565
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	$134,797
Data Processing, Hosting and Related Services	518	$841	$39,555	$747	$765	$631	$1,498	$51	$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	$140,807
Credit Intermediation and Related Activities	522	$841	$1,477	$747	$765	$631	$1,498	$51	$0	$0	$0	$0	$0	$6,010
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	$53,274
Insurance Carriers and Related Activities	524	$18,812	$18,860	$4,965	$20,407	$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	$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	$73,244
Rental and Leasing Services	532	$0	$0	$0	$0	$0	$0	$8,699	$4,359	$1,003	$462	$3,155	$5,105	$22,783
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	$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	$439,190
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	$191,641
Administrative and Support Services	561	$841	$1,477	$747	$765	$631	$1,498	$51	$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	$18,570
Ambulatory Health Care Services	621	$0	$0	$0	$0	$0	$0	$263	$0	$0	$0	$0	$0	$263
Accommodation	721	$0	$62	$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	$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	$16,678,512

Results for the Manufacturing Facilities Tax Credit

Chart 4.1 shows the 13-year pattern of the changes in total employment, private non-farm employment and net state revenue[17] 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 4.2 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.[18] 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.[19]

Chart 4.1: Timepath of Total and Private Non-farm Employment, Net State Revenue and Claims



[17] Net state revenue is the difference between domestic sources of state revenue and uses of state funds.

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

[19] 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 4.2: The Response of the Connecticut Economy to the Manufacturing Facilities Tax Credit

Economic Variable	1995	1996	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average
Total New Employment	0.2	45.7	55.7	42	25.1	13.9	8.5	0	-36.6	-10	-28.8	-61.5	4.52
Utilities	0.01	0.1	0.13	0.1	0.07	0.05	0.04	0.02	-0.05	-0.01	-0.04	-0.09	0.03
Construction	18.06	48.03	41.8	30.89	18.32	11.04	3.06	-3.91	-9.28	-8.93	-10.2	-12.04	10.57
Manufacturing	2.15	4.87	5.36	5.25	4.96	4.53	3.56	2.55	3.22	2.59	2.14	3.88	3.76
Wholesale Trade	0.37	1.3	1.57	1.48	1.3	1.22	1.1	0.85	0.77	0.87	1	1.05	1.07
Retail Trade	2.33	6.71	6.73	5.77	4.3	3.66	2.88	1.65	0.82	0.95	1.94	1.08	3.24
Transportation and Warehousing	0.07	0.38	0.46	0.42	0.32	0.27	0.22	0.12	0	0.1	0.03	-0.05	0.20
Information	0.29	1.04	1.3	1.09	0.87	0.74	0.58	0.4	0.15	0.23	0.12	-0.01	0.57
Finance and Insurance	0.38	1.39	1.31	1.1	0.66	0.38	0.12	-0.06	-0.08	0.27	0.27	0.69	0.54
Real Estate and Rental and Leasing	0.5	1.79	1.73	1.34	0.9	0.59	0.32	0.05	-0.43	-0.05	-0.2	-0.29	0.52
Professional and Technical Services	1.07	4.7	5.54	5.04	4.07	3.46	2.9	2.03	0.69	1.54	0.72	-0.26	2.63
Management of Companies and Enterprises	0.1	0.31	0.34	0.31	0.27	0.25	0.21	0.16	0.18	0.19	0.2	0.27	0.23
Administrative and Waste Services	-0.27	1.46	2.16	1.84	1.34	0.99	0.87	0.53	-0.87	0.34	-0.37	-1.62	0.53
Educational Services	-0.04	0.22	0.36	0.28	0.21	0.16	0.13	0.11	-0.1	0.07	-0.02	-0.17	0.10
Health Care and Social Assistance	0.12	2.32	2.62	2.01	1.25	0.89	0.58	0.18	-1.1	-0.03	-0.95	-2.04	0.49
Arts, Entertainment, and Recreation	0.06	0.54	0.64	0.52	0.38	0.3	0.22	0.12	-0.14	0.07	-0.08	-0.26	0.20
Accommodation and Food Services	-0.02	0.76	1.17	1.03	0.79	0.64	0.59	0.39	-0.24	0.25	-0.07	-0.53	0.40
Other Services, except Public Administration	0.16	1.79	1.95	1.53	0.94	0.64	0.43	0.11	-0.72	-0.03	-0.4	-1.11	0.44
Private Non-Farm Employment	25.27	77.76	75.07	59.81	40.65	29.54	17.33	4.76	-7.69	-2.08	-6.35	-12.21	25.16
State Government	-26.55	-35.69	-23.19	-21.19	-18.5	-17.82	-10.6	-6.05	-29.72	-9.15	-23.06	-50.48	-22.67
Local Government	1.17	3.86	4.07	3.52	2.73	2.29	1.8	1.17	0.67	0.92	0.72	0.72	1.97
New Gross Domestic Product	$ 102,681	$ 2,836,525	$ 3,880,597	$ 3,285,459	$ 2,492,306	$ 2,040,000	$ 1,790,895	$ 1,172,578	$(1,144,527)	$ 781,336	$ (554,450)	$(2,718,033)	$1,163,781
State Revenues at State Average Rates	$ 47,039	$ 359,746	$ 406,385	$ 348,979	$ 262,679	$ 209,968	$ 154,710	$ 95,867	$ (8,901)	$ 9,114	$ 9,313	$ (114,140)	$148,397
State Expenditures at State Average Rates	$ (62,719)	$ (215,848)	$ (186,937)	$ (97,389)	$ (8,209)	$ 41,994	$ 60,165	$ 95,867	$ 213,613	$ 72,914	$ 130,387	$ 247,304	$24,262
Net New State Revenues	$ 109,759	$ 575,594	$ 593,322	$ 446,368	$ 270,887	$ 167,975	$ 94,545	$ -	$ (222,513)	$ (63,799)	$ (121,074)	$ (361,444)	$124,135

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 4.2) 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 127).

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 $500 million in awardable credits, 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 4.3 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 4.3 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.[20] 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 Diageo in 2009 and FactSet in 2007 for failing to meet their job targets. Note also that the total project costs listed in Table 4.3 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.

[20] 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 4.3: Urban and Industrial Site Reinvestment Tax Credit Claims by NAICS for Income Years 2007 through 2010.

Urban and Industrial Site Reinvestment Tax Credit Program							Potential Tax Credits Claimed in Income Year				
Project Start Date	COMPANY	CITY	INDUSTRY	NAICS CODE	TAX CREDIT AWARD	Total Project Cost as of June 30, 2010	2006	2007	2008	2009	2010 (expected)
March 15, 2002	Lowe's Home Centers, Inc.	Plainfield	Service, Warehousing	444110	$20,000,000	$80,000,000	**NA**	**NA**	$2,000,000	$2,000,000	$2,000,000
January 1, 2003	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‡	$8,000,000
January 1, 2004	Eppendorf Manufacturing Corporation	Enfield	Manufacturing	326199	$5,000,000	$23,100,000	$500,000	$500,000	$500,000	$500,000	$1,000,000
March 15, 2004	FactSet Research Systems, Inc.	Norwalk	Financial Services	523991	$7,000,000	$36,050,000	**NA**	$673,970‡	$700,000	$700,000	$700,000
January 1, 2005	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
June 30, 2008	Blue Sky Studios, Inc.	Greenwich	Information, Digital Animation	512110	$18,000,000	$65,000,000	**NA**	**NA**	**NA**	**NA**	**NA**
February 18, 2009	Prudential Retirement Insurance and Annuity Company	Hartford	Financial Services	524113	$8,000,000	$12,600,000	**NA**	**NA**	**NA**	**NA**	**NA**
July 27, 2009	Comcast of Connecticut, Inc.	Enfield	Information, Cable Broadcasting	515210	$5,000,000	$7,572,643	**NA**	**NA**	**NA**	**NA**	**NA**
August 27, 2009	Aldi, Inc. (Connecticut)	South Windsor	Wholesale, Foods	445110	$1,900,000	$52,400,000	**NA**	**NA**	**NA**	**NA**	**NA**
September 15, 2009	Burris Logistics, Inc.	Rocky Hill	Wholesale	424420	$2,000,000	$56,819,000	**NA**	**NA**	**NA**	**NA**	**NA**
September 23, 2009	Engineered Electric Company d/b/a DRS Fermont	Bridgeport	Manufacturing	335310	$10,000,000	$15,115,000	**NA**	**NA**	**NA**	**NA**	**NA**
December 14, 2009	CF Foods, LLC	New Britain	Manufacturing	311520	$2,000,000	$22,008,000	**NA**	**NA**	**NA**	**NA**	**NA**
February 24, 2010	General Re Corporation	Stamford	Financial Services	524130	$19,500,000	$130,000,000	**NA**	**NA**	**NA**	**NA**	**NA**
				TOTALS	**$238,400,000**	**$952,764,643**	**$4,500,000**	**$15,173,970**	**$17,200,000**	**$15,824,000**	**$21,700,000**

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 the first five companies appearing in Table 4.3 claiming their potential credits for calendar years 2007 through 2009 using actual company data from these audits.[21] Corresponding project start dates are calendar years 2002 through 2005. 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. This implies that Connecticut realizes 20% of the purchase price as economic impact to the state because it is the 20% gross margin of the wholesale industry that confers benefit to the state; the remainder goes to transportation and the producer that we assume are located outside Connecticut. 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

[21] 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 and Diageo in 2009 for not achieving their employment targets.

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).

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 live[22] 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.[23] 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

[22] 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.

[23] 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.

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.

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

Table 4.4 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 3.4 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 3.3.

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). This tax credit has a statutory cap of $500 million. Because we are close to reaching the cap, we recommend increasing it by $200 million with $100 million allocated to developers that invest in brownfields or transit-oriented development projects.

Table 4.4: URA Tax Credit Economic Impact Results

Changes From Baseline								
100% Case	2003	2004	2005	2006	2007	2008	2009	Average Annual Change
Economic Variable								
Total New Direct Employment	671	891	1,560	1,826	2,012	1,997	2,176	1,590
Total New Plant and Equipment Investment	$1,053,519	$47,882,091	$143,149,972	$52,214,314	$130,677,070	$305,285,124	$80,852,683	$108,730,682
Total Assumed Claims (Tax Cost/Revenue Forgone) ‡	**$0**	**$0**	**$0**	**$4,500,000**	**$15,173,970**	**$17,200,000**	**$15,824,000**	**$13,174,493**
Total New Employment	1,422	2,292	4,303	3,475	5,266	7,592	4,235	4,084
New State GDP (Nominal $)	$ 140,930,660	$ 179,161,395	$ 285,761,174	$ 276,087,106	$ 379,131,313	$ 494,148,124	$ 394,015,985	$ 307,033,680
New Construction Employment	101	555	1,210	376	1,273	2,647	381	935
New Manufacturing Employment	9	22	56	62	98	163	93	72
New Service-Providing Industries' Employment	1,126	1,456	2,620	2,722	3,590	4,347	3,392	2,750
New State Revenues (Nominal $)	$16,287,965	$17,863,854	$31,386,001	$29,391,073	$46,505,366	$68,400,000	$46,933,693	$36,681,136
New State Expenditures (Nominal $)	-$3,293,195	-$4,374,821	-$7,823,217	$1,236,518	-$388,354	-$2,700,000	$20,085,161	$391,727
Net New State Revenues (Nominal $)	$19,581,160	$22,238,675	$39,209,218	$28,154,555	$46,893,720	$71,100,000	$26,848,532	$36,289,409
50% Case								
Total New Direct Employment	335	446	780	913	1006	999	1088	795
Total New Plant and Equipment Investment	$526,760	$23,941,045	$71,574,986	$26,107,157	$65,338,535	$152,642,562	$40,426,341	$54,365,341
Total New Employment	712	1,148	2,154	1,691	2,503	3,689	2,067	1,995
New State GDP (Nominal $)	$70,549,317	$89,826,573	$143,000,554	$135,937,804	$185,957,414	$246,741,824	$201,314,178	$153,332,524
New Construction Employment	51	278	605	186	627	1,315	185	464
New Manufacturing Employment	5	11	28	31	50	83	49	37
New Service-Providing Industries' Employment	562	730	1,311	1,352	1,788	2,195	1,749	1,384
New State Revenues (Nominal $)	$8,099,480	$8,931,927	$15,739,567	$14,552,861	$22,912,874	$34,000,000	$23,671,797	$18,272,644
New State Expenditures (Nominal $)	-$1,691,100	-$2,187,411	-$3,911,608	$760,934	$291,265	-$1,100,000	$10,042,581	$314,952
Net New State Revenues (Nominal $)	$9,790,580	$11,119,338	$19,651,176	$13,791,928	$22,621,608	$35,100,000	$13,629,217	$17,957,692
20% Case								
Total New Direct Employment	134	178	312	365	402	399	435	318
Total New Plant and Equipment Investment	$210,704	$9,576,418	$28,629,994	$10,442,863	$26,135,414	$61,057,025	$16,170,537	$21,746,136
Total New Employment	285	459	862	617	842	1,346	764	739
New State GDP (Nominal $)	$28,244,923	$35,906,042	$57,248,208	$51,692,241	$69,885,956	$98,246,363	$85,542,378	$60,966,587
New Construction Employment	20	111	242	71	239	515	68	181
New Manufacturing Employment	2	4	11	13	20	35	23	15
New Service-Providing Industries' Employment	227	292	525	528	707	900	760	563
New State Revenues (Nominal $)	$3,257,593	$3,556,365	$6,272,544	$5,520,576	$8,633,105	$13,395,000	$9,771,021	$7,200,886
New State Expenditures (Nominal $)	-$660,419	-$886,813	-$1,556,261	$537,410	$705,833	-$46,000	$4,110,285	$314,862
Net New State Revenues (Nominal $)	$3,918,012	$4,443,178	$7,828,805	$4,983,166	$7,927,272	$13,441,000	$5,660,736	$6,886,024

Job Creation Tax Credit

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 carryback 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 4.5 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. At this writing, two firms have claimed a portion of their allocation.

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 (11 for Sparta Insurance Holdings, Inc. and 67 for Sun Products in 2009). 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 4.5: New Jobs Creation Tax Credit Claims by NAICS for Income Year 2009

Job Creation Tax Credit Program					Tax Credits Claimed
Contract Start Date	COMPANY	INDUSTRY	NAICS CODE	Credit Allocation	2009
June 24, 2008	Sparta Insurance Holdings, Inc.	Financial Services	524126	$508,711	**$36,192**
March 6, 2009	Carter's Retail, Inc.	Service	448130	$471,529	**NA**
March 5, 2009	Burris Logistics	Wholesale	424420	$1,008,210	**NA**
July 31, 2009	Sun Products	Manufacturer	325611	$1,496,426	**$314,591**
August 17, 2009	Tire Rack, Inc.	Wholesale	423130	$177,277	**NA**
September 11, 2009	Mercuria Energy Trading, Inc.	Financial Services	523140	$472,500	**NA**
March 1, 2010	Asterisk Financial, Inc.	Financial Services	524290	$1,081,437	**NA**

The impact of the claims in 2009 follow from the new direct jobs created by each company (11 for Sparta and 67 for Sun Products in 2009) 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 and compensation adjustments for Sun Products. Sun estimated that 10% of their new hires would live outside Connecticut (Sparta's new hires would reside in Connecticut). 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 job creation tax credit program as it existed prior to July 1, 2010, the results for 2009 show that total employment increased by 161 jobs (full- and part-time) in all sectors including the self-employed as a result of the new jobs Sun and Sparta added and accounting for the tax cost offset. Private, non-farm (payroll) employment increased by 143 full- and part-time jobs, state GDP increased by $24.5 million and net state revenue increased by $1.7 million (recall the direct tax cost was $350,783).

Recommendation:

We recommend the Job Creation tax credit remain intact especially as the legislature recently amended it to be more inclusive. Thus far, the credit has been beneficial on net and is a close substitute for the Urban Jobs tax credit that has no claims.

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. However, we do not know the square footage of new facilities occupied. If we did know these numbers, we would not know to what extent they were net new or displacements. 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 4.6 shows the Insurance Reinvestment Fund tax credits claimed (the state's tax cost) by industry designated by NAICS code and year (2007 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 carryforwards 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 4.6 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 4.6.

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 4.7 shows the investments fund managers made in each industry from calendar year 1996 through 2009 (this data is available from fund managers' reports to DECD).

Table 4.6: Insurance Reinvestment Fund Tax Credit Claims by NAICS Industry for Income Years 1999 through 2007

Insurance Reinvestment Fund Tax Credit Claims		Credits Claimed								
Industry	NAICS Code	1999	2000	2001	2003	2004	2005	2006	2007	Totals
Individual Investors	NA	NA	NA	NA	NA	$1,053,731	$1,010,570	$2,012,100	$1,600,700	$5,677,101
Apparel Manufacturing	315	$0	$0	$0	$0	$0	$0	$150,000	$88,969	$238,969
Machinery Manufacturing	333	$0	$134	$0	$0	$0	$0	$0	$0	$134
Computer and Electronic Product Manufacturing	334	$0	$134	$0	$0	$0	$0	$0	$0	$134
Miscellaneous Manufacturing	339	$0	$134	$0	$0	$0	$0	$0	$0	$134
Merchant Wholesalers, Durable Goods	423	$0	$0	$0	$637	$0	$0	$0	$0	$637
Couriers and Messengers	492	$0	$0	$0	$0	$0	$0	$740,514	$1,042,621	$1,783,135
Telecommunications	517	$0	$0	$0	$0	$0	$0	$928,504	$4,571,119	$5,499,623
Monetary Authorities-Central Bank	521	$2,760	$1,936	$0	$0	$0	$0	$0	$0	$4,696
Credit Intermediation and Related Activities	522	$2,760	$1,936	$0	$0	$0	$0	$0	$0	$4,696
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	$2,760	$1,936	$32,101	$0	$0	$0	$0	$0	$36,797
Insurance carriers and Related Activities	524	$0	$0	$0	$0	$0	$12,094,964	$15,174,661	$11,668,879	$38,938,504
Funds, Trusts and Other Financial Vehicles	525	$0	$0	$32,101	$0	$0	$0	$0	$0	$32,101
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	533	$0	$0	$32,101	$0	$0	$0	$0	$0	$32,101
Management of Companies and Enterprises	551	$0	$0	$32,101	$333,403	$314,773	$159,615	$346,732	$165,949	$1,352,573
	Totals	$8,281	$6,210	$128,403	$334,040	$1,368,504	$13,265,149	$19,352,511	$19,138,237	$53,601,335

Table 4.7: Insurance Reinvestment Fund Tax Credit Fund Managers' Investments by NAICS Industry for Income Years 1996 through 2009

NAICS Industry Description	NAICS Industry Code	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	$0	$0	$55,000,000	$6,000,000	$0	$7,000,000	$8,000,000	$1,500,000	$1,570,000	$0	$2,400,000	$638,320	$2,274,238	$4,513,000	$88,895,558
Insurance Carriers and Related Activities	524	$8,691,118	$5,000,000	$9,133,333	$19,890,015	$2,100,000	$0	$10,000,000	$0	$0	$0	$0	$0	$0	$0	$54,814,466
Management of Companies and Enterprises	551	$0	$0	$25,125,000	$25,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,125,000
Ambulatory Health Care Services	621	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,000
	Total	$8,691,118	$5,000,000	$89,258,333	$50,940,015	$2,100,000	$7,000,000	$18,000,000	$1,500,000	$1,570,000	$0	$2,400,000	$638,320	$2,274,238	$4,513,000	$193,885,024

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 2007. The amounts claimed represent investments that insurance and related companies received earlier than the years in which the claims appear. For example, Table 4.6 shows that $8,281 was claimed in 1999 and represents a fraction of the $8,691,118 total investment the finance and insurance industry received in 1996 shown in Table 4.7. 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 4.6. The amounts invested reduce the cost of capital of the companies receiving investment (Table 4.7). 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 4.8 (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 3.8: Jobs Created by the Insurance Reinvestment Tax Credit by Industry and Year

NAICS Industry Description	NAICS Industry Code	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Securities, Commodity Contracts and Other Financial Investments and Related Activities	523	0	46	100	135	146	157	206	103.5	107.5	94.5	93.5	1,189
Insurance Carriers and Related Activities	524	117	153	128	118	145.5	32	33	40	39	17	24	846.5
Management of Companies and Enterprises	551	0	24	13	12	10	13	21	22	20	21	0	156
Ambulatory Health Care Services	621	0	0	0	15.5	0	0	0	0	0	0	0	15.5
	Total	117	223	241	280.5	301.5	202	260	165.5	166.5	132.5	117.5	2,207

Table 4.9 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 except for 2007 when it turns negative. We notice as well that state employment is less than the forecast because claims (costs) increase faster than benefits. Row three in Table 4.9 repeats the claims for all industries from Table 3.6 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 4.2, 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 2007, the program created more jobs than it cost and with the exception of 2007, generated more state revenue than expenditure. Chart 4.2 shows the changes in jobs and net state revenue and the absolute level of claims in nominal dollars.

Chart 4.2: Total and Non-farm Employment, Net State Revenue Changes and Claims

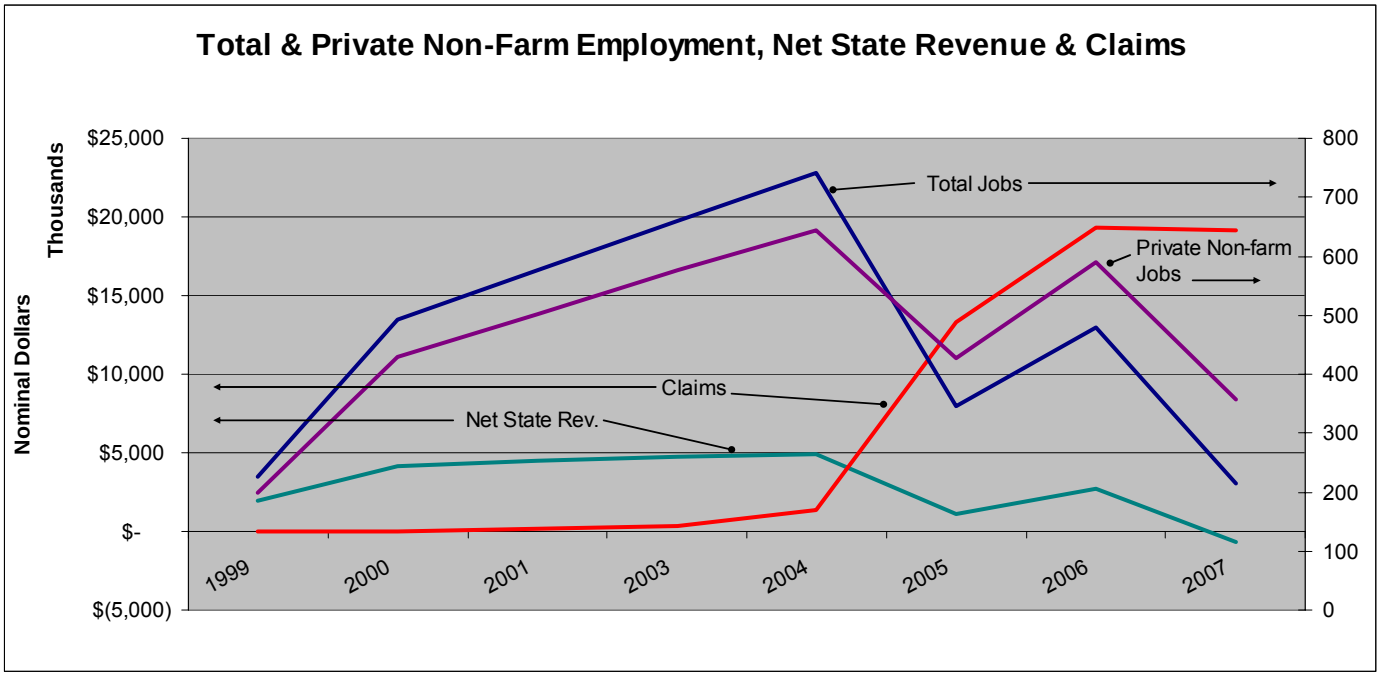


Table 4.9: Insurance Reinvestment Tax Credit Economic and Fiscal Impact

Economic Variable	1999	2000	2001	2003	2004	2005	2006	2007	Annual Average Change
Total New Employment Change	227	493	576	661	742	345	480	215	467
Total Claims	$8,281	$6,210	$128,403	$334,040	$1,368,504	$13,265,149	$19,352,511	$19,138,237	$6,700,167
Employment Change in:									
Utilities	0	1	1	1	1	1	1	0	1
Construction	11	27	38	46	53	28	28	15	31
Manufacturing	2	5	5	6	5	1	3	1	4
Wholesale Trade	2	6	7	7	8	4	5	2	5
Retail Trade	16	36	44	51	58	37	51	30	40
Transportation and Warehousing	1	3	4	4	5	3	4	2	3
Information	2	6	6	7	7	4	6	4	5
Finance and Insurance	110	190	217	240	274	197	272	182	210
Real Estate and Rental and Leasing	5	12	14	16	18	11	16	8	13
Professional and Technical Services	7	24	32	38	42	30	41	20	29
Management of Companies and Enterprises	1	18	10	10	9	10	16	16	11
Administrative and Waste Services	8	21	26	31	35	19	27	11	22
Educational Services	1	3	4	5	6	4	5	3	4
Health Care and Social Assistance	14	34	40	50	53	32	47	25	37
Arts, Entertainment, and Recreation	2	6	8	9	11	7	10	6	7
Accommodation and Food Services	6	14	18	22	25	18	24	15	18
Other Services, except Public Administration	10	24	28	31	35	21	31	16	25
Private Non-Farm Employment	199	430	502	576	645	426	589	356	465
State Government	9	22	24	26	30	-133	-180	-188	-49
Local Government	18	42	50	59	67	52	71	46	51
New Gross Domestic Product	$ 23,448,626	$ 52,580,422	$ 65,283,062	$ 77,575,494	$ 90,006,442	$ 62,320,000	$ 90,987,706	$ 54,021,588	$64,527,918
New State Revenues at State Average Rates	$ 1,466,064	$ 3,453,565	$ 4,437,725	$ 5,323,957	$ 6,205,781	$ 4,535,313	$ 6,308,726	$ 4,122,283	$4,481,677
New State Expenditures at State Average Rates	$ (517,434)	$ (679,521)	$ (32,511)	$ 592,453	$ 1,288,767	$ 3,401,485	$ 3,558,328	$ 4,775,923	$1,548,436
Net New State Revenues	$ 1,983,498	$ 4,133,086	$ 4,470,235	$ 4,731,505	$ 4,917,014	$ 1,133,828	$ 2,750,398	$ (653,639)	$2,933,241

Recommendation:

We recommend that the Insurance Reinvestment tax credit continue as revised by the legislature in 2010. 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).

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 putatively 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 2007 and through 2009 but did not apply for the film tax credit.[24] This report excludes this latter group of productions and assumes their work took place in Connecticut irrespective of the film production tax credit.[25] The second group of productions is included in the 'baseline' of motion picture production in Connecticut, while those productions taking advantage of the tax credit are

[24] 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.

[25] 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.

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 form 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 it 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.

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.[26] The per diem amounts modeled in the study are for BTL

[26] *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.

workers (ATL workers' 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 carryforwards. This artificially synchronizes benefits with costs. If we allowed carryforwards in the analysis, we would have less cost and more benefit in years for which we have data (2006-2009) 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 2009. In 2007, the claims reported by DRS exceeded the claims awarded by DECD. This occurred because of a

change (the bold, underlined word below) to HB 6802 that was passed on September 14, 2009 and effective upon passage:

"(3) On and after July 1, 2006, and for income years commencing on or after January 1, 2006, any such credit allowed under this subsection shall be claimed against the tax imposed under chapter 207 or this chapter for the income year in which the production expenses or costs were incurred, [and may be carried forward for] **or** in the three immediately succeeding income years. Any production tax credit allowed under this subsection shall be nonrefundable."

This explains why DRS reports more credits claimed for 2007 than DECD issued, as recipients of credits issued in 2008 for expenses incurred in 2007 had to amend their 2007 returns. In 2008 and 2009, the credits issued by DECD exceeded those reported by DRS because firms likely carried them forward.

According to DRS data, the insurance and banking industries claimed most of the film production tax credits in 2007, 2008 and 2009. Tax credits awarded by DECD in 2008 and 2009 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 2008 and 2009. 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 4.10 shows the jobs, payroll, per diem payments and production expenditures for feature film productions reported to DECD from July 1, 2006 through December 31, 2009. 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 4.10 Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Feature Film Productions in Connecticut, 2006-2009

Production Company					
Feature Films	Year	Total Jobs	Total Payroll	Per Diem	Qualified CT Vendor Spend
In Bloom, LLC	2006	1,190	$5,861,645	$118,115	$2,320,783
Reservation Road Productions	2006	412	$6,744,685	$52,986	$1,893,057
Connecticut Film Center LLC	2007	135	$875,490	$46,997	$212,136
Accidental Husband Intermediary Inc.	2007	239	$1,174,729	$2,646	$146,444
WJH Productions, LLC	2007	367	$7,007,794	$53,011	$1,036,945
Laws of Motion, LLC	2007	167	$1,243,903		$497,960
Marker Productions, LLC	2007	434	$5,794,251	$105,476	$1,017,810
Double Dutch Bus Productions, Inc.	2007	756	$24,866,845	$373,952	$3,070,330
Old Dogs Productions, Inc.	2007	686	$35,577,601	$292,189	$3,224,384
The Other Side of the Tracks, LLC	2008	29	$147,728	$6,520	$68,999
Modern Home Movie LLC	2007	18	$117,235		$25,355
DWNY Productions, Inc.	2008	555	$17,790,825	$171,090	$3,581,717
Forever in Blue, LLC	2007	432	$7,920,874	$65,473	$3,143,678
Made For Each Other, LLC	2007	59	$419,388	$21,350	$171,253
Sniscak Productions, Inc.	2007	594	$7,123,159	$76,080	$1,228,400
Genre Connecticut Productions LLC	2007	836	$5,097,984	$232,386	$2,971,900
Camp Hope Productions LLC	2007	220	$959,477	$82,816	$334,841
Righteous Kill Productions, Inc.	2007	500	$33,566,321	$473,611	$4,842,628
Six Wives, LLC	2007	200	$4,806,249	$149,605	$1,267,882
Universal City Studios	2008	7	$329,818		$225,793
EF Productions, Inc.	2008	528	$14,248,415	$269,131	$2,760,237
Pippa Lee, LLC	2008	240	$2,414,106	$121,132	$1,131,862
DWNY Productions, Inc.	2008	23	$693,398		$694,663
Green Scarf Productions, Inc.	2008	800	$14,978,876	$431,244	$3,290,680
TJ Productions, LLC	2008	576	$7,504,488	$182,748	$2,345,012
Lucky Cricket Productions, LLC	2008	363	$10,670,588	$310,655	$3,933,477
Harvest Films LLC	2008	19	$175,924	$6,406	$121,363
What Were We Thinking Films Inc.	2008	49	$40,109		$43,017
AGT Productions, LLC	2008	1,093	$8,377,326		$2,719,403
DS Productions	2008	60	$586,073	$16,070	$223,282
Listen To Your Heart, LP	2008	42	$284,930		$56,966
PHC Productions, LLC	2008	108	$452,519	$26,343	$239,973
Totals		11,737	$227,852,753	$3,688,032	$48,842,230

Table 4.11 shows the jobs, payroll, per diem payments and production expenditures for television productions reported to DECD from 2006 through 2009. As above, jobs reported include each person receiving pay including extras. Except for the 13 full-time, permanent jobs reported for Televersemedia, LLC, the reported jobs in Table 4.11 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 count) full-time, permanent jobs at World Wrestling Entertainment, Inc. 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.

Table 4.12 shows the jobs, payroll, per diem payments and production expenditures for documentaries, commercials, infomercials and other digital media productions reported to DECD from 2006 through 2009. As above, jobs reported include each person receiving pay including extras. Except for Venan Entertainment that created 19 full-time, permanent jobs, NBC Sports Ventures, Inc. that created 47 full-time, permanent jobs, NBC Olympics, Inc. that created 15 full-time, permanent jobs and LifeMed Media, Inc. that created 19 full-time, permanent jobs due exclusively to the film production tax credit, the other reported jobs do not drive economic impact because they are not permanent, full-time jobs. These other productions use part-time labor as needs arise. 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. 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.

Table 4.11 Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Television Productions in Connecticut, 2006-2009

Production Company					
Television	Year	Total Jobs	Total Payroll	Per Diem	Qualified CT Vendor Spend
Bronx Productions, Inc	2006	1,658	$12,878,460	$531,387	$2,811,134
Triple Threat Connecticut, LLC	2007	32	$329,678		$963,791
Orange Lion Productions, LLC	2006	6	$75,186		$134,850
Televersemedia LLC	2006	11			$369,556
Roger Wilco Productions	2007	25	$254,870		$189,061
Televersemedia LLC	2008				$207,594
Docere Palace Studios LLC	2007				$368,261
Car Talk TV, LLC	2007	6	$42,521		$728,831
Ruminate Productions, LLC	2008		$5,932,589	$225,503	$1,619,984
Televersemedia, LLC	2008				$61,489
Young American Heroes, LLC	2008	142	$888,623		$278,780
Televersemedia LLC	2009	2	$33,764		$170,256
World Wrestling Entertainment, Inc.	2008	2			
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008	264	$5,031,091		$4,642,841
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008				
Concentric Entertainment, LLC	2008	24	$17,860		$51,379
SimonPure Productions LLC	2009	14			$50,144
Orange Lion Productions, LLC	2008				$421,431
Orange Lion Productions, LLC	2007				$82,084
Orange Lion Productions, LLC	2008				$242,290
World Wrestling Entertainment, Inc.	2007				
World Wrestling Entertainment, Inc.	2007				
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008	356	$20,826,096		$1,885,618
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2008				
World Wrestling Entertainment, Inc.	2007				
Revelation Films LLC	2008	28	$33,046	$2,270	$22,662
Totals		2,570	$46,343,784	$759,160	$15,302,036

Table 4.12 Jobs, Payroll, Per Diem Payments and CT Vendor Spending of Documentaries, Commercials, Infomercials and Other Digital Media Productions in Connecticut, 2006-2009

Production Company					
Documentary	**Year**	**Total Jobs**	**Total Payroll**	**Per Diem**	**Qualified CT Vendor Spend**
Captured Time Productions, LLC	2008	16	$212,690		$214,532
Telemark Films, LLC	2007				$352,459
Televersemedia LLC	2008				$356,744
Commercials					
Independent Media, Inc.	2008	41	$34,682		$15,953
MRB Productions	2008	36	$162,320		$67,124
Streamline Content	2008	29	$166,009	$7,367	$36,175
Cormacks Productions	2008	33	$158,481		$324,124
Visual Concepts Media, Inc.	2006	9	$41,802		$16,485
Visual Concepts Media, Inc.	2006	6	$56,696		$8,704
Infomercials					
Boardroom, Inc.	2007				$168,462
Other Digital Media					
Televersemedia LLC	2007	10	$141,219		$194,608
Rabbit Ears Entertainment, LLC	2008	2			$294,956
Televersemedia, LLC	2008	4	$56,392		$121,343
Venan Entertainment	2008	19	$589,840		$207,432
Venan Entertainment	2008	19	$264,058		$73,981
NBC Sports Ventures Inc.	2007	27	$990,629		$192,294
NBC Olympics, Inc.	2007	8	$319,638		$7,033
Handmade TV, LLC	2008				$41,100
NBC Sports Ventures Inc.	2008	20	$2,151,249		$329,030
NBC Olympics, Inc.	2008	7	$898,464		$100,000
LifeMed Media Inc.	2008	19	$760,222		$774,734
Totals		305	$7,004,391	$7,367	$3,897,273

Total payroll for calendar year 2006 was $25,658,474, for calendar 2007, $138,629,855, for calendar 2008, $116,878,835 and for calendar 2009, $33,764; total payroll for the 3½-year period was $281,200,928. This compares with total qualified Connecticut vendor spending of $7,554,569 in calendar 2006, $28,324,448 in calendar 2007, $32,234,902 in calendar 2008 and $439,650 in calendar 2009. Qualified Connecticut vendor spending totals $68,553,569 for the 3½-year period. Total qualified Connecticut vendor spending reported in Tables 4.10 through 4.12 totals $68,041,539; the difference arises because some productions had no new payroll or jobs but had qualified Connecticut vendor spending for goods and services. There were 11 full-time, permanent jobs created in 2006, 35 jobs created in 2007, 65 jobs created in 2008 and 2 jobs created in 2009.

Economic and Fiscal Impact Results for the Film Production Tax Credit

Table 4.13 shows the microsimulation results for the film production tax credit. The annual average claim over the period was $40,024,939 suggesting that the annual average 'qualifying' value of film, television and digital media production in the state was $133,416,463 or $466,957,628 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 payroll[27] is net new tax revenue to the state, there would be approximately $3.5 million on average per year in net new state revenue that offsets the tax cost of the film production tax credits. For modeling purposes, we increase state spending on average $3.5 million each year over the period reflecting increased personal income tax receipts. In reality, we do not know precisely how much additional Connecticut personal income tax was actually collected as a result of the infusion of film production payroll.

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 4.13 suggests that while there are gains in private sector jobs, 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).

The return on investment modeled as the ratio of total state revenue gained over the 3½-year period to total claims (tax cost) is -$0.94. That is, as modeled, for each dollar the state gives up, it gets four cents back. Despite this contrived measure of return, note that on average each year,

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

the claims (tax cost) amount to $40 million and net state revenue is $995,401 above the baseline forecast or what would have happened absent the credit. The reported net state revenue in Table 4.13 includes the effects of the $40 million annual average tax cost and the increased revenue from taxing payroll and the economic activity from spending and creating full-time, permanent jobs. Therefore, we may conclude that the film production tax credit more than pays for itself in terms of net state revenue averaged over the study period. We note in Table 4.13 as well the precipitous decline in payroll and film production spending in 2009 that we attribute at least in part to the Great Recession.

Table 4.13: Economic and Fiscal Impacts of the Film Production Tax Credit, 2006-2009

Film Production Tax Credit	2006	2007	2008	2009	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$0	$54,132,334	$79,493,273	$26,474,149	$40,024,939		
Total Payroll	$25,658,474	$138,629,855	$116,878,835	$33,764	$70,300,232		
Total CT Vendor Spend	$7,554,569	$28,324,448	$32,234,902	$439,650	$17,138,392		
Payroll + Spend	$33,213,043	$166,954,303	$149,113,737	$473,414	$87,438,624		
Changes in:							
Total Employment	176	-148	-510	36	-111		
Total Non-Farm Employment	140	537	539	375	398	$100,625	
GDP	$12,265,123	$1,918,943	-$9,787,196	$29,136,679	$8,383,387		
State Revenues	$846,539	$3,728,196	$2,230,000	$2,274,952	$2,269,922		$0.06
State Expenditures	-$732,399	$1,611,668	$3,440,000	$778,812	$1,274,520		
Net State Revenue Before Est. Payroll Tax	$1,578,938	$2,116,528	-$1,210,000	$1,496,140	$995,401		
Estimated Personal Income Tax Revenue	$1,282,924	$6,931,493	$5,843,942	$1,688	$3,515,012		

Recommendation

Because we have omitted certain spending (per diem) as described above, the reported results are conservative. Moreover, the three film tax credit programs stimulated investment in educational programs at the state's community colleges to build the workforce required to support the film, television and digital animation industries. The State of Connecticut, through the Office for Workforce Competitiveness and in partnership with the DECD Office of Film, Television, and Digital Media, offered a Film Industry Training Program (FITP) for the past three years. The state's investment in these programs has been approximately $1 million. FITP classes are taught by motion picture professionals, specifically the International Alliance of Theatrical Stage Employees (IATSE) and the Directors' Guild of America (DGA) members, who provide trainees with the opportunity to learn highly skilled trades and build relationships with accomplished professionals in the film, television and digital media industry.

Middlesex Community College, Norwalk Community College and Quinnipiac University hosted the program. There were 89 graduates of the program in 2010, 124 graduates in 2009 and 150 graduates in 2008 for a total of 363 people completing the program to date.

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.

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.[28] Further, since the film tax credit program was established in 2006, an industry facilitating the market for assigning credits has expanded.[29] 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

[28] Testimonials available on request.

[29] 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.

division of Fox (makers of the Ice Age series, “Horton Hears a Who” and the soon to be released in 3D, “Rio”), brought over 300 jobs. Three NBCUniversal talk shows (Steve Wilkos, Maury Povich, and Jerry Springer) relocated to Connecticut (in the current credit pipeline). ESPN has erected a new building on their campus primarily dedicated to their digital media operations. Showtime series “The Big C” recently completed their pilot and first season and are returning for season two. TBS series “Are We There Yet?” is in the process of filming 100 episodes. 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.

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 fin the relevant sectors. We model 20% of the value of furniture, fixtures and equipment (FF&E) purchased as an increase in wholesale trade.[30] We increase the non-residential capital stock in the state by the value of construction and FF&E. The claiming

[30]It is the 20% gross margin of the wholesale industry that confers benefit to the state; the remainder goes to transportation and the producer that we assume are located outside Connecticut.

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.

We do not include Blue Sky studios in this analysis as their infrastructure tax credits are included under the digital animation tax credit analysis, as part of the incentive package extended to Blue Sky to relocate to Connecticut.

Table 4.14 shows the amounts claimed and firms claiming the film production infrastructure tax credit. As noted, we exclude Blue Sky from this analysis because we include its infrastructure credit in the analysis of the digital animation tax credit.

Table 4.14: Film Production Infrastructure Tax Credit Expenditure and Claims

Infrastructure Tax Credit				
Applicant	**NAICS**	**CT Expenditures**	**Date Issued**	**Claim Amount**
Blue Sky Studios	512	$17,940,989.00	6/8/2009	$3,588,197.80
The Brand Gallery	541	$193,604.00	2/19/2010	$29,041.00
345 Ely, LLC	531	$6,723,934.00	2/10/2010	$1,344,787.00
World Wrestling Entertainment, Inc.	711	$25,313,556.00	2/1/2010	$5,062,711.00
CFC Stillwater, LLC	531	$11,236,612.00	6/17/2010	$2,247,322.00
Totals		**$61,408,695.00**		**$12,272,058.80**

Excluding Blue Sky, the total amount claimed in 2010 (that we assume is the same as the credits issued) is $8,683,861. Construction and related spending occurred in 2007, 2008 and 2009 in the amount of $43,467,706 excluding Blue Sky. In 2010, four firms 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 4.15 shows the microsimulation results for the film production infrastructure tax credit. We assume for modeling purposes that the credits issued for 2010 are claimed in 2010 to synchronize costs and benefits. Otherwise, we do not know when or how much of the credit will be claimed by which industries.

Table 4.15: Economic and Fiscal Impacts of the Film Production Infrastructure Tax Credit, 2007-20010

Film Production Tax Credit	2007	2008	2009	2010	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$0	$0	$0	$8,683,861	$2,170,965		
Changes in:							
Total Employment	4	24	28	-120	-16		
Total Non-Farm Employment	2	21	23	6	13	$165,055	
GDP	$423,092	$2,707,553	$3,500,550	-$10,302,841	-$917,912		
State Revenues	$22,330	$164,000	$247,990	-$99,762	$83,640		$0.04
State Expenditures	-$10,680	-$84,000	-$62,510	$578,622	$105,358		
Net State Revenue	$33,010	$248,000	$310,500	-$678,384	-$21,719		

Recommendation

Table 4.15 shows that on average each year the infrastructure tax credit claim was $2.17 million while net state revenue averaged $21,719 below the baseline each year meaning that as modeled that the state received almost $22,000 less 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 four firms in Table 4.14. 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 costs the state an insignificant amount of 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 §12-217ll 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 Carryforward/Carryback 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 carryback 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 digital animation credit in two ways. In the first, we use a simple approach as we do in other tax credit analyses. That is, we model the benefit to the claiming firms as a reduction in their cost of capital by the amount of the tax credit and the cost to the state as an equivalent reduction in state government spending. The digital animation tax credits amounted to $18.12 million in 2009.[31] Therefore we reduce the capital cost for the motion picture and sound recording industries (NAICS sector 512, the sector in which the claiming firm is situated) in the state by this amount in 2009 and reduce state government spending by the same amount. We do this analysis for 2009, as no credits were granted in 2008.

The second modeling strategy accounts for the premise that the 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.

Blue Sky spent $11.12 million for leasehold improvements to an existing building in 2008, $0.7 million in architectural and engineering fees in 2008, and $6.1 million for furniture, fixtures and equipment (FF&E) in 2008. Of the latter, we assume 20% of the FF&E value impacts the state economy as these are typically wholesale purchases.[32] The non-residential capital stock (grand list value) in the state increases by the value of the leasehold improvements and expenditure for FF&E.

The company had an average of 360 jobs in 2009. 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. Data provided by the company indicated that 93% of its employees would

[31] This exceeds the annual $15 million limit because the single claimant filed for part of its 2008 fiscal year and half of its 2009 fiscal year that runs from July 1 through June 30.

[32] It is exclusively wholesale's gross margin that affords benefit to the state because the goods are produced elsewhere and transported to the state.

not (initially) relocate to Connecticut and we make a residence adjustment to account for a portion of the payroll that leaves the state.

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%. In 2008 and 2009, 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 is 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. In so doing, we exclude Blue Sky from the infrastructure tax credit analysis as that would double count the costs and benefits for that program while underestimating the costs and benefits of this program.

Table 4.16 reports the microsimulation results for the digital animation tax credit in the simplest terms. This result reflects the tax cost to the state on the one hand and the reduction in the claiming firm's cost of capital. In this case, we ignore the relocation of the firm to Connecticut and the creation of 360 new, high-paid jobs as well as the costs of the entire incentive package needed to induce the relocation. The results are understandably negative because the tax cost overwhelms the private benefit of the reduced capital cost. This illustrates the need for a detailed analysis that DECD can undertake as we were responsible for the entire incentive package and the analysis that supported its presentation to the company.

Table 4.16: Net Economic and fiscal Impact of the Digital Animation Tax Credit (Partial Effect)

Digital Animation Tax Credit	2009	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$18,107,562		
Changes in:			
Total Employment	-325		
Total Non-Farm Employment	-48	-$374,588	
GDP	-$24,134,150		
State Revenues	-$522,624		-$0.03
State Expenditures	$1,455,149		
Net State Revenue	-$1,977,774		

Table 4.17 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 show 2010 results despite having actual data, however, we know there is no new construction (hence no additions to the grand list) and the infrastructure tax credit will not be claimed. We know the company will employ at least 360 people from company and CT DoL records. We know the digital animation tax credit will revert to the $15 million level in 2010. We know the 2010 cost of the loan as we model new debt service as a level mortgage payment. There will be no loan consequences for the company in 2010 because it is still in the deferment period. The changes in tax credit claims from $21.7 million to $15 million reduce the company's benefit from a less reduced cost of capital. We inflate the difference between the economic model's industry average wage bill by 3% for 2010 as well as the residence adjustment for payroll that leaves the state.

Table 4.17: Net Economic and fiscal Impact of the Digital Animation Tax Credit (Total Effect)

Digital Animation Tax Credit	2008	2009	2010	Annual Average	Cost per Non-Farm Job	Revenue earned per $1 of credit
Total Claims	$0	$21,695,760	$15,000,000	$12,231,920		
Changes in:						
Total Employment	185	114	296	198		
Total Non-Farm Employment	195	426	494	372	$32,922	
GDP	$11,263,610	$3,074,725	$19,842,972	$11,393,769		
State Revenues	$1,190,000	$204,951	$462,057	$619,003		$0.05
State Expenditures	-$850,000	$1,680,595	-$504,063	$108,844		
Net State Revenue	$2,040,000	-$1,475,645	$966,120	$510,159		

Table 4.17 shows that the claims for the digital animation and infrastructure tax credits combined averaged $12.2 million from 2008 through 2010 while net state revenue averaged $510,159 over the period. This latter amount includes the annual average tax costs of both tax

credit programs. This result suggests that the state has received more than a half million dollars each year (including the tax cost) since 2008 because of Blue Sky's relocation to Connecticut. 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 will likely relocate to Connecticut reducing the payroll leaving the state and increasing household consumption and related taxes (and net state revenue). Moreover, non-resident Blue Sky workers commuting from New York pay personal income taxes in both states. As more Blue Sky workers relocate to Connecticut, these workers' income taxes will not be divided between two states.

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.

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 2006-2009

CHFA provided funding source and use data for 2006 through 2009 for housing construction under the HTCC program. Table 4.18 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 556 units in 2007 to 766 units in 2008 and then to 849 units in 2009 despite the recession that began in Connecticut in March 2008. More than 95% of these units were rental properties. Funding from all sources increased from $114.3 million in 2006 to $130.5 million in 2007 to $131.9 million in 2008 and then to $195.8 million in 2009. The annual average growth in funding was 21.2% while the annual average growth in units was 20.5%.

HTCC contributions were $9.89 million in 2006, $9.06 million in 2007, $9.87 million in 2008 and $9.61 million in 2009 reflecting the HTCC program's $10 million annual allocation. The funding gap in 2006 and 2008 was less than $0.6 million while in 2007 it increased to $4.35 million and subsequently decreasing to $1.13 million in 2009.

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 $445.5 million over the four-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 4.18: Funding Sources and Uses for 2006-2009 HTCC Program

	HTCC Funding for 2006				HTCC Funding for 2007				HTCC Funding for 2008				HTCC Funding for 2009			
		Rental				Rental				Rental				Rental		
USES	**Homeownership**	**Housing Authorities**	**Supportive Housing**	**Non-Profit**	**Homeownership**	**Housing Authorities**	**Supportive Housing**	**Non-Profit**	**Homeownership**	**Housing Authorities**	**Supportive Housing**	**Non-Profit**	**Homeownership**	**Housing Authorities**	**Supportive Housing**	**Non-Profit**
Construction	$4,878,369	$3,125,000	$22,592,619	$54,130,006	$2,978,600	$12,498,077	$56,024,975	$24,397,141	$2,813,559	$39,388,833	$24,448,224	$23,019,733	$1,979,860	$58,122,245	$41,093,326	$31,005,963
Architectural and Engineering	$10,500	$212,000	$1,435,239	$3,050,183	$34,100	$844,748	$3,831,382	$1,459,201	$32,500	$2,175,889	$1,532,293	$1,341,714	$10,000	$3,321,115	$2,324,377	$1,747,258
Finance and Interim Costs	$212,504	$154,550	$1,534,455	$2,273,236	$138,530	$311,252	$2,102,565	$477,719	$165,000	$911,814	$473,817	$1,364,872	$82,734	$5,458,919	$1,986,056	$1,495,331
Soft Costs	$94,906	$108,450	$1,561,734	$2,441,821	$97,640	$672,356	$1,975,758	$483,775	$105,258	$1,640,060	$647,632	$1,554,757	$19,177	$1,978,414	$1,470,120	$1,117,645
Developer Allowance/Fee	$0	$0	$2,165,334	$5,124,481	$300,620	$1,307,902	$6,444,935	$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	$486,806	$32,407	$0	$0	$245,000	$288,278	$0	$197,340	$24,574	$120,000
Site Acquisition	$1,916,918	$0	$4,489,801	$2,606,615	$279,885	$941,493	$7,515,482	$2,706,801	$187,500	$0	$1,189,700	$14,795,728	$195,000	$6,695,382	$3,758,981	$10,414,304
Capitalized Reserves	$0	$0	$603,201	$0	$0	$394,258	$3,309,805	$533,253	$0	$1,864,894	$287,616	$1,634,549	$0	$2,220,428	$1,071,374	$1,687,950
Entity and Syndication Costs	$0	$0	$131,800	$64,850	$0	$231,749	$11,778	$152,601	$0	$814,890	$0	$250,862	$0	$266,409	$148,835	$408,862
Total Uses	$7,113,197	$3,600,000	$34,514,183	$69,691,192	$3,829,375	$17,201,835	$81,703,486	$32,143,951	$3,553,817	$50,989,502	$31,328,598	$46,571,769	$2,356,771	$87,920,195	$55,987,193	$50,705,126
SOURCES																
Total HTCC Claims for Current Year	$2,084,550	$500,000	$2,249,657	$5,056,226	$809,490	$1,211,316	$3,068,724	$3,974,595	$1,000,000	$1,500,000	$2,097,674	$5,269,971	$1,000,000	$1,152,770	$2,446,670	$5,013,524
Total Prior HTCC	$0	$0	$839,981	$1,213,422	$0	$0	$737,200	$941,457	$0	$0	$970,444	$500,000	$16,150	$500,000	$2,927,556	$1,765,163
LIHTC Equity	$0	$0	$10,459,710	$29,005,962	$0	$5,739,181	$0	$10,075,387	$0	$29,146,260	$0	$12,082,806	$0	$32,402,220	$7,682,220	$11,706,030
CHFA	$0	$0	$3,580,000	$5,930,000	$0	$1,500,000	$0	$2,282,407	$0	$0	$0	$9,909,842	$0	$10,033,836	$5,315,156	$5,250,000
Next Steps/PILOTS	$0	$0	$12,781,390	$0	$0	$0	$57,925,896	$0	$0	$0	$18,093,950	$0	$0	$0	$31,163,097	$0
Sales Proceeds	$2,033,638	$0	$0	$0	$2,090,000	$0	$0	$0	$1,922,500	$0	$0	$0	$1,045,000	$0	$0	$0
Equity	$185,000	$0	$581,907	$2,957,844	$30,000	$3,468,303	$4,556,147	$1,016,660	$450,317	$330,554	$3,656,030	$3,900,640	$0	$1,160,547	$2,903,493	$2,662,237
Grants	$1,557,267	$1,400,000	$3,796,086	$17,395,346	$568,333	$750,000	$6,233,591	$6,354,584	$181,000	$8,250,000	$6,210,500	$3,516,483	$231,250	$35,463,592	$1,299,000	$12,775,309
Public Loans	$0	$0	$0	$6,768,135	$312,857	$3,653,781	$5,150,000	$6,063,109	$0	$10,102,688	$300,000	$9,083,060	$45,000	$6,000,000	$2,250,000	$1,878,003
Private Loans	$802,750	$1,700,000	$95,000	$1,376,012	$0	$590,000	$45,000	$1,379,800	$0	$1,660,000	$0	$1,792,850	$19,371	$860,000	$0	$8,865,083
Total Sources	$6,663,205	$3,600,000	$34,383,731	$69,702,947	$3,810,680	$16,912,581	$77,716,558	$32,087,999	$3,553,817	$50,989,502	$31,328,598	$46,055,652	$2,356,771	$87,572,965	$55,987,192	$49,915,349
GAP	$449,992	$0	$130,452	-$11,755	$18,695	$289,254	$3,986,928	$55,952	$0	$0	$0	$516,117	$0	$347,230	$1	$789,777
Total Number of Units	56	20	120	297	13	106	287	150	18	280	92	376	5	355	157	332

Source: CHFA

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 4.19 summarizes the direct effects that drive the impact analysis (dollars in nominal terms). Debt service accumulates each year through 2008 when it peaks at almost $4.25 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 2028 when the encumbrance for the last public loan issued in 2009 ends.

Table 4.19: Direct Effects of HTCC Program 2006 - 2009

Industry Sector Sales	2006	2007	2008	2009
Multi-family construction (in millions)	$92.01	$105.85	$98.94	$148.75
Prof, tech services	$9,111,483	$9,795,088	$10,095,855	$12,812,212
Financial Services	$4,174,745	$3,030,066	$2,915,503	$9,023,040
Local Government (Conveyance Taxes)	$22,533	$28,609	$40,432	$52,659
State Government (Conveyance Taxes)	$90,133	$114,437	$161,729	$210,637
State Government (new debt service)	$556,993)	$1,806,230	$3,409,835	$4,247,036
Residential Capital Stock (in millions)	$92.01	$105.85	$98.94	$148.75
Utilities' Capital Cost	-$2,967,130	-$2,719,237	-$2,960,293	-$2,883,889
Real Estate	$540,800	$686,620	$970,376	$1,263,820

Source: CHFA and author's calculations.

Table 4.20 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 $14.38 million above the baseline each year from 2006 through 2009. Absent further net new economic activity such as net new household consumption, the economic and fiscal effects of HTCC projects dissipate quickly after 2009. 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 benefit. 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.

Table 4.20: REMI Results (Changes from Baseline Forecast)

Economic Indicator	2006	2007	2008	2009	Avg. Ann. Change
Total Employment (Jobs)	1,469	1,560	1,288	1,797	1,529
Construction Jobs	826	901	753	1046	881
Manufacturing Jobs	34	33	24	32	31
Trade Jobs	153	167	143	204	167
Transportation, Information & Financial Activities Jobs	81	71	49	79	70
Service Jobs	369	385	327	443	381
State GDP (Nominal $)	$93,668,310	$99,794,573	$85,619,937	$126,560,600	$101,410,855
Personal Income (Nominal $)	$75,870,000	$89,020,000	$82,060,000	$117,500,000	$91,112,500
Output (Nominal $)	$173,965,347	$186,093,795	$160,145,459	$236,886,022	$189,272,656
State Revenues (Nominal $)	$9,123,000	$10,285,621	$9,469,585	$13,738,229	$10,654,109
State Expenditures (Nominal $)	-$5,620,000	-$4,437,657	-$1,803,631	-$3,038,998	-$3,725,072
Net State Revenue (Nominal $)	$14,743,000	$14,723,277	$11,273,216	$16,777,227	$14,379,180

Source: REMI Ver. 9.5 State Model, Regional Economic Models, Inc., Amherst, MA and author's calculations.
Jobs in subsectors may not add to the total because of round off error.

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 $101.4 million more each year in the 2006-2009 period than had these HTCC-funded projects not occurred.

Output is the value of shipments or sales by all industries and averages $189.3 million more each year in the 2006-2009 period than had these HTCC-funded projects not occurred.

Recommendation:

We recommend that the Housing Contribution tax credit continue as is. It 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, we recommend increasing the allocation from $10 million per year to $20 million per year.

Financial Institutions Tax Credit

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.

Recommendation

We recommend that the Financial Institutions tax credit program be eliminated because there have been no claims. We think the qualifying requirements are significantly difficult to satisfy and the instances in which they could apply are rare. In addition, there are several other tax credit and abatement programs for which a financial institution may qualify.

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. These purchases represent net additions to municipalities' grand lists. Table 4.21 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 to the extent that it allocates a portion of its claim to machinery and equipment investment and a portion to other (non-capital) purposes.

Table 4.21: Machinery and Equipment Property Tax Exemptions

Fiscal Year	Number of Firms	Amount Claimed and Revenue Forgone
2008-2009		$57,348,215
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

In this case, however, the exemption does not reduce the firm's cost of capital because we assume the firm uses the portion not expended on machinery and equipment representing the complementary range of induced behavior to increase shareholder value.[33] 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. In the abatement cases, we assume firms do not increase shareholder value or worker compensation using increased profits derived from the property tax exemption. 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 categorized 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.

We assume the property tax exemption acts as a price reduction on machinery, motor vehicles and other capital goods so firms buy more of them than they otherwise would. We assume claiming firms spend 20%, 50% and 100% of the dollar amount claimed on non-residential capital that includes plant and equipment representing the range of additional spending the incentive induced. This captures the fact that a range of investment would occur absent the exemptions and the responsiveness of purchasing capital goods to assumed relative price changes. These new capital goods including physical plant expansion enable claiming firms to produce additional output each year for the usable life of the capital. In some cases, new capital investment replaces worn out capital and maintains a given level of production. We cannot determine the mix of capital additions and replacement and therefore cannot determine the net growth of the grand list (the increase on the non-residential capital stock) or how much additional output (sales) and employment result from the induced investment. We therefore assume no incremental output (sales) results from the investment. The economic model calculates the increase in the non-residential stock of capital in the state as a consequence of the firms' capital spending. A portion of this investment represents replacement and maintenance of the capital stock and resets the depreciation clock in the Connecticut economic model.

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

[33] 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.

maintain a balanced budget as we assume taxes are not increased to cover the unanticipated payments to municipalities. As the benefits decrease in the 20% and 50% cases, state spending (the tax cost) does not.

Net Economic and Fiscal Impact of Machinery and Equipment Property Tax Exemptions

Table 4.22 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 4.21 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 2009 is $59.8 million and the number of firms based on limited data claiming the property tax exemption is between four 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 occur 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.

Table 4.22: Net Economic and Fiscal Impacts of the Machinery and Equipment Property Tax Exemptions, 1997 through 2009

	Average Annual Change From Baseline		
Economic Variable	**20% Case**	**50% Case**	**100% Case**
Total Employment (Jobs)	-1,494	-1,323	-1,039
Non-farm Employment (Jobs)	-446	-286	-19
State Gross Domestic Product	-$100,340,775	-$90,817,953	-$74,799,061
State Revenue	-$10,016,539	-$8,650,126	-$6,282,631
State Expenditure	-$4,267,990	-$3,925,705	-$3,331,421
Net State Revenue	-$5,748,549	-$4,724,421	-$2,951,210

Recommendation:

We recommend that the property tax exemptions under §12-81 #60, #70 and #72 be eliminated. The annual net benefit to the state is clearly negative and the $60 million on average annually in forgone revenue could be spent on critical infrastructure such as education, workforce training, transportation (on for example, deficient bridges and roads), housing and energy investment. There are other critical needs as well such as reducing the state's debt, building up its reserve fund and making required contributions to its teachers' and state employees' retirement funds.

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	Windham
Hamden	Norwalk	

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.[34] 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 4.23 shows the dollar amounts claimed each fiscal year since SFY 2002. Data are from the OPM Municipal Grants database.

Table 4.23: Enterprise Zone Property Tax Abatements, SFY 2003 through SFY 2010

Fiscal Year	State	Local	Business	Total
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	**$56,315,468**	**$56,315,468**	**$28,157,734**	**$140,788,670**

[34] 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 4.24 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 4.24 with OPM's Municipal Grants data in Table 4.23 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 4.23 data for fiscal years before SFY 2005 reported in Table 4.24 from earlier versions of the Municipal Grants database that reports claims by municipality aggregated and adjusted from firm-level data.

Table 4.24: Enterprise Zone Property Tax Abatements by NAICS Industry and Year

NAICS Industry	Industry Description / Fiscal Year	2005	2006	2007	2008	2009	2010	2011	Totals	Annual Average
23	Construction	$ 2,194	$ 19,013	$ -	$ -	$ -	$ -	$ -	$ 21,208	$ 3,030
42	Wholesale Trade	$ 97,076	$ 187,575	$ 19,013	$ 236,537	$ 406,423	$ 364,895	$ 116,678	$ 1,428,196	$ 204,028
44	Retail Trade	$ 43,262	$ 27,191	$ 187,575	$ 883,906	$ 664,609	$ 660,156	$ 639,655	$ 3,106,353	$ 443,765
55	Management of Companies & Enterprises	$ 62,508	$ 67,657	$ 27,191	$ 542,198	$ 579,663	$ 454,756	$ 440,487	$ 2,174,461	$ 310,637
311	Food Manufacturing	$ 159,316	$ 170,840	$ 67,657	$ 132,082	$ 157,799	$ 335,778	$ 267,389	$ 1,290,862	$ 184,409
312	Beverage & Tobacco Product Manufacturing	$ 191,694	$ 188,117	$ 170,840	$ -	$ 212,009	$ 175,849	$ 4,034	$ 942,543	$ 134,649
313	Textile Mills	$ 38,837	$ 35,725	$ 188,117	$ -	$ 14,112	$ 14,199	$ 13,724	$ 304,713	$ 43,530
314	Textile Product Mills	$ 6,793	$ 30,093	$ 35,725	$ 24,090	$ 26,076	$ 27,395	$ 30,428	$ 180,600	$ 25,800
315	Apparel Manufacturing	$ 17,642	$ 1,422	$ -	$ -	$ -	$ 3,272	$ 3,597	$ 25,933	$ 3,705
316	Leather & Allied Product Manufacturing	$ -	$ 5,027	$ 30,093	$ -	$ 3,100	$ 3,111	$ -	$ 41,331	$ 5,904
321	Wood Product Manufacturing	$ 61,800	$ 99,169	$ 1,422	$ 51,257	$ 63,134	$ 45,619	$ 45,970	$ 368,370	$ 52,624
322	Paper Manufacturing	$ 136,954	$ 126,964	$ 5,027	$ 11,358	$ 11,001	$ 11,078	$ 12,061	$ 314,442	$ 44,920
323	Printing & Related Support Activities	$ 110,228	$ 139,226	$ 99,169	$ 70,200	$ 88,180	$ 89,884	$ 57,124	$ 654,011	$ 93,430
324	Petroleum & Coal Products Manufacturing	$ 17,981	$ 18,121	$ 126,964	$ 14,092	$ 15,286	$ -	$ -	$ 192,444	$ 27,492
325	Chemical Manufacturing	$ 3,780,584	$ 3,546,213	$ 139,226	$ 2,076,307	$ 2,017,812	$ 2,727,397	$ 2,450,769	$ 16,738,307	$2,391,187
326	Plastics & Rubber Products Manufacturing	$ 157,797	$ 110,464	$ 18,121	$ 60,040	$ 43,567	$ 49,338	$ 27,545	$ 466,873	$ 66,696
327	Nonmetallic Mineral Product Manufacturing	$ 44,678	$ 61,867	$ 3,546,213	$ 40,513	$ 24,889	$ 18,429	$ 8,029	$ 3,744,617	$ 534,945
331	Primary Metals Manufacturing	$ 38,922	$ 142,153	$ 110,464	$ 51,188	$ 33,410	$ 29,491	$ 277,433	$ 683,061	$ 97,580
332	Fabricated Metal Product Manufacturing	$ 1,806,883	$ 374,049	$ 61,867	$ 322,046	$ 488,554	$ 637,836	$ 544,911	$ 4,236,146	$ 605,164
333	Machinery Manufacturing	$ 228,131	$ 189,568	$ 142,153	$ 219,762	$ 200,545	$ 108,403	$ 112,680	$ 1,201,242	$ 171,606
334	Computer & Electronic Product Manufacturing	$ 103,812	$ 118,577	$ 374,049	$ 69,452	$ 77,656	$ 79,426	$ 67,767	$ 890,739	$ 127,248
335	Electrical Equipment, Appliance & Component Manufacturing	$ 266,332	$ 283,505	$ 189,568	$ 51,319	$ 11,726	$ 42,207	$ 5,632	$ 850,291	$ 121,470
337	Furniture & Related Product Manufacturing	$ 95,480	$ 63,315	$ 118,577	$ 105,952	$ 66,739	$ 72,751	$ 81,009	$ 603,824	$ 86,261
339	Miscellaneous Manufacturing	$ 134,524	$ 118,336	$ 283,505	$ 187,141	$ 147,572	$ 158,198	$ 180,206	$ 1,209,483	$ 172,783
488	Support Activities for Transportation	$ 15,053	$ 34,333	$ 63,315	$ 44,536	$ 96,734	$ 16,242	$ -	$ 270,214	$ 38,602
492	Couriers & Messengers	$ 18,213	$ 4,863	$ 118,336	$ 6,091	$ 6,480	$ -	$ -	$ 153,983	$ 21,998
511	Publishing Industries (except Internet)	$ 3,752	$ 4,220	$ 34,333	$ 35,517	$ 61,843	$ 49,661	$ 50,837	$ 240,163	$ 34,309
512	Motion Picture & Sound Recording Industries	$ 2,871	$ 2,935	$ 4,863	$ 1,148	$ 5,981	$ -	$ -	$ 17,797	$ 2,542
515	Broadcasting (except Internet)	$ 30,870	$ 24,170	$ -	$ -	$ 74,892	$ 71,904	$ 101,108	$ 302,944	$ 43,278
516 ‡	Internet publishing and broadcasting	$ 727	$ -	$ -	$ -	$ -	$ -	$ -	$ 727	$ 104
517	Telecommunications	$ 29,755	$ 2,419	$ -	$ 2,477	$ -	$ -	$ -	$ 34,651	$ 4,950
518	Data Processing, Hosting & Related Services	$ -	$ 101,558	$ 4,220	$ 90,526	$ 96,538	$ 98,315	$ 3,913	$ 395,070	$ 56,439
522	Credit Intermediation & Related Activities	$ 241,513	$ 248,853	$ 2,935	$ 10,493	$ 68,000	$ 129,328	$ 100,136	$ 801,257	$ 114,465
523	Securities, Commodity Contracts & Other Financial Investments & Related Activities	$ -	$ -	$ 24,170	$ 24,449	$ 58,789	$ 69,902	$ 1,283,888	$ 1,461,198	$ 208,743
524	Insurance Carriers & Related Activities	$ -	$ -	$ -	$ 34,908	$ 40,273	$ 41,917	$ 42,737	$ 159,836	$ 22,834
531	Real Estate	$ -	$ 47,714	$ -	$ -	$ -	$ -	$ -	$ 47,714	$ 6,816
541	Professional, Scientific & Related Technical Services	$ 108,953	$ 80,813	$ 2,419	$ 43,624	$ 55,331	$ 55,999	$ 108,543	$ 455,683	$ 65,098
561	Administrative & Support Services	$ 61,099	$ 336,027	$ 101,558	$ 329,732	$ 3,060	$ 3,060	$ 3,527	$ 838,062	$ 119,723
562	Waste Management & Remediation Services	$ 30,150	$ 29,315	$ 248,853	$ 18,508	$ -	$ -	$ -	$ 326,826	$ 46,689
711	Performing Arts, Spectator Sports & Related Industries	$ 620	$ 614	$ -	$ 4,669	$ 4,457	$ 13,220	$ -	$ 23,581	$ 3,369
811	Repair & Maintenance	$ 33,711	$ 7,346	$ 47,714	$ 16,021	$ 24,544	$ 9,055	$ 2,979	$ 141,370	$ 20,196
3363	Motor Vehicle Parts Manufacturing	$ 7,773	$ 8,942	$ 80,813	$ 5,656	$ 5,729	$ 5,713	$ 7,867	$ 122,492	$ 17,499
3364	Aerospace Product & Parts Manufacturing	$ 75,309	$ 70,548	$ 336,027	$ 48,029	$ 25,337	$ 12,619	$ 13,058	$ 580,926	$ 82,989
3366	Ship & Boat Building	$ 72,279	$ 188	$ 29,315	$ 267,792	$ 274,970	$ 518,777	$ 699,608	$ 1,862,929	$ 266,133
	Totals	$ 8,336,078	$ 7,129,044	$ 7,041,407	$ 6,133,616	$ 6,256,819	$ 7,205,179	$ 7,805,328	$ 49,907,471	$7,129,639

Results for Enterprise Zone Property Tax Abatements

Tables 4.25 through 4.27 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. Table 4.25 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 4.26 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 less of the investment is assumed to be undertaken because of the abatement. The cumulative effect is smaller because the assumed benefit of the incentive is smaller while the public cost is the same.

Table 4.25: Results for Enterprise Zone Property Tax Abatements, 20% Case

Economic Variable \ Fiscal Year	2005	2006	2007	2008	2009	2010	2011	Annual Average
Total New Employment Change	-354	-246	-199	-136	-119	-141	-135	-190
Total Claims	$8,336,078	$7,106,674	$7,068,709	$6,265,698	$6,256,819	$7,205,179	$7,805,328	$7,149,212
Employment Change in:								
Utilities	-1	0	0	0	0	0	0	0
Construction	-9	-6	-4	-1	-1	-3	-4	-4
Manufacturing	13	19	22	24	25	26	27	22
Wholesale Trade	-2	1	2	3	4	4	4	2
Retail Trade	-6	-1	5	8	8	8	7	4
Transportation and Warehousing	-1	0	0	1	1	1	1	0
Information	-2	-1	0	1	1	1	1	0
Finance and Insurance	-2	3	6	8	9	10	18	7
Real Estate and Rental and Leasing	-4	-1	1	2	2	2	3	1
Professional and Technical Services	-9	-4	0	3	4	5	6	1
Management of Companies and Enterprises	0	1	2	3	3	3	3	2
Administrative and Waste Services	-15	-9	-7	-3	-3	-3	-3	-6
Educational Services	-2	-1	0	0	0	0	1	0
Health Care and Social Assistance	-13	-6	-4	-1	0	-1	0	-4
Arts, Entertainment, and Recreation	-2	-1	-1	0	0	0	0	-1
Accommodation and Food Services	-7	-4	-3	-1	-1	-1	-1	-3
Other Services, except Public Administration	-9	-5	-2	0	0	-1	0	-2
Private Non-Farm Employment	-70	-16	18	46	54	52	64	21
State Government	-140	-114	-109	-91	-87	-97	-100	-105
Local Government	-144	-116	-110	-91	-86	-96	-99	-106
New Gross Domestic Product	-$21,069,108	-$12,457,650	-$6,935,939	-$1,190,656	$1,220,129	$0	$3,846,612	-$5,226,659
New State Revenues	-$1,767,674	-$1,261,248	-$855,349	-$624,000	-$600,505	-$675,234	-$706,439	-$964,002
New State Expenditures	$831,682	-$107,482	-$473,792	-$834,000	-$936,624	-$865,308	-$928,278	-$397,587
Net New State Revenues	-$2,599,357	-$1,153,766	-$381,558	$210,000	$336,119	$190,074	$221,839	-$566,415

Table 4.26: Results for Enterprise Zone Property Tax Abatements, 50% Case

Economic Variable \ Fiscal Year	2005	2006	2007	2008	2009	2010	2011	Annual Average
Total Employment Change	-358	-276	-249	-195	-182	-206	-209	-239
Total Claims	$8,336,078	$7,106,674	$7,068,709	$6,265,698	$6,256,819	$7,205,179	$7,805,328	$7,149,212
Employment Change in:								
Utilities	-1	-1	-1	0	0	0	0	0
Construction	10	6	3	0	-2	-3	-5	1
Manufacturing	6	9	11	13	13	14	15	12
Wholesale Trade	-3	-1	0	1	1	1	2	0
Retail Trade	-10	-6	-3	0	0	-1	-1	-3
Transportation and Warehousing	-1	-1	0	0	0	0	0	0
Information	-2	-1	0	0	0	0	1	0
Finance and Insurance	-3	0	3	5	6	7	11	4
Real Estate and Rental and Leasing	-5	-3	-2	-1	0	0	0	-2
Professional and Technical Services	-9	-5	-3	-1	0	0	1	-2
Management of Companies and Enterprises	0	0	1	1	2	2	2	1
Administrative and Waste Services	-16	-12	-10	-7	-6	-7	-7	-9
Educational Services	-2	-1	-1	-1	0	0	0	-1
Health Care and Social Assistance	-15	-10	-8	-6	-5	-6	-6	-8
Arts, Entertainment, and Recreation	-3	-2	-2	-1	-1	-1	-1	-2
Accommodation and Food Services	-8	-6	-5	-4	-4	-4	-4	-5
Other Services, except Public Administration	-11	-7	-6	-4	-4	-4	-4	-6
Private Non-Farm Employment	-72	-41	-23	-5	0	-3	1	-20
State Government	-140	-116	-111	-94	-90	-100	-104	-108
Local Government	-146	-120	-114	-96	-92	-102	-106	-111
New Gross Domestic Product	-$23,286,909	-$16,987,704	-$15,027,868	-$10,715,908	-$8,540,902	-$10,002,758	-$10,257,632	-$13,545,669
New State Revenues at State Average Rates	-$2,100,257	-$1,673,855	-$1,497,007	-$1,276,384	-$1,284,796	-$1,437,897	-$1,516,847	-$1,545,033
New State Expenditures at State Average Rates	$1,263,038	$204,985	-$271,658	-$771,545	-$993,185	-$1,009,028	-$1,156,548	-$262,899
Net New State Revenues	-$3,363,295	-$1,878,840	-$1,225,349	-$504,838	-$291,611	-$428,868	-$360,299	-$1,282,134

Table 4.27: Results for Enterprise Zone Property Tax Abatements, 100% Case

Economic Variable \ Fiscal Year	2005	2006	2007	2008	2009	2010	2011	Annual Average
Total New Employment Change	-331	-281	-276	-238	-231	-257	-270	-269
Total Claims	$8,336,078	$7,106,674	$7,068,709	$6,265,698	$6,256,819	$7,205,179	$7,805,328	$7,149,212
Employment Change in:								
Utilities	-1	-1	-1	-1	-1	-1	-1	-1
Construction	47	31	21	9	4	3	0	16
Manufacturing	0	1	1	2	2	2	3	2
Wholesale Trade	-3	-2	-2	-1	-1	-1	0	-1
Retail Trade	-11	-9	-9	-8	-7	-8	-8	-9
Transportation and Warehousing	-2	-1	-1	-1	-1	-1	-1	-1
Information	-1	-1	-1	0	0	0	0	0
Finance and Insurance	-5	-2	-1	1	3	3	4	0
Real Estate and Rental and Leasing	-5	-4	-4	-3	-3	-3	-3	-4
Professional and Technical Services	-6	-5	-4	-2	-2	-2	-2	-3
Management of Companies and Enterprises	0	0	0	0	0	0	0	0
Administrative and Waste Services	-16	-13	-12	-10	-9	-10	-10	-11
Educational Services	-2	-2	-2	-1	-1	-1	-1	-1
Health Care and Social Assistance	-16	-13	-12	-10	-10	-11	-12	-12
Arts, Entertainment, and Recreation	-3	-3	-2	-2	-2	-2	-2	-2
Accommodation and Food Services	-8	-7	-7	-7	-7	-7	-8	-7
Other Services, except Public Administration	-11	-9	-9	-7	-7	-8	-8	-8
Private Non-Farm Employment	-44	-42	-45	-41	-41	-46	-49	-44
State Government	-141	-117	-113	-96	-93	-103	-108	-110
Local Government	-146	-122	-118	-101	-97	-108	-113	-115
New Gross Domestic Product	-$23,841,359	-$20,724,999	-$20,692,219	-$18,217,044	-$17,935,895	-$20,505,655	-$22,182,130	-$20,585,614
New State Revenues at State Average Rates	-$1,795,310	-$1,633,085	-$1,754,793	-$1,630,009	-$1,654,495	-$1,905,525	-$2,096,404	-$1,728,869
New State Expenditures at State Average Rates	$1,419,393	$481,318	$24,276	-$517,936	-$812,606	-$946,511	-$1,166,806	-$58,678
Net New State Revenues	-$3,214,702	-$2,114,403	-$1,779,068	-$1,112,073	-$841,889	-$959,014	-$929,598	-$1,670,192

Table 4.27 displays results for the 100% case in which all 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 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 because of the abatement. The cumulative effect is smaller because the assumed benefit of the incentive is smaller while the public cost is the same as in the other two cases.

Recommendation

We recommend that the Enterprise Zone property tax abatement program be eliminated. The analysis above suggests the Enterprise Zone property tax abatement generates negative net benefits for Connecticut for a range of inducement assumptions. The analysis does not capture the costs to the state to administer the program or for firms to document their investments or for town assessors to verify the claims. From our evaluation of individual claims from OPM records, many are small (a few hundred dollars and some much smaller) and a few are quite large (millions of dollars). The inducement to invest additional sums in plant and equipment is quite small relative to the size of the investment. An enterprise zone itself may no longer be qualified in current demographic terms and there may be other tracts that qualify for Enterprise Zone benefits with respect to the 2010 Census.

As Census 2010 data becomes available, we recommend that each tract in the state be evaluated to determine whether it qualifies for Enterprise Zone designation. It is likely there have been significant changes in the demographics of the state since the 1980, 1990 and 2000 Censuses were used to designate the state's current Enterprise Zone tracts. With this information, we can redesign incentive programs to grow businesses and create net new jobs in distressed areas relative to other areas if that is a priority.

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

We describe part of this program above under the 25% and 50% Manufacturing Facilities tax credit program.

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, Hiring Incentive, Displaced Worker 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.

Appendix A: 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 can not 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 analysts 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 B: 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.

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

- 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. 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.

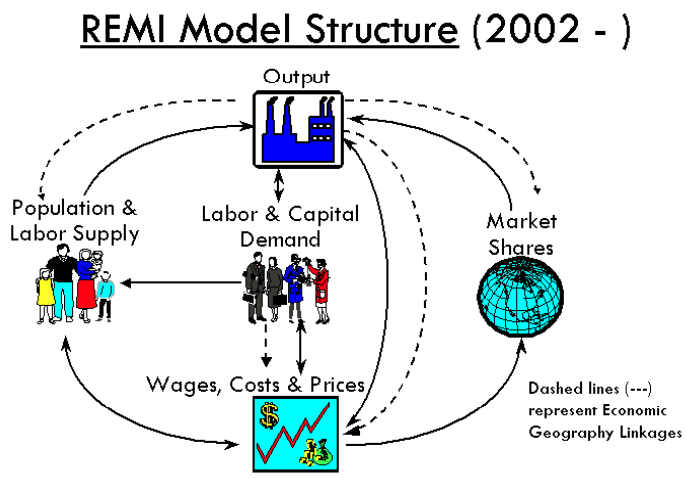
The REMI model is a structural model, meaning that it clearly includes cause-and-effect relationships. The model shares two key underlying assumptions with mainstream economic theory: *households maximize utility* and *producers maximize profits*. In the model, businesses produce goods to sell to other 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



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

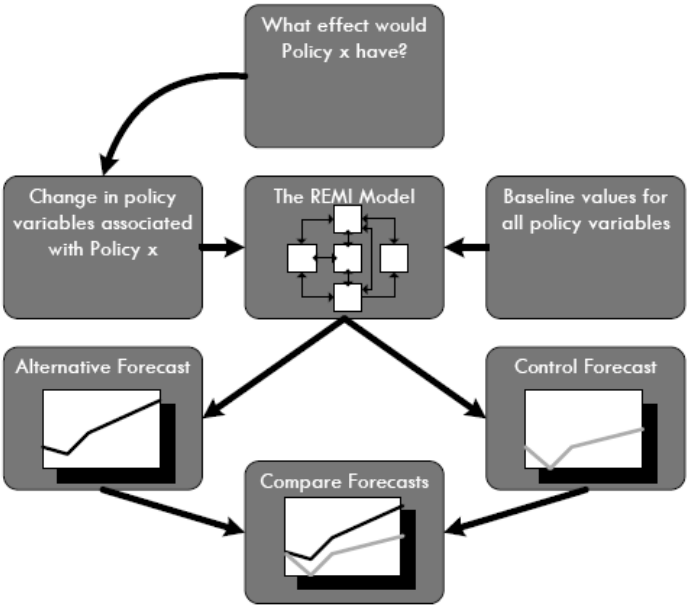


Figure B2 shows how this process would work for a policy change called Policy X. In order to understand the major elements in the model and their interactions, subsequent sections examine the various blocks and their important variable types, along with their relationships to each other and to other 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:

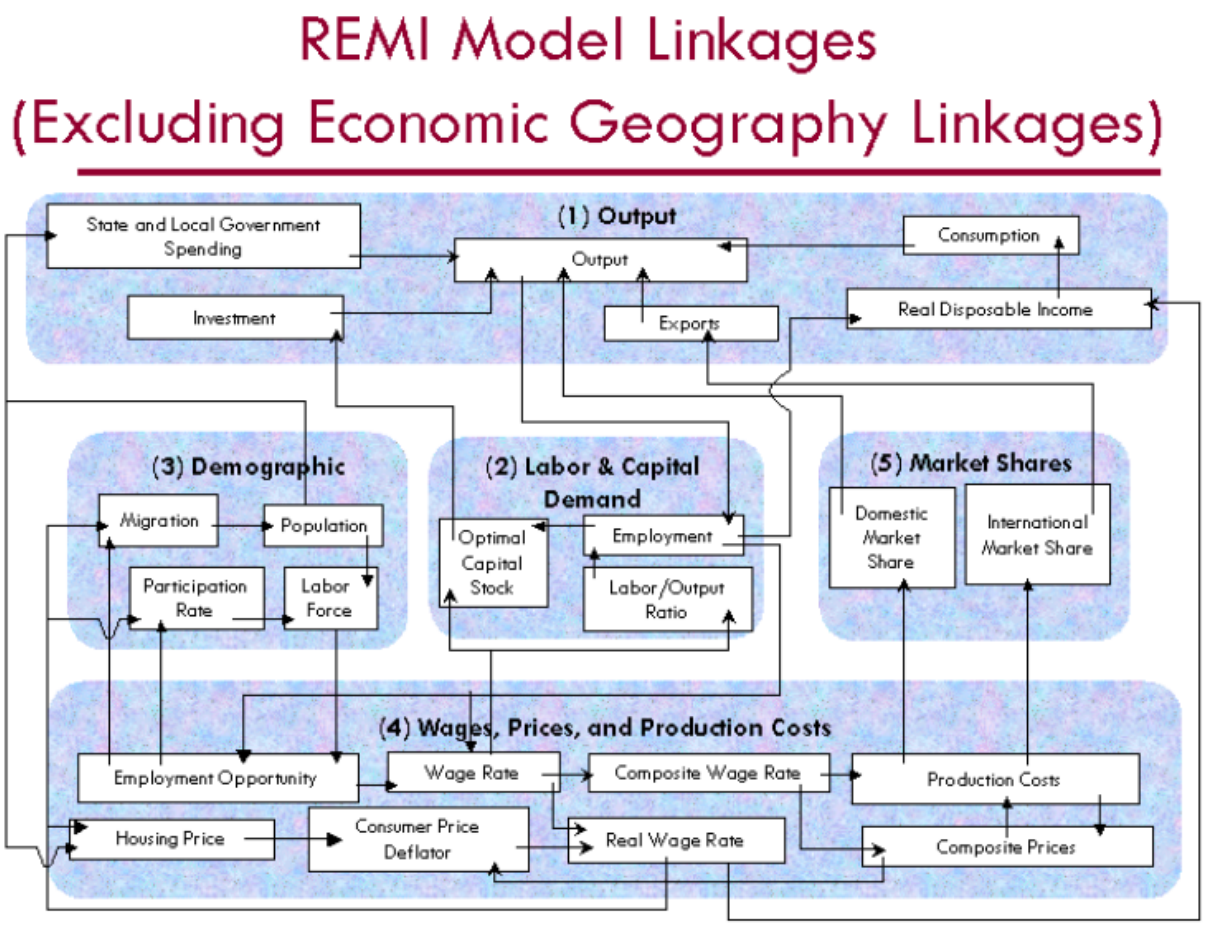
- Share of Local Market
- Share of External Market

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)
(1) Output
State and Local Government Spending
Output
Consumption
Investment
Exports
Real Disposable Income
(3) Demographic
Migration
Population
Participation Rate
Labor Force
(2) Labor & Capital Demand
Optimal Capital Stock
Employment
Labor/Output Ratio
(5) Market Shares
Domestic Market Share
International Market Share
(4) Wages, Prices, and Production Costs
Employment Opportunity
Wage Rate
Composite Wage Rate
Production Costs
Housing Price
Consumer Price Deflator
Real Wage Rate
Composite Prices