Staff Briefing

Connecticut's Economic Competitiveness in Selected Areas

October 6, 2009

Legislative Program Review
& Investigations Committee

CONNECTICUT GENERAL ASSEMBLY

Introduction

Study Overview

The committee undertook this study in May 2009 to examine Connecticut's laws and policies and determine if they help or hinder the state's economic position both globally and with its surrounding states. The study includes both a broad and narrow focus. The broad focus examines what the state's economic development strategy has been over time, including review of Connecticut's industry cluster strategy. The narrower focus of the study examines laws and tax policies in the retail sales area in relation to surrounding states.

When the committee voted on this study topic the nation was in a deepening recession, and the committee wanted to ensure Connecticut was well positioned to recover when the recession ended. Connecticut's current unemployment rate is below the national average, indicating it is weathering the recession better than many states. However, even prior to the recession, state policymakers have been concerned with the economic trends occurring in Connecticut – little to no job growth and out-migration of residents. In addition, Connecticut is perceived as a high-cost state for doing business, making competition in the global economy that much more challenging.

In this new era it is important to recognize that the state's competitors have changed. No longer is Connecticut competing with just its surrounding states or New England. Connecticut is also competing with states in all regions of the country and around the globe. Strategies that may have worked in previous economic times, when competition was more local, may not be the right tools for ensuring the state is competitive now. The economic development model for the 21st century is often referred to as the New Innovation Economy or Knowledge Economy.

This model places less emphasis on providing loans and grants to single firms to aid in relocation or to remain in the state. Instead this model focuses on state policies and investments that promote technological innovation, spur entrepreneurship, and support research and development. The key to implementing this new model is to identify the strengths that the state already possesses, and protect and enhance them. In Connecticut, those assets include its: highly productive and educated workforce; prime location; good quality of life; and world class higher education institutions.

This report discusses in theoretical terms how the new economic model can be implemented in Connecticut and provides a synopsis of the best practices to promote and grow an innovative economy. In addition this report cites several studies commissioned by the legislature and others that have also recognized the need for a different economic development paradigm that focuses more broadly on what Connecticut's core competencies are to better compete in the New Economy. However, many of the proposals from the reports, even if enacted into legislation, have not been fully implemented for one reason or another, mostly because of lack of funding.

Equally crucial to producing positive results is collaboration and working toward a common goal. All stakeholders – policymakers, state agencies and their economic development partners, including businesses, and universities -- need to agree on and support the policies, strategies and investments needed to capitalize on the state's assets. Attention to maintaining and improving the state's assets must be constant and will require sustained efforts. Achieving economic prosperity is a long-term goal, and success of strategies cannot be measured by short-term results.

Research Methods

The program review committee staff relied on many sources in developing the briefing report. In addition to state statutes and budget documents, staff reviewed reports and studies produced by a variety of both federal and state government agencies, and national and state nonprofit policy organizations. Many interviews were held with staff from state agencies, nonprofits, businesses, and trade organizations across the state. Staff also attended several trade shows and spoke with local businesses from across the state.

During the course of the summer, committee staff met with the following organizations:

- State Agencies: Department of Economic and Community Development; Department of Labor; Office of Workforce Competitiveness
- Quasi-Publics: Connecticut Innovations Inc.; Connecticut Development Authority
- Connecticut Economic Resource Center
- Connecticut Center for Advanced Technology (CCAT)
- Metro Hartford Alliance
- Southeastern Connecticut Enterprise Region (SeCTer)
- Business Council of Fairfield County
- Industry cluster organizations: Aerospace Components Manufacturers; Connecticut United for Research Excellence (CURE); Insurance and Financial Services; Connecticut Maritime Coalition; and Connecticut Technology Council (CTC)
- Biomedical Engineering Alliance & Consortium (BEACON)
- Connecticut Economic Development Association
- Connecticut State Technology Extension Program (CONNSTEP)
- Connecticut Ventures Group
- Connecticut Business and Industry Association (CBIA)
- UConn Technology Incubation Program (TIP)
- Service Corp of Retired Executives (SCORE)
- Federal Small Business Administration
- Connecticut Small Business Innovative Research (SBIR) office
- U.S. Department of Commerce Export Assistance Center

- Hedge Fund Association
- Northeast Utilities economic development department

Report Organization

The briefing report contains five sections. In developing the report, staff used a variation of the Results Based Accountability approach to assessing the state's economic competitiveness through discussion of the following questions in each of the first four sections:

- "How Should We Do It?"
- "What Has Connecticut Done?"
- "How Much Has Connecticut Done?"
- "How Well Are We Doing?"

The first section reviews more traditional models of economic development and examines the 21st century economic development model for the New Economy including what Connecticut should be doing to compete in the New Economy. Section II describes what the state's major economic development policies, strategies, and programs are, how they are implemented, and whether they focus on fostering an innovative and technology-based economy.

The third section, in examining "how much" Connecticut is doing, discusses the resources aimed at improving the state's economic competitiveness, including incentives that support businesses through direct loans, and state and federal loan guarantees. Also included is an analysis of tax credits and exemptions that target businesses in Connecticut.

In Section IV, to address "how well are we doing", an innovation index is presented that measures Connecticut's capacity to compete in the New Economy. The index uses a series of quantifiable benchmarks that other states have developed in considering what features are important to this innovative economy. Also important, but not measured in the index, is the regulatory and cultural environment of the state and its agencies. Businesses – whether start-ups or large, traditional companies – must be perceived as valued and necessary assets to the state's economy. State government agencies should work together to ensure the regulatory structure is balanced, responsive, and that assistance is provided in navigating the processes.

The final report will address more comprehensively how well the state is doing by comparing the state's current strategies with those recommended as "best practices" by national organizations like the National Governors Association and others. The final report will also address more comprehensively whether and how the recently issued state economic strategic plan recognizes and calls for action on "best practices" and other strategies that might improve our competitiveness.

Finally Section V looks at the narrower scope topic concerning Connecticut's competitiveness with its border states, as it relates to policies that affect retail sales.

Section I

Economic Development: How to do it in the New Economy?

In the global economy, the United States faces new economic challenges and the competition has changed. No longer do individual states or regions compete with just each other for economic growth. In Connecticut, the challenge is not only to stay competitive within New England or with other states, but now Connecticut must be competitive throughout the world.

The more traditional approaches to economic development -- involving large employers and limited geographic competition –focus on attracting branch-plant production facilities or large service operations through tax incentives to relocate or to build a facility within a state. However, the industrial landscape has changed with many labor-intensive jobs moving overseas. Since Connecticut is a high-cost place to do business, the state cannot compete globally on a low-cost strategy. Instead Connecticut must focus on doing business in areas where it already excels -- in particular, with a highly educated and highly productive workforce, this means competing for knowledge-based jobs (i.e., innovative, entrepreneurial, and high-tech jobs).

The New Innovation Economy

In requesting this study in early 2009, the committee was interested in ensuring Connecticut is well-positioned to compete economically when the recession is over. Being well-positioned means that the state's economy needs to be firmly grounded in what is now termed the "New Economy." This "New Economy" is one that is global, entrepreneurial, technology-focused, and knowledge-based. With recent advances in telecommunication technologies along with the global shift toward open, market-based economies that support free trade, the critical factor for economic success is innovation.

A new type of benchmarking is needed that assesses the state's economic success in terms of its innovative strength. A 2005 report issued by the national organization, The Council on Competitiveness[1], indicated that approximately 50 percent of the U.S. annual gross domestic product growth is attributed to innovation, and other studies have demonstrated that states with a greater share of employment in knowledge-based industries have higher incomes.[2]

Assessing the state's success in innovation requires measuring the state's economy based on a set of variables or benchmarks that together create an index to gauge its stability and growth. An index focuses less on the direct incentives, assistance packages that might attract branch-plant production facilities, and more on incentives that grow entrepreneurial and innovation-based firms. Offering financial incentives to create or retain jobs might provide short-term aid, but it is unlikely to have as much long-term impact on the economy of a state or region as strategies that focus on creating an environment for job creation to occur more naturally.

[1] "Measuring Regional Innovation: A guidebook for conducting regional innovation assessments," Council on Competitiveness, August 2005.

[2] Donald Grimes and Lou Glazer, "A New Path to Prosperity? Manufacturing and Knowledge-Based Industries as Drivers of Economic Growth," (Ann Arbor, Mich.: Michigan Future Inc. and University of Michigan, 2004).

It is well known that small businesses create most of the nation's new jobs, and that trend is likely to continue. According to the 2009 Report to the President on the Small Business Economy,[3] fast-growing, high-impact firms that are technology-based account for almost all of the nation's growth in private sector employment. A new model for economic development has emerged within the last decade that recognizes that innovation and entrepreneurship are fundamental to success in the New Economy. To implement this "innovation economics" development model requires policies that focus more on promoting technological innovation, supporting higher-level workforce skills, spurring entrepreneurship, supporting knowledge networks, lowering the costs of doing business, and enhancing quality of life.

State Economic Development Models

Table I-1 summarizes different economic development strategies, including their approach and focus on growth. The older strategies focus on incentive-based strategies and recruitment of out-of-state firms for stimulating growth. However, in innovation economics the focus is on creating companies from within the state and harnessing the existing talent, innovation, and entrepreneurial spirit of the state, requiring less focus on traditional infrastructure and more on nurturing ideas and talent. Ideas do not need to be attracted from another state; each state can discover its own.

The first model in the table, "conventional economic development," developed largely after World War II, focuses on providing large multi-state firms with low-cost deals through tax breaks, loans, and grants. States largely view each other as the main competitors for attracting and retaining businesses and therefore economic development focuses mainly on creating the best incentive packages.

The second model, labeled the "neo-classical business climate," contends that government is unable to pick winners, and thus does not favor firm-specific subsidies. Instead, the promoters of the doctrine believe the best way to grow the state's economy is through a competitive tax code with low rates and few distortions and a manageable regulatory system – supporting a good overall business climate.

The third model views the source of state growth as not through capital investments but through worker incomes. The Neo-Keynesian Populism model focuses primarily on helping state residents, including workers. This model focuses less on business climate or competitiveness and more on policies that make the state tax code more progressive, expanding unemployment insurance, and funding affordable housing. Policies to promote economic development tend to focus on expanding human capital, investing in infrastructure like high-speed rail, and limiting corporate tax incentives.

The fourth, and most recent economic development model, "innovation economics," focuses less on issues like taxation and the regulatory environment and more on policies that promote innovation through a positive business environment. It is recognized that a low-cost environment alone will not drive innovation because low costs often come at the expense of public investments such as research universities, infrastructure, and worker skills that provide the

[3] "The Small Business Economy, A Report to the President," Federal Small Business Administration, 2009.

inputs for many innovative firms. In this model, economic development focuses on promoting technological innovation, supporting a skilled workforce, spurring entrepreneurship, supporting industry clusters, and knowledge networks.

This model seeks to lower business costs, but in ways that at the same time boost quality of life. For example, developing a better transportation system, including public transportation or encouraging telecommuting, may lower costs for businesses and decrease commuting time for workers, thereby increasing productivity and improving quality of life.

Table I-1: Economic Development Models & State Economic Development Policies

	Conventional Economic Development	**Neo-Classical Business Climate**	**Neo-Keynesian Populist**	**Innovation Economics**
Source of Growth:	Capital Investment	Capital Investment	Worker Incomes	Innovation and organizational learning
Principal Economic Development Means:	Drive down costs through firm-specific subsidies	Drive down costs through lower taxes and reduced regulations	Drive up wages and benefits, and foster more progressive taxes and public spending	Spur firm innovation through targeted support (e.g., research, financing, skills, etc.) and incentives for firms to produce these themselves
Object of Policy:	Recruitment of out-of-state firms	Recruitment of out-of-state firms	Small business and socially-conscious business	High-growth entrepreneurs and existing firms
Quality of Life:	Minor importance	Not important	High importance	Moderately important to attract and retain knowledge workers
Goal:	Get big	Get big	Get fair	Get more prosperous

Source: 2008 State New Economy Index, Kauffman Foundation, November 2008.

State strategy. Building an innovative-based economy does not mean the state should abandon what it has in place, or search for an economic silver bullet. Rather, to promote growth, states should develop a three-step overarching strategy that:

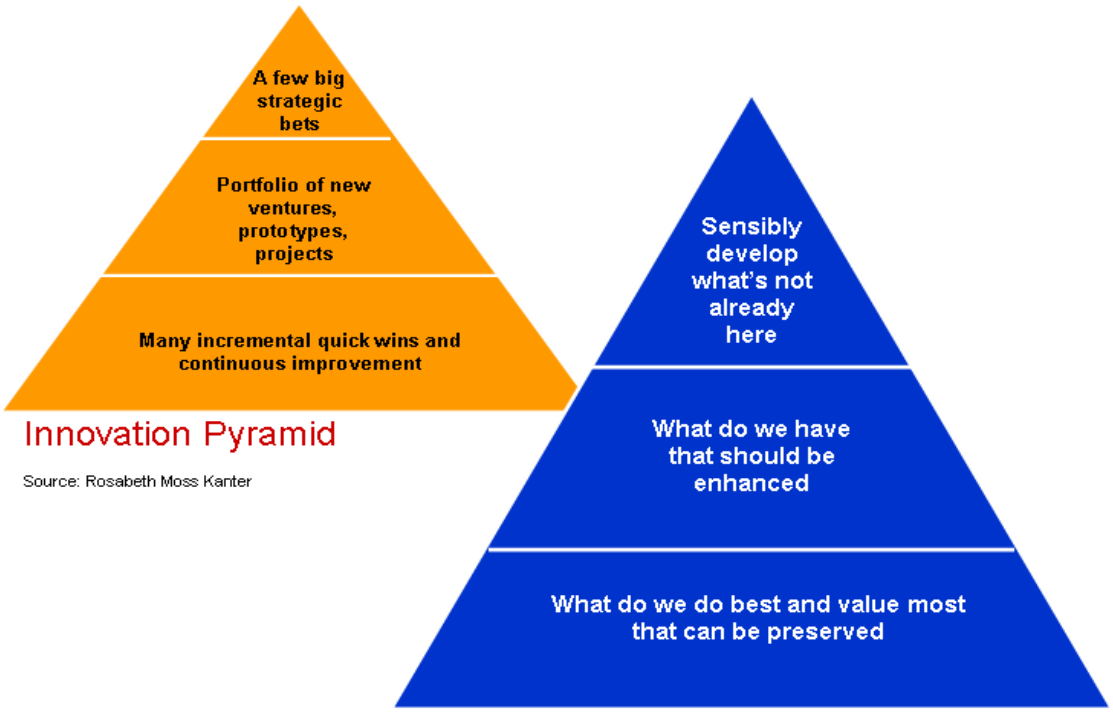
1. focuses on preserving the assets the state already has;
2. considers what should be enhanced; and
3. targets components that can be sensibly developed in the state that are not already there.

Figure I-1 was presented in a report by the National Governor's Association entitled "Investing in Innovation[4]." The innovation pyramid on the left was a concept developed for businesses to help companies prioritize and balance their investments. The concept can be applied similarly to a state's economic investments, and the pyramid on the right in Figure I-1 demonstrates how a state can prioritize and balance research and development investments. The pyramid concept illustrates the three-part strategy outlined above that a state should use to focus investments to promote economic growth. The most resources should be directed to the bottom

[4] "Investing in Innovation," National Governor's Association, 2007.

or base of the pyramid – the foundation of the state's economy -- and as more resources become available channel them up to enhance or add to current policies or strategies.

Figure I-1: Investment Pyramid



Investing in innovation does not rely on a single success story or "win" that seals a state's economic future. Instead, it requires a sustained effort that cannot be done in isolation, and cannot depend on any one agency or funding source. It requires that universities, industry, and Connecticut's government collaborate to shape policies, focus resources, and make investments that capitalize on the state's strengths which include: a dynamic workforce, prime location, good quality of life, and educational excellence.

Investing in the innovation economy requires more than just identifying assets. It is crucial that these features that make the state competitive constantly be monitored and enhanced; if ignored, other states and regions gain a competitive edge. Also of importance is that these identified assets should not only be used as a marketing tool to promote Connecticut to businesses looking to relocate; in fact, that should be a secondary objective. The primary objective of state policymakers, state agencies, and their economic development partners should be to continually assess and adjust the competitive features to meet the needs of the state's current industry clusters. Connecticut is a high-cost state, and that puts businesses here at a competitive disadvantage. Given that, it is essential that the overall strategy developed first protect the features that are the state's competitive fabric and invest to preserve them.

Collaboration is the key for success in the New Economy. State and regional strategies should build, protect, and promote a collaborative policy environment. Although technology has enabled people and businesses to connect and communicate more easily, innovation requires close personal interactions at every stage of development. Applying knowledge to the workplace occurs faster when industry and universities maintain a close working relationship; therefore, it is important to create a sophisticated academic-to-commerce network. Developing strong industry clusters is also key to this innovation-building, because close proximity to suppliers and customers promotes faster responses in a rapidly changing marketplace.

It is important that state policymakers, as well as agency staff charged with implementing economic development policy and programs, listen to business about what their needs are to stay competitive in Connecticut. It is also essential that the state's full economic potential -- its businesses, higher education, research and medical facilities, and transportation systems -- be addressed and promoted. State efforts should focus on investing in industry-university collaboration, building cross-disciplinary centers, and encouraging cooperation between multiple universities.

In a geographically small state like Connecticut there should be few physical barriers to forming such collaborations. But collaboration depends on more than geographic proximity and technological capacity for communication. Also needed are cooperation and a sense that all the parties are working for the same goal -- to strengthen the economy of the state and the region, and increase the prosperity of its residents. Agencies and staff should not be looking to compete with each other for an individual "win" or to lay sole claim to a success story. Instead, state agencies and their partners should have a sense of common purpose and a team approach that results in many economic successes for the state and the region.

Figure I-1 above illustrates an overall strategy for guiding policy and investments. Table I-2 below provides a series of best practices (i.e., key indicators) identified and compiled by program review staff from various sources. Together, the broad guide for investment strategy and the list of specific actions a state should take provide a roadmap to enhancing a state's competitiveness for a knowledge-based, innovative economy. This briefing report discusses what Connecticut has done, how much it has done, along with an assessment of how prepared the state is for the New Economy. The final report will provide a more thorough assessment of whether Connecticut has adopted these strategies and best practices, or intends to, as part of the state's economic strategic plan.

Table I-2: Best Practices /Key Indicators To Promote and Grow Economy

Accelerate Innovation

- Understand state's economic assets
- Align policies with strengths and assets
- Make strategic investments especially in human capital, research and development, and infrastructure
- Communicate the importance of innovation in a state's economic development
- Identify "clusters of innovation" and track and report performance

Develop a Comprehensive Innovation Policy

- Recognize that a knowledge/innovation economy involves more than one agency -- education, higher education, and economic development all play a role
- Ensure that K-12 education system meets high standards in science, technology, engineering, and mathematics
- Align post-secondary education to support the economy
- Implement innovation-based economic policies
- Invest in innovation and promote the transfer of research and development from education institutions to commercialization

Streamline Regulations

- Ensure that state regulatory policy is flexible and responsive
- Ensure that regulatory process is timely and not administratively burdensome
- Provide guidance and assistance to small business and start-up companies

Create a coherent, market-driven trade and international development system

- Recognize the global economy offers opportunities for growth and promote exporting as part of economic development mission
- Focus on exporting competitiveness, market share, and strategic position, not just export numbers
- Leverage state investments and resources with those of federal, private, nonprofit, and regional organizations
- Develop strategies that assist industries (and cluster associations), identify potential markets abroad, as well as promote the state as a location for business or education
- Create and foster relationships between exporters and potential exporters, banking, and other organizations that might offer assistance
- Identify obstacles to exporting and work to resolve
- Recognize that governor can serve a crucial role as advocate of international development and chief economic ambassador of the state

Convene Leaders from Various Sectors

- Bring key organizations (e.g., business, education) together with policymakers
- Appoint liaisons to work with clusters to understand economic challenges and opportunities

Improve Access to Seed and Venture Capital

- Provide tax credits or other measures that stimulate "angel" investments
- Work with other states in region to develop a large investment fund that serves a region

Sources: PRI staff synopsis of reports issued By National Governors' Association: Innovation America –Cluster-Based Strategies for Growing State Economies; Innovation America- A Final Report; and A Governor's Guide To Trade and Global Competitiveness

Section II

What has Connecticut done?

The first section outlined the features of the various economic development models that states have used over the years to spur economic activity in an area. The recent literature on economic development rejects the more traditional policies that use capital investment to target financing through subsidies to specific firms to either locate or remain in a state. Instead, the newer economic development model focuses on the knowledge-based, innovative economy and suggests that a state should gear its policies and financial investments to providing facilities and capital for research activity, education, and skill development that support technology and entrepreneurship, thereby creating a dynamic environment that fosters these innovative enterprises.

This section describes what the state's major economic development policies, strategies, and programs are, how they are implemented, and whether they focus on fostering an innovative and technology-based economy. The state's primary economic development agency is the Department of Economic and Community Development (DECD). However, through the years, the department has been consolidated with other agencies, like the prior Departments of Housing and Community Affairs. Thus, while DECD's mission includes advancing economic prosperity for the state, the agency is also responsible for housing and community development as well.

Economic Development Policy and Planning

DECD is charged with developing and implementing plans and policies that help create economic opportunities for businesses and residents of Connecticut. The department's Office of Strategy and Policy (OSP) is its lead office for policy development, strategic planning, the development and implementation of strategic competitiveness initiatives, agency and programmatic performance measurement, and comprehensive research services. Competitiveness concerns include technology-based economic development, workforce development, and energy and industry sector development. DECD's FY 08 annual report indicates that to help industries compete in a global economy, the OSP works with industry stakeholders within established and/or emerging industry clusters to identify ways to sustain output and job growth.

However, until September 2009, Connecticut had not developed an overall plan for the state's economy. The legislature required the development of such a plan in 2007 as part of legislation regarding responsible growth. The statutes requiring a state economic strategic plan (C.G.S., Sec. 32-1o) specifies what areas the plan should cover, and how the planning process should occur, including that DECD hold regional forums to gain public input. DECD did hold the regional forums, but program review staff was told in interviews for this study that the department did not collaborate with other economic development partners, such as chambers of commerce, business associations, or industry groups in formulating the plan.

DECD was required to submit the plan to the governor by July 1, 2009, who then had 60 days to review it. According to the statute, the plan would be deemed approved after the 60 days

unless disapproved. The plan, which was released by the governor on September 16, 2009, is more than 500 pages and is far-reaching in its scope.

It establishes overarching goals for the state, and sets forth:

- 22 strategies to build and strengthen Connecticut's talent and technology;
- 19 initiatives to cultivate the state's competitiveness; and
- 25 recommendations that fall under the broad category of responsible growth – including development considered transit-oriented and sustainable.

Because this document was just recently released, committee staff has not had an opportunity to fully review and assess the details in the plan. It is apparent, however, that many of the proposals will require legislation and/or funding to implement. Many of the initiatives in the plan are long-term and developed in a strong economy; it is unclear whether their implementation will be severely limited by the current recession.

COMPETITIVENESS INITIATIVES

What makes a state competitive is the subject of much debate. The state's newly released economic strategic plan is the most recent overall effort to address Connecticut's competitiveness. But concern over the state's competitiveness is not new, and probably began in the early 1990s, when the state was in the midst of a severe economic downturn. In 1993, Connecticut established a Progress Council to assess the state's performance in a great number of areas, including the economy. However, with a change in administration in 1995, the progress council became defunct. Also in 1993, the legislature mandated that the Economic Conference Board, along with DECD and the University of Connecticut, create a Connecticut competitiveness index. The index was supposed to be an annual assessment of state policies that encouraged or discouraged economic development and a computer-based economic modeling system was to be used to produce the index scores. While the index was published once, the conference board too is now defunct, and the required state competitiveness index has not been issued since 1994.

Cluster Strategy

Probably the most publicized strategy to improve the state's economic competitiveness has been the industry cluster initiative. The cluster concept is defined generally as *a group of industries that create products and services related to a common technology, market, or need in a given geographic area.* The industry cluster concept was given broad recognition in the 1990s by Dr. Michael Porter, a Harvard Business School professor. A number of states, regions, and countries have implemented industry cluster initiatives. The industry cluster strategy is based on the recognition that more traditional economic development efforts, like capital investments in single companies, are more reactive than proactive, and may not be sufficient or timely enough to impact or strengthen a region's or state's ability to compete globally.

Experience has shown that identifying key industry clusters and supporting them is a powerful strategy for improving the competitiveness of similar businesses within the cluster area. The objective is to have the clusters grow and be better able to compete, especially in the global economy, resulting in economic prosperity for the region and its residents. For clusters to thrive, business leaders in the particular industry must cooperate in identifying problems and generating solutions, but they also need support from government, academia, and regional and local economic development agencies in order to overcome obstacles and achieve common goals.

Connecticut's advancement of the industry cluster concept began in 1996, when the legislature passed P.A. 96-252, which required the state to pursue industry cluster creation as an economic development strategy for the state. In 1997, a task force made up of various business leaders was formed by former Governor Rowland to: 1) develop specific recommendations to improve the ability of Connecticut companies to compete in a global marketplace; and 2) determine whether a high-powered industry cluster initiative should be launched in Connecticut. The task force issued a report in 1998 entitled *Partnership for Growth* that laid several broad recommendation areas, including:

- establish a governor's council on economic competitiveness – to advise on policy matters relating to the development of industry clusters, the responsiveness of government agencies to the concept implementation, and reducing any continuing impediments to competitiveness in Connecticut;

- create industry clusters that are formalized and supported with seed-funding until they become self-sufficient and operational;

- create a specific biotechnology cluster that would be supported through new laboratory and incubator space, with specific state funding for that purpose;

- focus on workforce development, with an emphasis on responding to the "demand" side of the skills and education needed in the workforce rather than a "supply" education system, and especially focused on cluster needs in general and on manufacturing (e.g., precision manufacturing);

- create a manufacturing resource center to assist small and medium manufacturers with updating their processes and providing technical assistance to improve their productivity and competitiveness;

- develop the state's transportation system, including more aggressive promotion of Bradley International Airport;

- improve the state regulatory environment to emphasize competitive business growth and retention, that offers assistance with business compliance, especially targeting industry cluster areas;

- focus capital and incentive programs on small- and medium-sized companies, specifically expanding tax credits so that smaller companies might also be eligible;

- focus strategies like capital investment, and educational and workforce development , that promote urban areas as vibrant locations to start and/or expand a business in Connecticut;

- develop a marketing plan that promotes Connecticut's strengths as a place to conduct business and create a high-level response team of state personnel with authority to respond quickly and effectively to potential and existing businesses interested in locating or expanding here; and

- track Connecticut's progress in achieving competitiveness and creating economic opportunity for both businesses and residents in the state.

After that report was issued, several clusters were developed with early seed money and other support from the Department of Economic and Community Development. The clusters created and year of activation are listed below. As noted below, the bioscience (pharmaceutical) cluster was active even before the concept was developed as a state strategy. While health care was envisioned early on as an industry cluster, it has not become active.

- aerospace components manufacturing (1999)
- agriculture (2002)
- bioscience – CT United for Research Excellence (CURE) (1990)
- insurance and financial services (2002)
- maritime (2000)
- metal manufacturing (2002)
- plastics and plastic manufacturing (2001)
- software and information technology (1999)
- tourism (1999)

In 2004, the Governor's Competitiveness Council issued a second report, *Partnership for Growth II, A Competitiveness Agenda for Connecticut* on the industry cluster initiative that highlighted five areas where Connecticut should focus its efforts. Many of the areas were reinforcing the conclusions of the first report. Below is a synopsis of the recommendation categories:

- increase the competitiveness of the state's small- and medium-sized manufacturers, especially through rapid adjustment to marketplace changes;

- capitalize on Connecticut's technology and innovation assets so as to create more jobs and economic opportunity in this growth area;

- expand business growth in Connecticut cities by offering additional capital for business growth in cities, accelerating inner-city entrepreneurship, and changing perceptions about opportunities for businesses in cities;

- strengthen the state's economic foundations that cut across all industry cluster areas (e.g., a highly skilled, educated workforce, high quality of life, and geographic location) and improve others like advanced transportation and communication infrastructure; and

- build on the private-public collaboration and commitment that are crucial to the implementation and success of cluster-based economic development.

DECD role. In the earlier years of the cluster initiative DECD appeared to take an active role in implementing the strategy, working with the Governor's Competitiveness Council on individual cluster development, marketing, communication, and education, as well as workforce development, contract management, and project monitoring. In 2005 DECD realigned a number of functions into the Office of Strategic Competitiveness to heighten the emphasis on a "high performing" economy that included clusters.

Also in 2005, DECD and the competitiveness council developed the *Next Generation Competitiveness Strategy*, which set five priorities to drive the economic development of the state's industry clusters and the overall economy. Those five priorities were:

1. assist Connecticut manufacturers in increasing productivity;

2. market the state and its key industries to a wider national and international audience;

3. implement training initiatives to further strengthen Connecticut's highly skilled workforce;

4. capitalize on the research and development, as well as the economic development, potential of the state's universities and colleges; and

5. pursue an aggressive international export initiative to increase the market share of Connecticut industries across the globe.

To help with implementation with the fourth priority, the competitiveness council created the Technology Transfer and Commercialization Advisory Board to examine best practices in this field. A consultant, Innovation Associates, Inc. was hired, and many of the resulting recommendations were enacted in Public Act 05-165 (see Table II-2).

Throughout 2005 and 2006, DECD and the competitiveness council established several working groups that cut across the industry clusters – like international business development,

transportation, energy, and taxes. The Connecticut Economic Resource Center (CERC)[9] was hired to assist with strategic planning sessions to enhance markets for existing clusters and help identify new ones, and a public relations firm was also retained to better promote the ongoing activities of the cluster initiative. Further, DECD's FY 06 annual report listed six distinct tasks the department planned to undertake related to the cluster strategy, including the feasibility of creating up to three new industry clusters.

In FY 07, the department's annual report indicated continued active DECD involvement in the cluster initiative, including assessing the feasibility of three potential emerging cluster areas: 1) creative industries (e.g., film-making) 2) homeland security, and 3) hydrogen fuel cell technology. DECD also claimed an active role in cross-cutting issues like the creation of an industry business development initiative to help small- and medium-sized businesses (i.e., 500 or fewer employees) expand their business to international markets, and the development and implementation of a plan to enhance productivity. That productivity enhancement plan included: conducting a survey; reaching out to business on the enhancement concept; and creating a manufacturing center of excellence that would manage, maintain, and make accessible relevant information on methodologies for increasing productivity.

However, since FY 07, DECD support around industry clusters has diminished. First, the Office of Strategic Competitiveness has been renamed and is now the Office of Strategy and Policy. While the office maintains responsibility for competitiveness issues, overall policy and strategy development are a higher priority. Further, the activities surrounding the industry cluster initiative currently appear limited to the provision and/or monitoring of grants to individual clusters. No department activities around the cross-cutting issues affecting all industry clusters were undertaken during FY 08, and the recently released economic strategic plan makes no mention of the industry cluster initiative as one to be pursued to cultivate competitiveness.

Exploration of newer clusters that might be more relevant to the state's economy appears to have stalled. Financial assistance was provided to the Connecticut Center for Advanced Technology (CCAT),[10] to support the emerging hydrogen fuel cell cluster, and the tax credits for film production have been implemented (to date, not by DECD); however, it is unclear whether there will be other efforts to encourage the film production area to attain industry cluster status.

Another factor that may negatively impact the success of the industry cluster is the recent elimination of the Governor's Council on Competitiveness. In February 2009, the council was one of several boards and commissions terminated by Governor Rell through Executive Order 24. With the council's termination, no external entity exists to assess whether prior cluster strategy recommendations have been implemented, whether they improve competitiveness, how the overall industry cluster initiative is working, or the resulting economic impact in the state. The council's elimination also raises concerns that there is no longer a body to carry out the responsibilities deemed necessary when the council was created in 1998 – to ensure state

[9] CERC is a nonprofit corporation that provides research, marketing, and economic development services to policymakers and others. Financial support is mainly from utility companies; it also receives some state funding.
[10] CCAT is a nonprofit economic development corporation, funded primarily with federal dollars, whose mission is to improve competitiveness to Connecticut businesses (especially aerospace) through increasing efficiencies, workforce development, and use of technology.

agencies are responsive to implementing the cluster strategy and that any impediments to competitiveness are addressed.

Without outside accountability, the industry cluster initiative may suffer in a number of ways. State agencies may place decreasing priority on industry clusters as a competitive strategy for Connecticut. There will be no entity that comprises the agencies, higher education institutions, and business groups that experience has found critical to make clusters work.

Since geographic intensity of an industry is primary in cluster formation and growth, it is important that policies and strategies that promote the clusters' vitality be pursued beyond state borders, when necessary. Such regional approaches will require the effort of both industry cluster representatives as well as state agencies to work collaboratively with counterparts in surrounding states. While outside groups must be involved, the industry cluster strategy needs state sanction and support to thrive and succeed; without that, the groups become little more than trade organizations.

Cluster status. Table II-1 below contains a listing of the industry clusters, including a snapshot of the economic profile of each industry -- number of industry employees and employers in the state, the average wage in the industry for 2005 and 2008, the cluster's current status, and recent state support, if any. Not included are the Tourism and Agriculture cluster areas, which are excluded from this scope of study.

As table indicates, only three of the nine clusters had positive economic trends for all three indicators from 2005 to 2008, therefore prior to the impact of the current recession. The aerospace, technology, and insurance and financial services clusters each saw an improvement in the numbers of employers, employees as well as wages. Two of the clusters – bioscience and maritime -- had positive trends in two of the three indicators, and all saw wages increase (in current dollars).

Table II-1: Connecticut Industry Clusters			
Industry Cluster Area	**Industry Presence in CT**	**Status**	**State support 2007-2008**
Aerospace Components Manufacturers	2005: Employment – 30,229 Employers – 153 Avg. Wage - $76,646 2008: Employment – 32,370 Employers – 155 Avg. Wage - $86,889	• About 60 members with 50% of manufacturing in aerospace business – supply chain (Pratt and Whitney, Sikorsky not members) • Private nonprofit, fee-based; has an executive director; focus on workforce development, LEAN mfg. Maintains website that provides an information network	2 DECD grants targeted for this cluster – • $55,000 to the competitiveness project by the cluster organization • $750,000 to aerospace defense initiative through CT Center for Advance Technology CONNSTEP assistance to members through combined federal and state grant
Bioscience	2005: Employment – 40,177 Employers – 1,570 Avg. Wage - $66,082 2008: Employment – 39,130 Employers – 1,645 Avg. Wage - $75,096	• Cluster organization is CURE -- 120 members involved in biotechnology area including pharmaceutical, small biotech companies, hospitals, and higher education institutions • Operates Biobus program which educates teachers and students on value of biotech. Sponsors ongoing seminars in the bioscience field	DECD Office of Bioscience – one person staff; help sponsor the Bio trade show CT Stem Cell Research -- $10 million total annually to higher education research at Yale, UConn, and Wesleyan Fund to the Biobus Biofacilities Fund by CII
Plastics	2005: Employment – 7,417 Employers – 212 Avg. Wage - $48,824 2008: Employment – 6,656 Employers – 194 Avg. Wage - $54,628	Organized as nonprofit 501c(3) but does not appear to be an active industry cluster	According to DECD FY 08 annual report, DECD co-sponsored high school plastics expo with the cluster
Software & Information Technology	2005: Employment – 35,309 Employers – 3,515 Avg. Wage - $83,462 2008: Employment – 37,112 Employers – 3,668 Avg. Wage - $90,862	• Operates largely through the Connecticut Technology Council, has over 2,000 members. Fees based on size and type of membership. • Co-sponsors annual "angel" investor summit and innovation and entrepreneurial summit	DECD grant --$200,000 (bond $) for "innovation pipeline accelerator". CT Technology Council co-located with CT. Center for Advanced Technology, similar goals

Table II-1: Connecticut Industry Clusters			
Industry Cluster Area	**Industry Presence in CT**	**Status**	**State support 2007-2008**
Insurance and Financial Services	2005: Employment – 135,631 Employers – 9,954 Avg. Wage - $120,030 2008: Employment – 137,374 Employers – 10,363 Avg. Wage - $131,995	• Operates under auspices of Hartford Metro Alliance; with separate executive director. • Cluster organization has 27 members: mostly of large insurance companies and banks, and based in Hartford – does not include hedge funds, which has own separate association. • Instrumental in beginning an actuarial pilot program at University of Hartford	• DECD has one person assigned to activities associated with the industry and financial services cluster. • Joint efforts with partners obtained U.S. DOL grant in 2006 of $2.7 million over 3 years to train people in insurance industry and establish an insurance analyst associate degree program at selected community colleges. Trained 500+ people since 2006.
Maritime	2005: Employment – 11,254 Employers – 252 Avg. Wage - $73,603 2008: Employment – 10,609 Employers – 260 Avg. Wage - $86,399	20-25 members made up of small to medium shipping agents, terminal operators, large marinas and ferry operators Fee-based membership	Partial funding from DECD for a report on the industry's economic impact – due out Fall 2009
Metal Manufacturing	2005: Employment – 57,911 Employers – 2,192 Avg. Wage - $57,876 2008: Employment – 56,526 Employers – 2,108 Avg. Wage - $64,154	Still listed as an industry cluster by DECD, but organization is inactive. CT Manufacturers Assn. and CONNSTEP promote broad interests of CT manufacturing	
Source: Employment figures from CT Department of Labor (see Appendix A for NAICS codes associated with the clusters)			

Cross-Cluster Initiatives

Primarily the state supports listed in Table II-1 are provided to individual clusters either through grants or through co-sponsoring one-time events. However, the "*Next Generation Competitiveness Strategy*" of 2005 had called for more focus on across-the-board strategies that would help all the clusters, including: efforts to assist small- and medium-sized manufacturers (i.e., fewer than 500 employees) become more productive; a marketing campaign to better publicize Connecticut and its industries; and pursuit of a more aggressive exporting strategy. The following discusses efforts undertaken to meet these objectives.

Increasing productivity in manufacturing. Manufacturing is still an important segment of the state's economy. While the current recession has reduced the number of people employed in manufacturing by almost 8 percent this past year, there were approximately 173,000 people still employed in manufacturing in June 2009 -- more than 10 percent of Connecticut's public and private workforce. Manufacturing accounts for about 14 percent of the state's gross

domestic product[11], and economic impact studies have shown that manufacturing activity has a multiplier affect, creating additional jobs in the economy.

However, perhaps more than any other sector of the economy, manufacturing is susceptible to the forces of global competition. Since 1994, a national effort has been underway to retain manufacturing in this country, and to especially help small- and medium-sized manufacturers reengineer their processes and operations to better compete in a global economy. The nationwide program, known as the "manufacturing extension partnership", is administered through the National Institute of Standards and Technology of the U.S. Department of Commerce, and is operated through partnerships with each state. Funding for the operations come from federal grants, state matching funds and other support, including fees from client businesses.

In Connecticut, this partnership program is the Connecticut State Technology Extension Program, known as CONNSTEP. Each year, CONNSTEP assists about 200 different clients and completes more than 500 projects (e.g., training can be provided to more than one company). Altogether, the program reports it has assisted about half the approximately 5,000 small- to medium-sized manufacturers in the state over the years.

According to CONNSTEP, assisted clients report each year on: the number of jobs created or retained; the company's increased or retained sales; the amounts saved in cost reductions; and amounts reinvested in the business. The figures are client-reported through an independent third-party auditor of the nationwide program. The FY 09 reported figures for Connecticut indicate:

- approximately 180 clients were served;
- 1,138 jobs were created or retained;
- $323 million in increased or retained sales;
- $11 million in cost reductions; and
- $24 million in company reinvestments.

This model appears to work well for a number of reasons. These companies are already in the state, with no financial reward for relocation. The assistance provided to companies is more consultative than monetary, and there is already a demonstrated commitment on the part of the businesses in seeking the assistance that they intend to continue operations. A participating company is willing to risk the capital and time in applying technology and modern management methodologies to its operations to increase productivity and better compete. Further, unlike businesses seeking outright financial assistance, a company seeking consultative assistance may be more financially stable with adequate time to make the production changes to continue as a viable operation.

In interviews with program review staff, CONNSTEP personnel indicate that the cost improvements such as making manufacturing leaner and more productive have largely been made for those businesses that have participated. The current and future challenge for these

[11] State gross domestic product is an economic productivity measure. It measures the value of all the goods and services produced in a state in a year.

businesses is to increase revenues through expanding their client bases, and garnering new markets, especially abroad.

Export assistance. Exporting activity is important to the state's economy, generating over $15 billion in 2008. The top five commodities exported from Connecticut in 2008 were: 1) industrial machinery, including computers; 2) aircraft and component parts; 3) electric machinery, sound and TV equipment, and component parts; 4) optic, photo, medical, and surgical equipment; and 5) plastics.

Connecticut's biggest trade partners are:

- Canada, which accounts for about $1.8 billion (12%) of the $15 billion in 2008 exporting activity;
- France at $1.7 billion;
- Germany $1.45 billion;
- Mexico at $1 billion; and
- the United Kingdom at $876 million.

While exporting has increased significantly in recent years -- almost doubling from about $8 billion in 2003 to $15 billion in 2008 -- Connecticut still lags behind the nation in the percentage of state gross domestic product (gdp) that comes from exporting – 7 percent in Connecticut compared to 9 percent nationally. Some of this difference may be due to the fact that about 16.5 percent of the state's gdp is in the insurance and financial services sector – more than most states -- and only commodities and not services can be calculated as export contributors.

Overall, about 4,600 Connecticut companies export abroad, but it is difficult to determine how many others could. The need to expand exporting as a priority in enhancing the state's competitiveness has long been recognized. In 1994, the legislature passed P.A. 94-237, calling for DECD to establish a number of programs and initiatives including: an exporting services database; a program aimed at attracting foreign investment to the state; an export promotion program; and creation of an International Trade Council to advise and assist DECD. However, the exporting programs were all required to be established within the department's existing resources, and most were never implemented.

Export expansion was established as a state economic development priority again in 2005, as part of the *Next Generation Competitive Strategy*. However, DECD's resources for exporting efforts have been decreasing. The international trade office within DECD had been staffed with two people until June 2009, when one accepted the state's Retirement Incentive Program (RIP), leaving one person to carry out its program and functions.

Surveys of international trade in Connecticut. In 2007, DECD co-sponsored -- along with the Connecticut Business and Industry Association (CBIA) and a private accounting firm -- a survey of Connecticut businesses regarding international trade and exporting. At that time, of the 447 respondents, 35 percent were already exporting and another one-third stated they would like to be involved. The respondents indicated the greatest obstacles to global trade and

exporting were trade barriers and regulatory disparities, global competitiveness, limited resources (to embark on exporting), and a general lack of knowledge about trade abroad. The survey results also showed that many companies were unaware of the assistance that federal and state government could provide in the exporting area.

In 2009, a second survey was conducted, this time without state sponsorship. In the 2009 survey,[12] more than half of the CBIA members that responded (274 companies) stated they were involved in exporting, and 10 percent had only entered global trade in the last six months. Therefore it appears that more Connecticut companies are becoming more active in global trade. Most businesses began exporting to increase sales, especially in a recession. However, economic downturns also present challenges to small- and medium-sized businesses wishing to initiate exporting abroad including: expending capital to meet regulatory requirements; obtaining relevant exporting and importing licenses for the prospective trade country or region; and incurring additional travel expenses.

Many of the 2009 survey respondents not involved in exporting stated the greatest obstacle to international trade is lack of knowledge about export regulation, foreign markets, and potential opportunities. Even those respondents engaging in exports stated they were unaware of services that federal trade representatives provide to further business penetration abroad. Further, a persistent issue (cited in both 2007 and 2009 surveys) was that respondents had no knowledge of the state and federal government assistance to businesses wanting to get more involved in international trade. Thus, primary challenges to promoting an international trade strategy appear to be: making Connecticut companies more aware of government programs that might help with exporting activities; assuring that assistance can be provided in how to meet the regulations and certification necessary for exporting; and matching up Connecticut companies and their products and services with foreign markets.

DECD does provide information about international trade on its website. The information describes the basic assistance that can be provided by DECD, along with links to other sites that may help businesses with exporting. DECD analyzes the state's exporting data[13] to determine what the state is exporting and to where. DECD also periodically contributes information on exporting to the Connecticut Economic Digest, the joint publication of DECD and the state Department of Labor. DECD states it relies heavily on its partners (e.g., local chambers of commerce, and the Connecticut Business and Industry Association) to inform local businesses of services to help with exporting. But given the lack of business awareness the surveys indicate, DECD may need to try other forms of communication to reach the companies about how the state can assist.

DECD also provides information and services directly to businesses about foreign trade and exporting. Some of the activities cited in the department's FY 08 annual report include: quarterly roundtable meetings with German companies with offices or facilities in Connecticut; 100 outreach visits to companies interested in exporting; led a group of companies that participated in Medica trade show in Germany, the world's largest trade show for medical devices and equipment; and took a similar role at the Paris Air Show.

[12] 2009 Survey of International Trade in Connecticut, CT Business and Industry Association and J.H. Cohn, LLP.
[13] The World Institute for Strategic Economic Research (WISER) collects data on exporting in 175 countries, and all states.

DECD has formed partnerships with other government agencies, as well as public and private organizations that also provide assistance to businesses in the trade and export area. DECD is the state representative to the Eastern Trades Council (ETC), an entity that operates under the auspices of the Council of State Governments' Eastern Region Office. The ETC helps fund and organize international trade missions for businesses operating in the 10 states in the region. The ETC has led trade missions to Poland, the Czech Republic, China, Sweden, Saudi Arabia, Thailand, and Germany, and also operates a foreign office in China. The ETC is organizing a trade mission to Turkey for spring of 2010.

DECD also has a partnership with the U.S. Department of Commerce (USDOC) Export Assistance Center in Middletown. The goal of the collaborative effort is to help small- to medium-sized businesses export their products and services by matching them with foreign importers/buyers, agents, distributors, and users. The Export Assistance Center (EAC) also evaluates product markets, customizes market research, arranges overseas business meetings, and provides information on overseas tariffs and standards.

The Middletown EAC indicates it has a database of about 2,000 companies that receive frequent information about exporting assistance available and, of that, about 1,200 companies have participated in one or more of the services provided. During federal FY 08, those have included one trade mission, five trade shows abroad, and 14 different workshops, seminars, and roundtables on various exporting topics held in various locations in the state. Some of those are held with partner agencies, on occasion with DECD.

The USDOC also has federal trade representatives in most countries, a feature that because of resources, states cannot replicate. Therefore, DECD attempts to link local businesses with the services that the federal trade office (and their counterparts abroad) can provide. The federal office charges for services, depending on the size of the company, and DECD provides some financial assistance – 50 percent of fees up to $1,000 -- for participating businesses, but requests for the state partial financing have been minimal. In FY 08, DECD reimbursed less than $5,000 to companies.

Such state collaboration with the Eastern Trades Council and the federal Export Assistance Center is crucial, since the state devotes very few resources to assisting with exporting. DECD should be the link between its industry clusters that have exporting capability or potential and the services that can best be provided by the federal government, its agencies and representatives, and other partner organizations like ETC.

Other Cross-Cluster Efforts

DECD also provides broad technical assistance and other supports to business throughout the state, often through contracts or partnerships with other organizations. Some examples of the efforts are described below.

The Connecticut Business Incubator Network. The network includes seven programs that provide low-rent space, often including laboratory facilities for small start-up or "incubator" companies at 10 locations in the state, (although none is located in Fairfield County). DECD

provides funding for two of the incubator locations. The network operates a website through the Connecticut Center for Advanced Technology, and indicates that currently 84 percent of the space is rented (as of December 2008) to about 25 start-up companies; some of the locations have a waiting list.

Procurement Technology Extension Program. Administered by the Southeastern Connecticut Enterprise Region (SECTER), a regional economic development agency, this program assists businesses who wish to sell their products or services to local, state, or federal government. The program receives an annual grant from DECD, but future funding is unsure due to the state's budget crisis. According to SECTER, in 2008, the program assisted client companies secure $145 million in government contracts.

Small Business Development Centers. Located on the state university campuses, the centers provide counseling assistance, help with business plan development, and other services existing or potential small businesses might need.

Institute of Technology and Business Development. Operating at the campus of Central Connecticut State University, the institute provides technical assistance, customized training and advanced technology skill development, procurement assistance, and conference and meeting room facilities, and is one of the 10 incubator space locations.

Services Corp of Retired Executives (SCORE). This organization offers one-on-one counseling and advice provided by former business executives to entrepreneurs and others interested in starting a business. This national volunteer organization has several chapters in Connecticut, but receives no state funding. According to information SCORE provided to program review staff, over a six-month period from October 2008 and May 2009, the various state chapters held 4,892 individual counseling sessions and 106 workshops.

Connecticut Economic Resource Center. The center is a non-profit corporation that provides research, marketing, and economic development services to local, state, and regional policymakers and utility companies. CERC maintains a comprehensive database of economic and demographic information for Connecticut and Western Massachusetts along with on-line search tools available to businesses about assistance programs and details of site locations available in the region. DECD has provided some funding for CERC operations, but it mostly relies on utility company funding.

Connecticut Business Response Center. Operated by CERC, with some financial assistance from the state, the resource center operations include Smart Start and the Connecticut Licensing Information Center. Services include an "800" call- center where businesses may receive help with questions about licensing and other state requirements, and on-line linkages to state agencies and other businesses.

Marketing

DECD has also undertaken marketing efforts to promote Connecticut as a place to do business, some of which are described as follows:

- The department's website has recently been updated and offers a snapshot of "The Connecticut Advantage", listing key features of Connecticut competitiveness including its:
    - geographic location;
    - productive and skilled workforce;
    - business and tax incentives;
    - transportation network;
    - quality of life;
    - educational excellence; and
    - technology and innovation.

- In early 2009, DECD, the Governor's office, and local chambers of commerce, co-sponsored "Business Connections," a series of regional informational sessions. At the sessions, representatives of state agencies, quasi-publics entities, and other state, regional and local organizations involved in economic development met with local businesses to inform them of the services and assistance available to them.

- DECD has created and provides a folder of material to businesses that may be interested in Connecticut as a potential site to locate, and to businesses that are already in Connecticut who might want to expand.

It is unclear how successful marketing campaigns are when the targeted audience is limited. The above materials may reach only those companies that have already demonstrated an interest in locating or expanding in Connecticut. The recently released state economic strategic plan calls for the development of a "first-class economic development website with user-friendly links to all state economic development programs and tax incentives," and the creation of a state economic development marketing campaign.

Current campaign marketing materials primarily feature Connecticut as a place to locate a business. However, there is also a need (perhaps with greater potential for positive results), to provide better marketing for goods and services produced by existing Connecticut companies. This might help expand their client base nationally and globally to increase revenue, as well as demonstrate that the state wishes to protect and promote the businesses already here. Finally, features described in marketing materials may spark initial interest, but a campaign cannot just be a promotional tool. There must be follow-through on all the marketing aspects presented in order to realize economic improvements.

Innovation Policy in Connecticut

One of Connecticut's competitive advantages, as cited in several national rankings (see Appendix B) and on DECD's website, is its reputation as a center for innovation and technology. Beginning in the economic recession of the early 1990s, various task forces, study groups, and consultants have conducted assessments on a range of aspects that contribute to the state's economic competitiveness. Many reports have been issued offering a great number of proposals and recommendations, and often these have resulted in either legislative or executive branch

initiatives to improve competitiveness. However, even when legislation is passed and/or the governor begins an initiative, the implementation may never fully occur. A summary of these proposals and initiatives along with a brief synopsis of their status is provided in Table II-2.

Table II-2: Legislative Proposals and Initiatives Aimed at Innovation

Legislation/Initiative	Goal	Funding Level	Funding Source	Result
P.A. 93-382 *Technology Deployment Act*	Strengthen links between basic research and the creation and manufacturing of new products	$5 million	Bond funding	Programs were funded but unclear whether they have continued
P.A. 96-264 *Economic Recovery Act*	Commercial property with links to a major university with programs in biotechnology, pharmaceutical and photonics are entitled to same benefits as businesses in enterprise zones.	N/A	Tax credit	Due to how the data is reported to DRS, unable to determine utilization
P.A. 04-212 *An Act Concerning Workforce Development*	Requires Office of Workforce Competitiveness to establish a competitive innovation challenge grant program	N/A	Existing resources	Since no funding was provided initiative did not occur
P.A. 05-129 *An Act Establishing a Connecticut New Opportunities Fund*	Invest in seed stage and emerging growth companies	Directs CII to establish a fund not to exceed $50 million with 10-year term	Private entities with state covering losses	Program never launched because state never committed to covering the losses
Building on Connecticut's Core Competencies in the Knowledge Economy (2005 report for OWC)	Five key recommendations including: • focus investments on strategic technology areas • focus investments in 4 activities—talent generation; applied research; research enhancements, and innovation • Priority on initiatives that promote multi-institutional collaboration • Ensure matching requirements • Manage as one program		Not addressed	
P.A. 05-149 *An Act Permitting Stem Cell Research and Banning the Cloning of Human Beings*	Advance embryonic stem cell research	$100 million $20 million in first year 06-07 $10 million for each year after to 2015	$20 million from General fund; $80 million from Tobacco Settlement	3 rounds of grants awarded: FY 07: $19.8m – 21 projects FY 08: $9.84m -22 projects FY 09: $9.8m – 24 projects

Table II-2: Legislative Proposals and Initiatives Aimed at Innovation				
Legislation/Initiative	Goal	Funding Level	Funding Source	Result
P.A. 05-165 *An Act Concerning Establishment of an Innovation Network for Economic Development*	Required three economic development agencies and UConn to develop a plan and budget to create an Innovation Network focused on technology transfer. Plan should address several areas including creating links between investors and incubator companies.	Use as a catalyst $10 million from existing resources of DECD, CII, UConn, CDA, and OWC to obtain $40 million in private funding	Existing resources	DECD produced report with recommendations – formed the basis of P.A. 06-83
P.A. 05-198 *An Act Concerning the Promotion of Collaborative Research Applications with Industry*	Office of Workforce Competitiveness required to: • establish Challenge Grant awards program, • prepare recommendations to advance the state's position in nanotechnology, • and establish an Advisory Council on Nanotechnology. DECD required to recommend an implementation plan and budget to establish an Innovation Network (also in P.A. 05-165)	No funding provided	Existing resources	-Nanotechnology report issued and Advisory council created; recommendations from report enacted into legislation (P.A. 06-530) -Innovation Network report issued -Pilot of challenge grants; funding from nanotechnology fund
P.A. 06-83 *An Act Concerning Jobs for the Twenty-First Century* See Table II-3 below	Established initiatives to spur growth in the New Economy See Table II-3 below	See Table II-3 below		
A Talent-Based Strategy to Keep Connecticut Competitive in the 21st century (2007)	Resulting from governor's talent symposium series – policy proposals included: development of better STEM education; investment in innovation challenge grant program; increase early stage capital; and expand SBIR into a full service innovation and commercialization services resource center.			SBIR expanded its role from assisting with applications for grants. Now maintains database on research and technology companies. Acts as communications link and match up of companies w/tech needs and potential suppliers
Sources: Various Office of Workforce Competitiveness reports, Public Acts, OLR summaries, agency websites and interviews with agency staff.				

While all the initiatives listed above were important in addressing the state's capacity for innovation in one way or another, probably the most far-reaching was P.A. 06-83, *An Act Concerning Jobs for the Twenty-First Century*. The act established a number of programs and

proposals to spur growth for the New Economy, including components addressing economic growth, innovation, and technology-based business. However, implementation of the components has not always occurred, often because of lack of funding. Table II-3 below provides a listing of each major component of the initiative and its current status.

Table II-3: P.A. 06-83 An Act Concerning Jobs for the Twenty-First Century	
Component	**Status**
Establish an eminent faculty recruitment program at the University of Connecticut	Implementation underway -- six eminent professors hired for alternative energy programs including UConn Global Fuel Cell Center. Funding -- $4 million state funding --$2 million match from utility companies -- $3.5 million from Clean Energy Fund
Establish a Center for Entrepreneurship at the University of Connecticut	Two entrepreneurial centers - one associated with law school, law students assist new business w/patent and other legal issues – other is located at CT Center for Advanced Technology, and associated w/business school; offers assistance to business in incubator programs
Establish a program to provide venture capital to newly established or expanding businesses in the early stages of development with CII as the administrator	Funds were never allocated
Authorizes DECD to award grants to entities operating incubator facilities Connecticut has an incubation network, as discussed earlier -- this helps support two of the sites	DECD has issued grants to CT Center for Advanced Technology ($1 million annually since FY 07) for its incubation program, and to UConn at Avery Point to expand its incubator program
Requires CII to provide matching financial assistance for micro business that receive federal funds under the Phase II Small Business Innovation Research or Business Technology Transfer programs	Responsibility transferred to DECD in 2007. OWC offers $250,000 matching SBIR grants. Total amount allows funding for about four grantees
Establish the Office of Business Advocate to serve as an information clearinghouse on public and private business assistance programs	Advocate appointed but position abolished in governor's deficit mitigation plan in early 2009
Exempt all manufacturing machinery and equipment from local property taxes with a five-year phase-in, with the full exemption taking effect beginning October 1, 2011	Implemented – biotechnology companies and film production companies also exempt
Establish an "Engineering Connecticut" Loan Reimbursement Program for persons who have been awarded an undergraduate or graduate degree in engineering and are newly employed as engineers in Connecticut as of January 1, 2006	Not implemented –lack of funding
Establish a "You Belong" Loan Reimbursement Grant program for doctoral graduates who are employed in economically valuable fields	Not implemented – lack of funding
Establish a corporate tax credit for producing films and digital media in Connecticut. Credits are transferable	Implemented – Approximately $124 m total authorized thus far. DRS reports to date are claimed from insurance premium tax liability ($42.7m); reports on claimed corporate business tax credits not yet available
Three pilot grant programs run through the Department of Education – a high school Math and Science Challenge program; a high school Generation Next program; and a Future Scholars program	Generation Next and Future Scholars each received funding of $125,000; no funding for the math and science challenge program

Summary of Preliminary Findings: What We Have Done

- Industry clusters adopted as an economic development strategy because of experience that it works.

- It has been at the center of the state's economic development strategy since 1996, but it appears executive and administrative support is diminishing, and industry clusters not a strategy promoted in just-released DECD economic strategic plan.

- The cross-cluster activity was established as 2005 priority but efforts are mixed.

- The economic employment indicators (number of employers, employees, and wages) for industry clusters show wages (in current dollars) increased for all clusters, but only three had positives in all three indicators between 2005 and 2008.

- The CONNSTEP program appears to be a good model for assisting small- and medium- sized manufacturers upgrade work and management processes.

- Exporting activity has increased in Connecticut, and DECD does work with federal and regional partners, but many businesses are still unaware of exporting opportunities and services that these agencies provide.

- Many innovation and technology initiatives have been proposed, some have been implemented, while others have not. It is difficult to clearly determine implementation because of funding issues, administration of programs is not with any one agency or funding source, and in some cases administration has been transferred (e.g., SBIR).

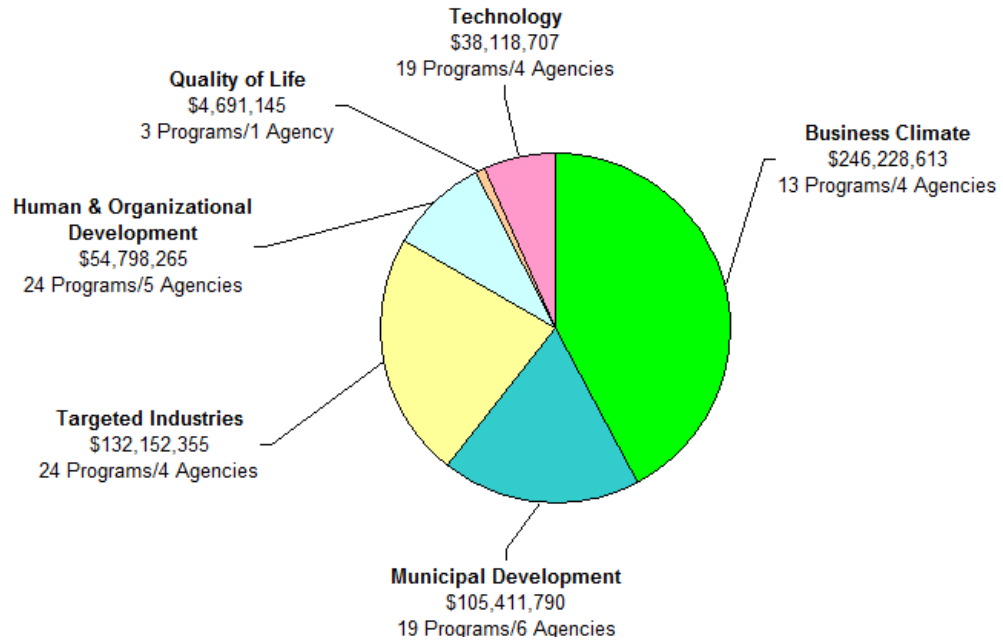
- Smaller grant programs that appear to produce results, like SBIR assistance, may be in jeopardy because of lack of state funding.

How much are we doing?

Development of a state's economy and promoting its competitiveness cannot rely on a single strategy left to one state agency or program, but rather depends on a framework of policies and programs aimed at an overall goal of state economic growth and increasing prosperity for its residents. While it is certainly beyond the scope of the study to identify all of the resources that the state dedicates to economic development, Figure III-1 below broadly illustrates the state's fiscal effort at promoting economic development by broad category. See Appendix C for a detailed list of agencies and programs.

Figure III-1: **Economic Development Programs: Average Annual Funding**

*** $581.4 Million on 102 Programs in 24 Agencies ***



Source: Office of Fiscal Analysis and Office of Legislative Research, March 2009

While some might disagree with the categories (and programs) that have been included or others that should have been included, the graph broadly depicts the state's economic development resources and how they are allocated. What the graph does not show is how economic development stacks up as a state priority with other demands on its resources. If the $581 million in economic development funding is measured as a percentage of the state's almost $17 billion dollar budget, the result is about 2.5 percent of general fund money directly targeted toward developing the state's economy and improving its economic competitiveness. Human services, on the other hand, accounts for about 28 percent of the state's budget.

This section focuses on the funding directed at businesses, primarily financial incentives provided through loans, grants and tax credits or exemptions. The incentives that support business development are largely administered by the three major economic development agencies in Connecticut -- the state Department of Economic and Community Development (DECD), and two quasi-public economic development agencies -- the Connecticut Development Authority (CDA) and Connecticut Innovations Incorporated (CII). The Department of Revenue Services, as the state's tax agency, has an indirect role through administration of business tax credits and the Office of Policy and Management has some responsibility especially in the area of reimbursement to the towns for some of the tax exemptions. Not included in this section is funding provided for workforce development, as that is being examined as part of another committee study currently underway reviewing alignment of postsecondary education and employment. Also, major financial supports for tourism (except the film tax credits) and agriculture are not discussed since most of those come through two other state agencies -- Commission on Culture and Tourism and the Department of Agriculture -- that support those industries.

This section also discusses some federal programs where funding comes into Connecticut for business development through the U.S. Department of Commerce Small Business Administration (SBA) that supports small business development in general, and through the Small Business Innovation Research (SBIR) program, which coordinates and awards research and development grants from various federal agencies.

Department of Economic and Community Development (DECD)

The department's mission is to maximize economic opportunities through: the creation of jobs; workforce development; business expansion, recruitment and retention; export assistance and foreign investment; and development and implementation of comprehensive long-term development strategies, such as Connecticut's industry cluster initiative. Section II provided the "what" and "how" we are doing that while this section describes the "how much" by outlining the funding that goes to business development from federal funds, the state's General Fund, bond monies, and through tax credits and exemptions.

Federal funds. DECD receives little in the way of federal funding for direct economic development. The Economic Development Administration of the U.S. Department of Commerce reported that Connecticut received one grant for $65,000 in federal FY 07, the lowest amount of any state (this will be discussed in comparison to other states in Section IV). DECD has received a $2.7 million, three-year grant from the U.S. Department of Labor that is being used through the insurance and financial services cluster to establish a center for educational excellence. The funding has helped develop an insurance analyst associates degree program in connection with the community college system, as well as providing on-the-job training to over 500 people in that industry area.

General Fund. Since 2004, DECD has funded 19 different programs with General Fund monies. Table III-1 lists the programs that received General Fund monies in any year between FY 04 and FY 08, and the amounts in current dollars. However, as the table below shows, the number of programs and their funding has been inconsistent. The instability in program funding perhaps demonstrates the lack of a long-term economic development strategy. For example, in

FY 02, DECD funded the cluster initiative at $2.4 million; in FY 04, the cluster initiative received $40,000 and since that time has received no state funding. The Entrepreneurial Center is the only program that has received consistent General Fund support over the five-year period.

Table III-1: DECD Programs and Funding: General Fund						
	Fiscal Years					
Programs	**FY 04**	**FY 05**	**FY 06**	**FY 07**	**FY 08**	**Total FYs 04-08**
cluster initiative	$40,000					$40,000
entrepreneurial center	$150,000	$142,500	$142,500	$142,500	$142,500	$718,000
Small Business Incubator Program @ CT Center for Advanced Technology (CCAT)				$1 million	$1 million	$2 million
CONNSTEP (LEAN mfg)				$1 million	$1 million	$2 million
grant for micro loan pilot					$50,000	$50,000
grant to OWC for SBIR tech asst.				$250,000	$250,000	$500,000
CT Research Institute (strategic plan)				$500,000		$500,000
research-based technology transfer				$40,000		$40,000
fuel-cell economic development and plan				$375,000		$375,000
CCAT – Fuel cell plan and cluster development				$450,000	$250,000	$700,000
operating grant to Westville Village as a commercial district					$80,000	$80,000
grant to UConn for Avery Point technology incubation program					$250,000	$250,000
CCAT energy application research					$225,000	$225,000
Eastern CT State University—biofuels information program					$100,000	$100,000
Total	**$190,000**	**$142,500**	**$142,500**	**$3,807,500**	**3,397,300**	**$7,679,800**
Total DECD GF	**$21,176,551**	**$22,098,589**	**$16,990,826**	**$23,028,157**	**$25,031,721**	**$108,325,844**
% ED program funding of DECD GF	**0.89%**	**0.06%**	**0.83%**	**16.5%**	**13.5%**	**7%**
Source: Report on Economic Development by Office of Legislative Research and Office of Fiscal Analysis						

As the table shows, while the number of economic development projects, and funding to support them, has increased over the five-year period, the first two years of funding to non-department economic development programs totaled less than one percent of DECD's General

Fund budget. Further, over the five-year period the average of General Fund dollars to support non-department programs was 7 percent of the department's overall General Fund budget.

Another indicator of tepid support of economic development is the allocation of staffing to economic development within the agency itself. DECD's FY 08 annual report shows that allocation of staffing for economic development programs is not a department priority. In FY 08, of the almost $7 million of DECD personal services, about $700,000 (10%) was for staffing of programs in economic development, while much more was for overall agency administration, community development, or housing.

DECD bond programs. The vast majority of the financial assistance to support business economic development in the state is through the Manufacturing Assistance Act (MAA), administered through DECD. The MAA, created by the legislature in 1990, is used primarily for incentive-driven direct loans to support specific projects that are determined to have strong economic development potential. Typically, this is measured by the number of jobs to be retained or created by the project. About $153 million in bond funds have been used over the life of the program, and the MAA has funded approximately 100 projects, almost all (96 percent) in the form of loans rather than grants. Also, as loans are repaid they become part of the MAA account that can fund future projects. In FY 09 about $5 million was collected in principal and interest on prior loans.

MAA recipients by industry. DECD indicates that for every dollar the state invests in MAA-assisted projects, $6.3 dollars are invested by the private sector. Seventy-one of the funded projects have been in manufacturing, with $54.5 million in loans and almost $14 million in grants to that industry. The other major industry area that receives funding through MAA has been the finance and insurance area, which has received almost $62 million. Up until 2008, agricultural activity was not a program given assistance through MAA. However, P.A. 08-34 expanded eligibility to "other economic base business sectors," with several farms receiving loans in FY 08.

Table III-2 shows a more specific breakdown of MAA funding to industry areas over the years. The table highlights those funded areas considered industry clusters, and shows that three of the clusters – finance, bioscience, and aerospace manufacturing -- received about 45 percent of the assistance.

Table III-2: DECD Funding by Industry, FYs 1992-2008			
Industry	**Total**	**Industry**	**Total**
Insurance, Financial and Financial Consulting Services	$63,492,250	Incubator	$3,000,000
Manufacturing	$39,355,044	Business Support Services	$2,500,000
Bioscience	$12,299,074	Printing	$1,600,000
Wholesale	$10,000,000	Medical Equipment Manufacturing	$973,950
Film	$8,000,000	Agriculture	$785,000
Food Manufacturing	$7,800,831	Fabric Mill	$550,000
Aerospace Manufacturing	$5,666,000	Contractors	$500,000
Retail	$3,700,000	Engineering Services	$267,000
Utility	$3,500,000	Educational Services	$250,000
Transportation	$3,275,000	Technology	$200,000
		Grand Total	**$167,714,149**
Source: DECD FY 08 Annual Report			

Table III-3 shows the funding through MAA by year and total number of projects funded and whether the assistance provided was grants or loans. While the MAA funding is the major source of DECD direct financial assistance, two minor sources also provided funding. Slightly more than $14 million came from the Urban Act (another bond-funded program largely administered by the Office of Policy and Management) and $400,000 came from the Naugatuck Valley Revolving Loan Fund.[19]

Table III-3: DECD Business Assistance By Year				
Fiscal Year	**# grants**	**$ amt of grants**	**# loans**	**$ amt of loans**
FY 92	0	0	1	$2,099,074
FY 93	1	$3,000,000	3	$2,350,000
FY 94	0	0	0	0
FY 95	1	$500,000	0	0
FY 96	1	$2,000,000	0	0
FY 97	0	0	0	0
FY 98	2	$1,950,000	10	$5,016,044
FY 99	3	$5,050,000	11	$10,537,500
FY 00	1	$5,000,000	8	$4,975,000
FY 01	0	0	9	$60,019,750
FY 02	0	0	10	$8,037,831
FY 03	0	0	5	$5,470,000
FY 04	1	$2,500,000	0	0
FY 05	0	0	3	$775,000
FY 06	0	0	10	$4,227,950
FY 07	0	0	12	$18,026,000
FY 08	0	0	18	$26,180,000
Total	**10**	**$20,000,000**	**100**	**$147,714,149**
Source of Data: DECD FY 08 Annual Report				

[19] Naugatuck Valley Revolving Loan Fund is one of about 20 revolving loan programs supported by DECD in the state. Typically operated by local organizations and often funded initially with state funding, the local programs provide loans that target local businesses or projects in the region. Often DECD guarantees the loan.

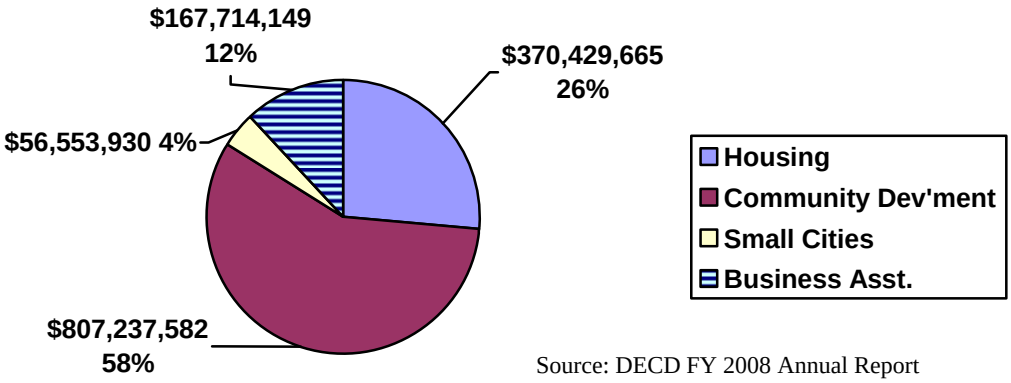
As the table shows, the project activity and the financial assistance varies substantially from year to year. The highest loan amounts were provided in FY 01, slightly more than $60 million to nine projects, while in other years no projects were funded, although the number of projects and total loans has increased again in FYs 07 and 08.

DECD reports on its assistance as a percent of the cost of the overall project, and also the amount of private funding that support the project. However, the department does not report on how many businesses sought assistance from DECD but did not receive it, nor does it report on the amount or percentage of assistance given compared to the amount sought. Therefore, it is difficult to determine whether there were no project requests in the years when no funding occurred, or whether there was no state funding available to provide incentives.

While the primary use of MAA funds has been for direct loans to businesses, about $65 million has also been used over the years to fund approximately 120 projects that DECD categorizes as community development. Most of those have been grants to communities for infrastructure improvements, or for large, mostly publicly funded projects, like Adriaen's Landing in Hartford. But several others, including CONNSTEP, the procurement technical assistance program, and microloans to minority- and women-owned companies are targeted toward business development.

The figure below shows DECD's financial investments by component -- business, community development, small cities, and housing -- as categorized by the department. As the figure shows, only 12 percent of the financial assistance provided by the department supports business. And though $167 million over a 17-year period is not insignificant, averaging more than $8 million a year, it is not a major part of the portfolio. While economic development is a broad concept and strong communities and housing supports are important, housing and community infrastructure depend on thriving commercial activity in the state's economy for revenue. There is also funding for the MAA left untapped. The legislatures' Office of Fiscal Analysis reports that about $69 million in bond money authorized for the MAA is currently unallocated.

Figure III-2. DECD Investment Portfolio as of 2008



Source: DECD FY 2008 Annual Report

Measures of performance. Statutorily, all businesses that receive direct financial assistance through DECD must retain operations in the state for not less than 10 years afterwards. If the businesses do not comply, the recipient is required to pay back the assistance with a 5 percent additional interest penalty. DECD reports that, since 1992, 20 companies have been assessed about $7.4 million in penalties for failure to keep operations in the state for the required period.

DECD is statutorily required to report to the legislature on jobs that resulted from the financial assistance. As a condition of receiving assistance, the vast majority of contracts between DECD and the project or business requires the creation and/or retention of jobs by a specific date, usually within two to five years of the contract date. Businesses are required to report on the job numbers and, according to DECD, these are audited and verified, either by DECD or an independent public accountant. Penalties can be assessed for failure to meet job requirements; DECD reports almost $6.9 million in penalties were assessed against 29 companies since 1992.

DECD's FY 08 Annual Report indicates that the overall job goals the assistance was intended to achieve were met. However, the record for individual projects is not as good; of the 64 companies that had contractual obligations for job creation or retention for the FY 08 period, 32 companies met or exceeded the contractual requirements, while 32 companies did not. Another 28 companies were pending job report audits, and 16 projects had no job requirements. Table III-4 shows the FY 08 job audit results.

Table III-4: DECD Business Assistance Portfolio: Job Audit Results as of FY 08

	# of Companies	Jobs: Contract Obligation			Actual jobs	% of Contract
		Retained	Created	Total		
Met Job Goal	32	6,622	3,026	9,648	13,441	139%
Did Not Meet	32	11,265	1,850	13,115	11,463	87%
Total	64	17,887	5,258	22,763	24,904	109%

Source: DECD FY 08 Annual Report

Connecticut Development Authority

The Connecticut Development Authority is a quasi-public agency, created in 1973, whose mission is to provide financing and investment capital to individual companies to help businesses grow in Connecticut. This mission supports an older model of economic development where the state acts as a lender, sometimes of last resort.

The authority has administered different programs over the years, all aimed at providing financial assistance of one type or another. The authority raises funds through the issuance of tax exempt bonds and through revolving loans (i.e., as loans are repaid, new loans are made). For the most part, programs administered by CDA are statutorily mandated. Periodically, the state legislature has consolidated or merged programs, making it somewhat difficult to track activity and funding by program over the long term. Also, CDA may promote or label its products differently than the name of the source of funding for the product.

According to CDA, since 1992, for every dollar the state initially contributed, the authority has provided $17, for a total of $742.3 million in loans, guarantees, and tax relief. The CDA indicates it has assisted 1,600 different companies over the years. Companies may receive more than one loan or type of assistance and may receive allotments more than once in a year. Thus, the number of loan transactions greatly exceeds the number of businesses that received assistance. The authority has also provided another $700 million in assistance to 62 companies through issuance of authority tax exempt bonds, with the companies paying the debt service.

Table III-5 lists CDA's major lending or tax incentive programs, what business or sector each program targets, and each program's major features.

Table III-5: Connecticut Development Authority: Targeted Businesses and Products Available
For most businesses: • Direct, participating, or guaranteed loans up to $5 million for up to 20 years • Line of credit up to $1 million over 8 years • May be use for most businesses except non-ownership occupied real estate
For small businesses: • URBANK program provides loan guarantees through banking partners • In any location for any business including retail or service • Guaranteed loans up to $350,000 for up to 15 years
For early-stage businesses with significant economic potential: • Direct or mezzanine (hybrid) loans • Most businesses except real estate • Financing usually in tandem with banks or other private lenders or investors
For technology-intensive businesses and projects: • Financing to supplement capital requirements of expanding or early-stage (incubator) technology-intensive companies, information technology offices, laboratory and/or research facilities, and smart buildings occupied by technology-intensive businesses • All CDA financing products, including tax incremental financing (TIF), up to $5 million for up to 20 years; may be in tandem with other lenders or investors
For brownfields redevelopment: • For projects requiring remediation of environmentally contaminated commercial or industrial properties • Direct, guaranteed, or participating loans up to $5 million for up to 20 years • Tax incremental financing – Financing tool that uses the estimated future increases in local tax revenue to finance the debt to pay for project. Provides a cash incentive equal to the net present value of the portion of future incremental tax revenues generated by the project (requires municipal support) and letter of credit
For economic inducement projects: • For relocation to or significant expansion in Connecticut or building or retrofitting facilities for technology-intensive use • Cash incentives based on tax incremental financing for technology-intensive projects in designated communities - TIF application needs municipal support and letter of credit • Below market rates for loans up to $5 million for up to 20 years; can be in tandem with other lenders or investors
For most for-profit businesses • Lower-cost funding for fixed assets like machinery, equipment, facilities etc. • Small Business Administration long-term fixed rate debentures (bonds) • Up to $4 million for up to 20 years -- up to 40% of project – (w/50% from commercial lender and 10% from business)
For manufacturers: • Acquisition of new buildings or equipment by manufacturers • Lower-cost, tax-exempt financing for manufacturers through industrial revenue bonds • Up to $10 million over 40 years at prevailing interest rates for tax-exempt bonds
Source: Connecticut Development Authority

CDA uses underwriting guidelines to make its loans and loan guarantees. Because CDA is self-sustaining and relies on loan repayments to fund its activities, it tends to fund businesses and companies with a track record. Often CDA will provide some of the capital, with a private lender also financing a portion. Similar to DECD, the authority is required to conduct due diligence prior to financing. CDA's criteria are described in its annual report. One set of criteria

could be described as "qualitative," such as the company's compliance with OSHA standards, and whether the business qualifies as a "high performance work organization." The other set of criteria is more quantitative, such as projected rate of return. CDA also has lending guidelines, e.g., a loan should not provide for more than $20,000 per job retained or created.

Thus, the vast majority of CDA products are not high risk. However, two of the authority's products feature loans targeted to start-up companies, especially those focused on technology, but it is unclear at this point how many companies have received such assistance. CDA also provides financing for development projects such as brownfield remediation and the Main Street project which supports revitalization of town centers of Connecticut municipalities.

Table III-6 shows the CDA annual financial assistance activity by funding source from FY 06 through FY 08.

Table III-6: CT Development Authority: Assistance Activity FY 06-FY 08

Fund	FY 06		FY 07		FY 08	
	# Projects	Total $	# Projects	Total $	# Projects	Total $
Growth Fund	9	$3,018,487	9	$1,822,479	6	$1,395,973
Works Fund (A)	5	$4,168,236	9	$7,100,918	9	$5,422,998
URBANK	15	$512,200	13	$350,000	18	$1,046,650
Brownfields	1	$672,874	0	0	2	$5,500,000
Sales and Use Tax Exemption	4	$13,850,000	10	$21,770,000	3	$5,400,000
Total Asst.	34	$21,548,923	41	$31,043,397	38	$18,765,621

Source: CDA

Table III-7 shows that annual costs for CDA operations have been somewhat more than $6 million over the past three years, which translates to between 20 to 33 percent of the *direct* financial assistance annually (shown in Table III-6). Of course, this direct assistance is based on new loan activity, and not the total value of the authority's loan portfolio, or its bond issues.

Table III-7: CT Development Authority Operations Expenditures FY 06 –FY 08

FY 06		FY 07		FY 08	
# Staff	$ Exp.	# Staff	$ Exp	# Staff	$ Exp
27	$6,688,234	27	$6,201,499	26	$6,337,200
Percent of Operations to Amounts Assistance	31%		20%		33%

Sources: CDA Annual Reports, Financial Statements and FY 07 Auditor's Report of CDA

According to CDA reports, historically about three-quarters of its financial transactions have supported the manufacturing industry.

PRI staff examined the FY 08 recipients of CDA assistance, which results are presented in Table III-8. As the table indicates, the type of business receiving assistance depends greatly on the program, with manufacturers receiving much of the assistance from the Growth and Works Fund, while the URBANK program, aimed at small business, assists many more service companies.

Table III-8: FY 08 CDA Assistance by Industry Area

Fund/program	# Companies	Type of Business
Growth Fund	6	5 manufacturing 1 service
Works Fund (A)	9	8 manufacturing, including 1 fuel cell manufacturer; 1 wholesale
URBANK	18	2 restaurants 9 service including 1 legal and 1 medical 1 retail 1 recreational 1 contractor 1 insurance 1 gas station 2 manufacturing
Brownfields	2	2 higher education facilities
Sales and Use Tax Exemption	3	1 wholesale distribution 2 insurance
Source of Data: CDA FY 08 Annual Report		

Measures of performance. The Connecticut Development Authority, like DECD, is statutorily required to report on job creation and retention for projects that received assistance. Annually, the authority is required to report on the number of jobs at the time of project application and the number anticipated to be retained and created compared with the number actually retained and created. While the CDA does report on these measures by company, those numbers are not used as a results measure of the CDA programs overall.

The measures that CDA reports on as its measure of success are: 1) the actual number of jobs in the funded businesses as of June 2008 (regardless of the number of jobs at the time of the loan); and 2) the number of jobs *created* each year in the program, with a total by program. This is different than DECD reporting, which measures the number of jobs created or retained against the number indicated in the contracts. PRI staff is analyzing the CDA jobs performance data and will present that analysis in the final report.

Connecticut Innovations, Inc. (CII)

The third state economic development agency is Connecticut Innovations, Inc., a quasi-public agency created by the legislature in 1989 based on the recognized need "for a coordinated, centralized clearinghouse to provide entrepreneurs with easy access to scientific research, technology information, technical assistance, financial capital and other resources for the creation and retention of new jobs and businesses.[20]" The legislature at the time also recognized that Connecticut's economy was heavily reliant on defense-dependent businesses and that assistance was required to help the businesses convert to new non-defense-related technologies.

[20] C.G.S. Sec. 32-33

CII's primary focus is on helping technology-based entrepreneurs with the commercialization of innovative technologies through risky capital investments and other initiatives. CII also focuses on university/industry collaboration and transferring technology from the research and development stage, which often occurs in academia, to commercialization and the broader economic markets.

Potential technology-based companies often need outside capital to grow and succeed. These small start-up companies are often risky investments and many will not succeed. However, those that receive this type of venture capital at fairly early stages of development are more likely to succeed and grow than those without funding. The stages of development where this financing can be targeted are:

- Seed/Start-up Stage
  - initial stage of development
  - concept or product under development; usually not fully operational
  - usually in existence for less than 18 months
- Early Stage
  - product or service in testing or pilot production
  - may be commercially available and may or may not be generating revenues
  - usually in business less than three years
- Expansion Stage
  - Product or service in production and available commercially
  - significant revenue growth
  - may or may not yet be profitable
- Later Stage
  - Product or service is widely available
  - generating positive cash flow and ongoing revenue

Funds. CII has several funds established through which loans and grants are made to companies at each stage of technology development. Below is a description of the financial incentives administered by CII and the need they address in the technology-based innovation economy.

Pre-Seed Support Services. Beginning in 2007, CII launched this program that provides in-kind assistance to entrepreneurs rather than direct funding. CII staff assists entrepreneurs in cultivating ideas, refining business strategies, and navigating the road to business formation.

Seed Investment Program. This program provides up to $500,000 in funding to technology companies that have a prototype (e.g., sample) of their product. These are typically high-risk companies that are at the phase where they are trying to initially commercialize a product. The funding CII provides typically carries them for 12 months or less.

Eli Whitney Fund. This program is CII's main investment fund through which capital is provided. Funding supports companies with innovations and products in: bioscience, energy and environmental systems, information technology, photonics/applied optic (e.g., lasers and fiber-optic cables for communication), advanced materials, and engineering. Companies that seek funding have begun the commercialization process. Generally, a company receives between $500,000 and $1 million per round of funding and usually receives from CII about $3 million to $4 million in total. CII funds approximately 10-12 companies a year through this fund.

The Eli Whitney fund has received national recognition. In 2007, the State Science and Technology Institute (SSTI), a national organization dedicated to improving state and regional economies through science, technology, and innovation, recognized CII for creating and implementing a fund that increases technology companies' access to capital.

BioScience Facilities Fund. This fund helps firms build space needed to propel the bioscience industry like wet laboratory space and high-tech lab space.

BioSeed Fund. This fund assists start-up companies involved in medical research aimed at solving unmet medical needs and assists in attracting "Series A[21]" financing by providing developmental stage monies and expertise. CII typically invests up to $500,000 in a company.

Clean Tech Fund. Investments are made in seed and early-stage companies and are focused on innovations that conserve energy and resources, protect the environment, or eliminate harmful waste, or on other green technology. This program, separate from the electric ratepayer-supported Clean Energy Fund, was launched in November 2008 and the first funding occurred in FY 2009. CII, the Clean Energy Fund, and DECD each committed $3 million for the fund, although DECD to date has not provided any monies for the fund or for the initial investments that have been made.

Table III-9 provides a breakdown of the investments by each CII fund since 2000. As is shown in the table, in the early years of this decade, CII was able to invest more in companies than in more recent years. In 2008, funding almost doubled from 2007 levels but did not reach the levels seen in the early 2000s. In total, CII has funded $95.5 million through the various programs, averaging about $10.6 million a year.

[21] Series A financing is the first round of financing after seed capital. Generally, the company is generating revenue but rarely is it generating net profits. Series A investors tend to be venture capitalist or angel investors (individuals who provide capital for start-up companies).

Table III-9: Connecticut Innovations Inc. Investments by Fund, 2000-2008 ($ in thousands)										
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Total**
Eli Whitney Fund	$20,489	$21,649	$11,905	$3,667	$2,253	$3,670	$1,493	$5,812	$6,183	$77,121
BioFacilities	$1,500	$1,400			$4,922				$4,000	$11,822
BioSeed			$700		$500			$500		$1,700
Emerging Enterprises[1]	$744	$500								$1,244
Next Generation[2]					$1,712	$388				$2,100
Pre-seed Support									$57	$57
Seed								$200	$1,300	$1,500
Total	**$22,733**	**$23,549**	**$12,605**	**$3,667**	**$7,675**	**$ 3,670**	**$1,493**	**$6,512**	**$11,540**	**$95,544**

[1] Emerging Enterprise fund no longer exists. It was a separate entity between CII and Fleet Bank where the two co-funded start-up companies.
[2] Next Generation was a separate LLC entity formed with the Phoenix Companies that co-invested in companies. CII and Phoenix each invested 48 percent directly in companies with 2 percent going to an administrator of the fund. The fund no longer exists.

Source: CII

Grants and programs. In addition to the funds that receive financial support, CII runs other programs: a scholarship program; a BioBus education initiative; and a technology competition called Yankee Ingenuity. Funded by returns on CII's investments, the "Technology Scholars" program offers earned scholarships, leadership training, and assistance with internships to state students who study science or engineering at colleges or universities in the state, and who agree to work in Connecticut for two years after graduation. Between FY 04 and FY 08, CII invested $850,000 in the program and awarded 115 scholarships.

Launched in June 2001, the BioBus is a joint initiative with Connecticut United for Research Excellence (CURE), the organization that represents the bioscience industry cluster. The bus is a laboratory on wheels and visits schools to let students experience firsthand the world of science. In 2008, the CII initiative received $500,000 in bond funding to support its operations.

The Yankee Ingenuity Technology Competition provides funding that enables business and university researchers to collaborate on research and development projects leading to marketable products. Projects are selected through a competitive process. The initiative was funded only between 2004 and 2006 for a total amount of $400,000.

CII funding. Since CII was formed the state has allocated $178 million in bond funding to it. However, in actuality, only $81 million went directly to CII to use for investing in companies. In the early years, CII was used as a pass-through organization and the majority of the funding was granted to the state's universities and colleges for high-tech research. Since the late 1990s, CII has received minimal state funding and is primarily a self-funded organization. CII relies on its return on investments to provide for both operating expenses and new investments. CII reports that since FY 05, it has achieved a cumulative internal rate of return of 19.9 percent that has enabled it to continue operating.

Bond allocations. CII receives most of its government funding from bond allocations. The legislature may authorize bond funding specifically for CII funds or programs but the State Bond Commission must then allocate the funding to CII. Table III-10 shows the authorized funding since 2000 and the unallocated portions.

Although the legislature over the years has recommended bond funding allocations to Connecticut Innovations, Inc., the money has often not been authorized by the bond commission. Of the $50 million authorized by the legislature to CII since 2000, $26.5 million (or more than 50 percent) remains unallocated as of August 2009. Of the amount that remains unallocated, $6 million was slated to help biotechnology facilities and $20.5 million was allocated in 2007 for the recapitalization of CII programs.

Table III-10: CII Bond Funding Authorized by the Legislature Since 2000 and Allocation Status

Description	Year	Authorized	Unallocated	Amount CII received
Biotechnology Facilities	2000	$10 million	$0	$10 million
	2001	$10 million	$0	$10 million
	2002	$5 million	$5 million	$0
	2003	$1 million	$1 million	$0
Recapitalization of CII programs	2008	$12 million	$8.5 million	$3.5 million
	2009	$12 million	$12 million	$0
Total		**$50 million**	**$26.5 million**	**$23.5 million**

Source: Office of Fiscal Analysis

In addition to receiving far less than authorized in state bond funds, in tough budget years, the state has redirected funds from CII to the General Fund. CII funding was reduced by $17.5 million which was transferred to the General Fund between 2003 and 2005.

Since fiscal year 2000, CII has funded 63 companies in Connecticut for a total of approximately $95.5 million in assistance. Since primarily self-sustaining, CII's funding to technology companies varies annually and Table III-11 shows how the funding has been distributed by type of industry since 2000. CII has invested about half of its funding in information technology companies with about a third going towards bioscience companies.

Table III-11: Connecticut Innovations funding by industry, FY 2000- FY 2008									
	FY 2000	**FY 2001**	**FY 2002**	**FY 2003**	**FY 2004**	**FY 2005**	**FY 2006**	**FY 2007**	**FY 2008**
Information Technology	$15,339,185	$6,351,003	$7,305,251	$2,250,000	$5,031,528	$3,025,000	$243,300	$3,901,457	$5,109,092
BioScience	$4,394,098	$12,330,748	$4,300,000	$1,067,000	$2,400,000	$570,350	$1,250,000	$1,911,050	$4,939,384
Energy and Environment	$2,000,000	$2,998,423	$0	$0	$0	$0	$0	$0	$642,000
Photonics	$0	$868,997	$500,000	$350,000	$174,198	$75,000	$0	$0	$850,000
Advanced Materials	$500,000	$0	$0	$0	$0	$0	$0	$0	$0
Other	$500,000	$1,000,000	$500,000	$0	$70,000	$0	$0	$700,000	$0
TOTAL	**$22,733,283**	**$23,549,171**	**$12,605,251**	**$3,667,000**	**$7,675,726**	**$3,670,350**	**$1,493,300**	**$6,512,507**	**$11,540,476**
Source: PRI analysis of CII data									

CII's operating expenses, while relatively stable from year to year, consume a high percentage when compared to the amount of funding that is allocated to companies. The percentages vary between a low of 38 percent in 2008 to more than 100 percent of funding amounts in 2005 and 2006 as shown in Table III-12.

Table III-12: Connecticut Innovations Inc. Operating Expenses, FY 04 - FY 08					
	FY 04	**FY 05**	**FY 06**	**FY 07**	**FY 08**
Operating Expenses	$ 3,771,000	$ 4,205,000	$ 4,717,000	$ 4,388,000	$ 4,393,735
% Operations to assistance	49%	115%	316%	67%	38%
Source: CII annual reports					

Small Business Innovation Research (SBIR). The U.S. Small Business Administration (SBA) Office of Technology administers the Small Business Innovation Research and the Small Business Technology Transfer (STTR) programs. The aim of these two federal initiatives is to ensure that the nation's small, high-tech innovation businesses (employing fewer than 500) are a significant part of the federal government's research and development efforts. The STTR program has a particular focus of moving ideas from the laboratory to the marketplace.

Eleven federal agencies[22] participate in the SBIR program; five agencies[23] participate in the STTR program, awarding approximately $2 billion annually to small companies nationwide. Grants to companies are awarded on a competitive basis. The grants are awarded as follows: the first is for a feasibility study to evaluate the feasibility and scientific merit of a new technology (Phase I awards up to $100,000); the second is to develop the technology to a point where it can be commercialized (Phase II awards up to $750,000); and the third is for commercialization of

[22] The SBIR program solicitations are issued by eleven federal agencies, including the Departments of Defense, Health and Human Services, Energy, Homeland Security, Agriculture, Commerce, Education, and Transportation, and NASA, National Science Foundation, and Environmental Protection Agency.
[23] Departments of Defense, Energy, and Health and Human Services, and NASA and National Science Foundation.

the results of Phase II and requires the use of private sector or non-SBIR federal funding (Phase III only applies to SBIR program). Table III-13 shows the number of awards Connecticut companies have received since 2000 and the total value of the awards.

Table III-13: Connecticut SBIR Awards 2000-2008

Year	Number of Awards	Value of Awards ($ in millions)
2000	68	$ 17.4
2001	83	$ 19.3
2002	109	$ 25.1
2003	112	$ 31.5
2004	107	$ 38.5
2005	102	$ 33.5
2006	88	$ 21.1
2007	108	$ 31.5
2008	107	$ 32.5
Total	**884**	**$ 250.4**

Includes SBIR & STTR awards; Phase I & Phase II

Source: SBA Tech-Net database

Connecticut has always competed for SBIR/STTR grants but as of 2004, Connecticut has had an office dedicated to assisting small companies with the grant programs, since the award process is very competitive. The program office operates on a grant from Office of Workforce Competitiveness and is staffed by two people. The program had been located at the Connecticut Center for Advanced Technology (CCAT) in East Hartford but was relocated to CII in April 2009. However, the office was not funded in the FY 2010 budget and CII will have to assume the costs of running the office.

The SBIR team assists companies with their applications to receive federal grant money and helps small businesses compete for federal procurement contracts. The SBIR office also manages a database that helps small businesses in two ways: 1) it connects small businesses with larger companies in the state (and beyond) that might want to buy their products; and 2) if a large firm is seeking an innovative solution that the small business is developing, it demonstrates to federal agencies the value of a specific SBIR proposal, increasing the chances the company will be funded.

Table III-14 shows how many Phase I proposals have been submitted for review and how many have actually received awards. The table also displays how Connecticut fares compared to its competitor states. Since 2005, Connecticut has improved its award approval rate, going from 15 percent of the proposals being awarded to 19 to 20 percent approval rates more recently.

Table III-14: SBIR Phase I awards, 2005-2008												
	2005			2006			2007			2008		
	Awards	Proposals	% received	Awards	Proposals	% received	Awards	Proposals	% received	Awards	Proposals	% received
California	816	4,937	17%	725	4,484	16%	717	4210	17%	688	4,197	16%
Connecticut	53	348	15%	53	351	15%	70	351	20%	63	333	19%
Illinois	66	388	17%	57	496	11%	75	387	19%	63	360	18%
Massachusetts	508	2,630	19%	466	2,569	18%	466	2500	19%	476	2,266	21%
Minnesota	56	379	15%	78	400	20%	53	281	19%	38	274	14%
New Jersey	102	698	15%	85	643	13%	91	607	15%	89	549	16%
New York	186	950	20%	163	944	17%	163	898	18%	195	883	22%
North Carolina	50	356	14%	56	394	14%	61	347	18%	66	361	18%
Pennsylvania	176	913	19%	133	874	15%	141	729	19%	129	721	18%
Virginia	242	1,570	15%	221	1,476	15%	249	1392	18%	224	1,324	17%
US Total	4,122	25,130	16%	3,655	23,948	15%	3785	21388	18%	3,555	21,162	17%
Source: SSTI												

Small Business Administration

The federal Small Business Administration (SBA) has offices in each state and works with private lenders to provide needed capital to local small businesses. (This activity is separate from the SBIR and STTR grant programs, administered by the federal SBA office but working through CII, as described above).

The SBA financing program guarantees the loans made by private banks – the percentage of guarantee varies by size of loan – and SBA maintains its operations through fees based on the guaranteed amounts. Unlike the federal SBIR programs, the SBA financing arm is to facilitate private loans, not make outright grants. Financing is typically for general small businesses, often involved in the service or retail industry (about 44 percent of loans as shown in Table III-15), and not for companies involved in research and development.

Table III-15: SBA Loan Guarantees by Industry, 2006-2008			
	2006	**2007**	**2008**
Administration & Support	81	76	44
Agriculture	2	4	0
Construction	156	140	105
Education	19	16	18
Finance & Insurance	19	18	9
Health & Social Assistance	79	75	37
Information Services	19	10	7
Manufacturing	118	97	84
Mining	0	2	0
Professional, Scientific, Technical Services	162	123	75
Public Administration	2	1	1
Real Estate, Rental & Leasing	30	28	17
Retail	295	211	151
Service Industry	352	298	206
Transportation & Warehousing	41	36	12
Utilities	0	1	0
Waste Management	8	7	7
Wholesale Trade	59	51	32
Total	1,442	1,194	805
Source: PRI Staff analysis of SBA data			

Committee staff obtained SBA data on recent Connecticut loan activity and Table III-16 shows the number of loans and total financial assistance for the past three years. The number and amount of loans have declined from 2006 to 2008 as a result of the recession, according to SBA staff. However, the average amount per loan increased by 44 percent between 2007 and 2008.

Table III-16: Connecticut Small Business Administration Guaranteed Loans, 2006-2008			
	2006	**2007**	**2008**
Number of Loans	1,442	1,194	805
Dollar Amount	$ 235,844,000	$ 189,233,694	$ 183,161,164
Average per loan	$ 163,553	$ 158,487	$ 227,529
Source: Connecticut SBA office			

Business Tax Credits

The first part of this section discussed direct financial assistance to businesses in Connecticut. Another equally important incentive to business to stimulate economic activity is through the use of tax credits which are discussed in the remainder of this section.

Tax credits are offered by the state to lower a business' tax liability, while encouraging investments in a particular economic area that qualifies for the credit. Primarily, business tax credits are administered through the Department of Revenue Services (DRS). However, tax

credits aimed specifically at promoting economic development are administered by DECD. In addition the Office of Policy and Management and the Commission on Culture and Tourism administer tax exemptions and other assistance economic assistance.

Department of Revenue Services

While not direct financial assistance to businesses, tax credits are used to lessen the state and or local tax a business would otherwise have to pay. The amount of tax credits allowable cannot exceed 70 percent of the amount of state tax due or reduce the amount of tax to less than $250. It is important to note that business tax credits can be used only by incorporated businesses that would pay a corporation tax, and not by limited liability corporations. Because of the lag in corporate tax filing requirements to DRS, the most recent tax year for actual business credit usage is generally 2006.

Currently, Connecticut offers 17 different business tax credits that are administered by the Department of Revenue Services (see Table III-17).

Table III-17: Connecticut Business Tax Credits

4. Apprenticeship training credit in manufacturing plastics, plastics-related, or construction trades	13. Hiring incentive
5. Clean alternative fuels	14. Human capital investment credit
6. Computer donation	15. Machinery and equipment
7. Displaced worker	16. Neighborhood assistance
8. Donation of land	17. Research and development
9. Electronic data processing	18. Research and development expenditures
10. Employer assisted housing	19. Research and development grants to higher education
11. Financial institutions	20. Small business guarantee fee
12. Fixed capital	

Source: Department of Revenue Services

Following is a description of the major business credits with the highest utilization and the highest total dollar value.

Electronic Data Processing. This credit is equal to 100 percent of the personal property tax owed and paid on electronic data processing equipment during any income year. The credit is first applied against the corporate business tax after all other tax credits have been applied. Any tax credit that is not used may be carried forward to the next five succeeding income years. For the past five tax years (2002-2006), an average of $17.7 million a year was issued in these credits.

Fixed Capital. A credit of 5 percent for amounts paid or incurred for fixed capital (which includes machinery but does not include inventory, land, buildings or structures, or mobile transportation property) is applied against the corporate business tax. The credit allows a five-

year carry forward. For each of the past five tax years (2002-2006), about 2,600 businesses have been issued credits on average, totaling about $53 million annually.

Human Capital Investment Credit. A credit of 5 percent against the corporate tax owed may be applied for expenditures incurred by a corporation for human capital investments such as: in-state job training, work education programs, donations to institutions of higher learning, and child care subsidies. Any credit not used during the income year can be carried forward to the next five succeeding income years. On average 170 credits are issued each year worth about $1.8 million annually.

Machinery and Equipment. This credit applies only to corporations with fewer than 800 employees and allows the incremental increase in machinery and equipment expenses to be deducted against the corporate business tax. The credit is applied on a sliding scale according to the size of the company: a five percent credit applies to companies employing between 251 and 800 employees, and a 10 percent credit applies to companies with 250 employees or less. Each year approximately 200 credits are claimed for a total of $1.7 million annually.

Research and Development (R&D) Expenditures. Often firms will under invest in research since the financial payback for new inventions is often uncertain and many discoveries eventually become public goods, utilized by many. Therefore, the research and development tax credit serves as an important state policy tool to stimulate and encourage R&D activity. Connecticut has three different research and development credits: R&D for grant that businesses make to higher education institutions, R&D for non-incremental[24] expenditures, and Research and Experimentation for incremental expenditures.

Higher Education. The least-utilized R&D credit applies to businesses that make grants to higher education institutions. A credit up to 25 percent may be applied against the business income tax owed for the incremental increase in amounts spent by a corporation for grants to higher education institutions for the purposes of research and development related to advancements in technology. Between 2000 and 2006, six credits were issued for a total of $238,755.

Non-Incremental R&D. This credit is for the non-incremental R&D expenditures incurred in Connecticut and is applied against the corporate business tax. Small businesses[25] qualify for a credit up to 6 percent of R&D expenses while all other corporations qualify according to the guidelines outlined in Table III-18.

[24] Non-incremental expenditures are first-time R&D costs that a company incurs; incremental expenditures are costs incurred in subsequent years.

[25] A qualified small business is defined as a company that has gross income for the previous year that does not exceed $100 million and has not met the gross income test through transactions with a related person, as defined in C.G.S. Sec. 12-217w.

Table III-18: R&D Non-incremental Guidelines	
Expense Amount	**Credit Percentage/Amount**
$50 million or less	1 percent
More than $50 million but less than $100 million	$500,000 + 2% over $50 million
More than $100 million but less than $200 million	$1.5 million + 4% over $100 million
More than $200 million	$5.5 million + 6% over $200 million
Source: DRS	

Credits may be carried forward until the credit is fully taken. A small business[26] that cannot take the credit because it has no tax liability may exchange the credit for a refund up to 65 percent of the value of the credit.

Research & Experimental. The third R&D credit -- research and experimental -- applies to the incremental research and development expenditures that are incurred in Connecticut. Companies may take 20 percent of the excess research and experimental expenditures in the current year over the costs incurred from the previous year. Credits can be carried forward for 15 years until they are fully taken. Again, small businesses that cannot take the credit because they have no tax liability can exchange the credit for a refund up to 65 percent of the value of the credit.

R&D credit utilization. An increase in the number of credits used is an indication that research and development is occurring in Connecticut and is an important trend to monitor to determine the state's competitiveness in the New Economy. Table III-19 shows the number of R&D credits issued between tax years 2000 and 2006. In 2000, 435 were issued, dropping off for the next five years. In 2006, the number increased to 321 credits but still not at the level seen in 2000.

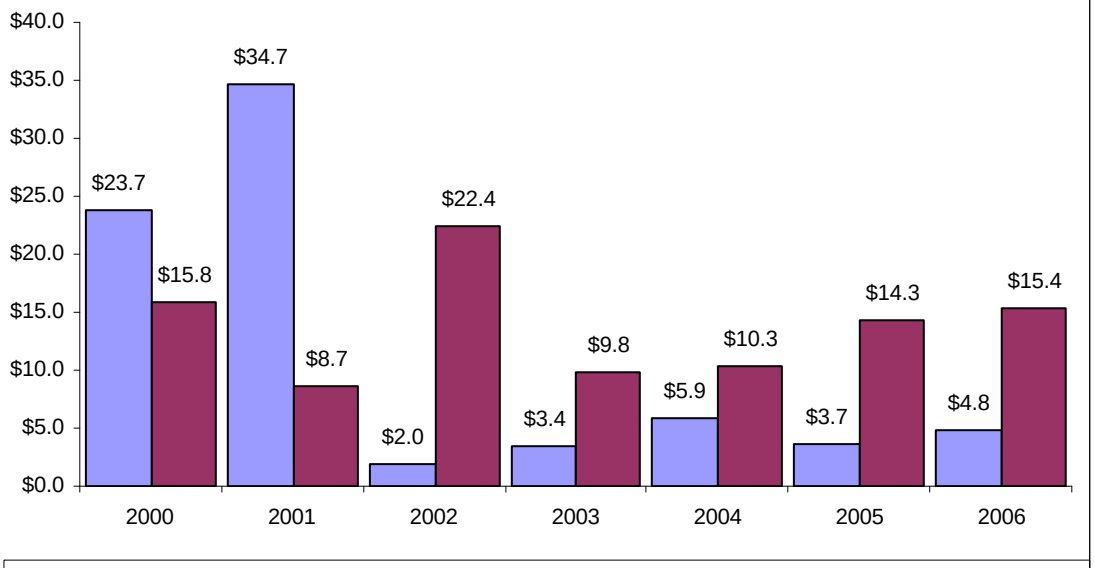
Table III-19: Number of Credits Issued, Tax Years 2000-2006							
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Research & Development Non-incremental	274	183	129	122	134	132	164
Research & Experimental Expenditures	161	100	121	126	149	135	157
R&D for Grants to Higher Ed Institutions	-	2	-	1	1	2	-
Total	**435**	**285**	**250**	**249**	**284**	**269**	**321**
Source: DRS							

The non-incremental R&D credit is particularly important since it signifies *new* R&D investments, which can lead either to new companies or new growth for existing companies. Figure III-3 shows the trend in dollar amounts taken for the two larger R&D credits over the past seven years. As depicted in the figure, the 2006 dollar amount of non-incremental credits is down 86 percent compared to the high achieved in 2001. Even though both the number and value

[26] For the purpose of exchanging credits, a qualified small business means a company that has gross income for the previous year that does not exceed $70 million

of credits issued did increase in 2006 from the year before, it is still lower than it was five to six years ago.

Figure III-3: Connecticut R&D Credits ($ in millions): 2000 to 2006



Source: DRS

Business tax credit analysis. Figure III-4 charts the trends in number of business credits claimed for the tax years 2000 through 2006 and also shows the trend in dollars claimed for the same time period. All the business tax credits indentified in Table III-17 are included in the figure.

The highest number of credits were issued in 2000 and 2001 and the most in terms of dollar value were issued in 2001. In 2006, the dollar amount of credits issued almost approached the 2000 level, but the number claimed was less than 46 percent of those issued in 2001, indicating an increasing value per credit claimed. The program with both the highest number of credits issued and dollar amount is the fixed capital investment credit. It accounts for:

- over 2,300 credits annually;
- 58 percent of the value of all credits issued for 2006; and
- a total of approximately $370 million in credits since 2000.

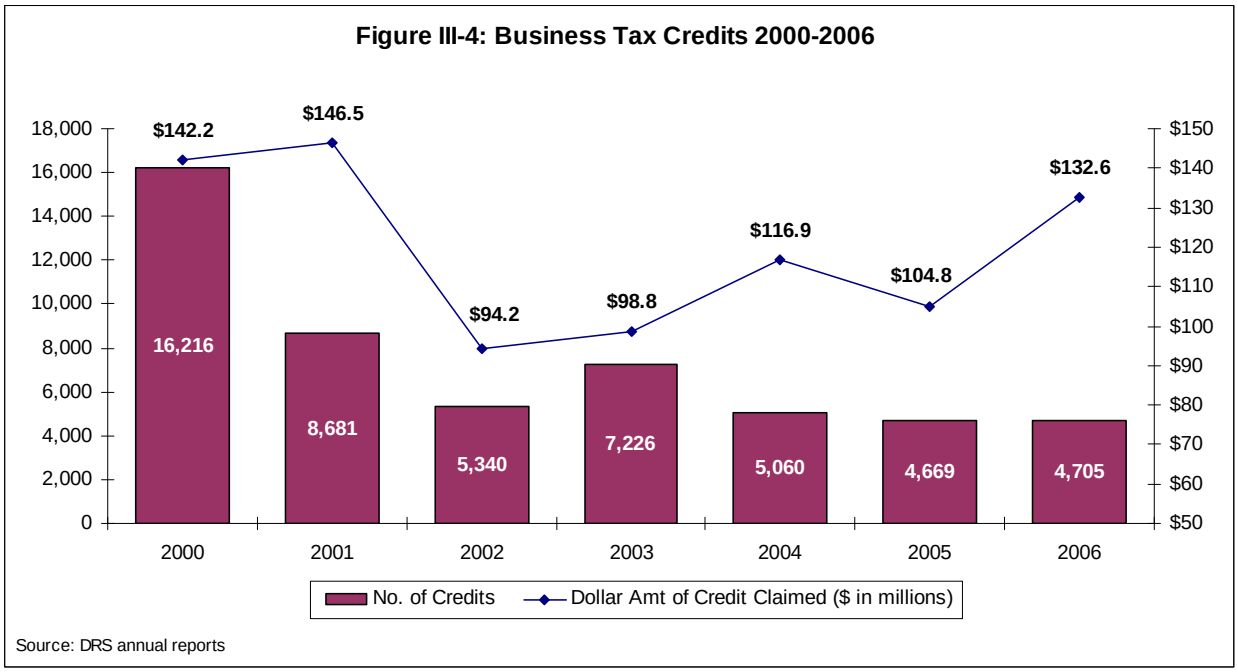


Table III-20 lists the top six credits in terms of dollar amount claimed in 2006 (because of the lag in corporate tax filings, 2006 is the most recent year of tax credit data available).

Table III-20: Largest Business Tax Credits 2006

Credit	No. of Credits	Dollar Amount of Credit Claimed	Average per return
Fixed Capital	2,313	$77,486,450	$33,500
Electronic Data Processing[1]	1,646	$30,295,132	$18,405
Research & Experimental Expenditures	157	$15,352,359	$97,786
Research & Development Non-incremental Expenditures	164	$4,831,443	$29,460
Human Capital	177	$1,692,412	$9,562
Machinery & Equipment	145	$1,052,677	$ 7,260
Total	**4,602**	**$130,710,453**	**$28,402**
All Credits issued in 2006	**4,705**	**$132,562,244**	**$28,174**
% of total	**98%**	**99%**	

[1] Includes credits claimed on the corporate business tax and the insurance business tax

Source: DRS annual report

Department of Economic & Community Development Tax Credits

The following section describes and reviews the usage of the tax credits that are administered by DECD. The credits are against property taxes and/or the corporate income tax liability, which again involves DRS, the state's tax department, but these credits require an

approval or determination by DECD in order to be eligible. Table III-21 lists the five credits offered and the dollar value of the credits that have been issued since 2000.

Table III-21: DECD Tax Credit Programs – Dollar Value of Credits Issued, 2000-2008 ($ in millions)[1]

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Enterprise Zones (including Urban Jobs)	$ 7.0	$ 8.5	$ 7.5	$ 7.9	$ 9.0	$ 7.6	$ 8.4	$ 6.3	$ 6.9
Urban & Industrial Site					$ 40.0	$ 27.0	$ 5.0	$ 100.0	$ 18.0
Job Creation									$ 0.5
Insurance Reinvestment	$ 0.9	$ 2.8	$ 3.6	$ 9.3	$ 6.9	$ 4.6	$ 7.1	$ 10.5	
Total	**$ 8.8**	**$ 11.3**	**$ 11.1**	**$ 17.2**	**$ 54.9**	**$ 39.2**	**$20.5**	**$ 116.8**	**$ 25.4**

[1] Corporate tax data 2000 through 2006; property tax data 2000-2008
Source: DECD annual reports

Enterprise zone credits. The goal of the credit is to increase private investment, expand the tax base, and foster job creation in distressed areas. The credit was established in 1982 with economic activity in six communities qualifying for the credit. The credit availability has been expanded to 17 Targeted Investment Communities[27] with Enterprise Zones, two Enterprise Corridor Zones along Route 8 in the upper and lower Naugatuck Valley, and a third in the northeastern part of the state along Interstate 395.

There are four separate incentive programs that fall under the Enterprise Zone category:

- A five-year, 80 percent abatement of local property taxes on qualifying real and personal property, if the property was new to the grand list as a result of a business expansion or renovation or in the case of an existing building, met the vacancy requirement. The property tax abatement takes effect with the start of the first full assessment year after the issuance of a certificate of eligibility from DECD.

- A 10-year, 25 percent credit on that portion of the state corporate business tax that is directly attributable to a business expansion or renovation project as determined by the Department of Revenue Services. The credit increases to 50 percent if a minimum of 30 percent of the new full-time positions are filled either by zone residents or by residents within a municipality who are eligible for federal Workforce Investment Act (WIA) assistance.

- Another credit is for businesses that operate a manufacturing facility located within an enterprise zone. For businesses that meet the same employment

[27] Targeted Investment Community – a municipality with a designated enterprise zone

criteria as above, a credit of 50 percent can be applied against its corporate business tax. Corporations may claim the credit for 10 years beginning with the first year following the year of certification. If the company does not meet the employment criteria, the facility may still qualify for a 25 percent credit if it is located in a targeted investment community or an enterprise zone.

- Finally, a credit may be applied to newly formed corporations located in an enterprise zone or enterprise corridor that were created on or after January 1, 1997. The credit may be used over 10 years -- in the first three years, the corporation can claim 100 percent of its tax liability, and then it lowers to 50 percent of its liability for the next seven years. To claim the credit the business must meet either of the following criteria:
  - Has 375 employees or more, and at least 40 percent are:
    - residents in the municipal enterprise zone; and
    - qualify under the federal Workforce Investment Act.
  - Has fewer than 375 employees, and at least 150 of whom:
    - are residents of the municipal enterprise zone; and
    - qualify under the WIA to work within a designated Enterprise Zone.

Urban Jobs Program. The Urban Jobs Program is a discretionary program that allows the DECD commissioner to provide enterprise zone incentives in a targeted investment community to companies that are locating and expanding outside of the zone. The approval is based on economic impact and inducement. Companies can get approval for a property tax abatement and a corporate tax credit. When a company is approved by DECD, it works with the town assessor to receive the local property tax abatement and the town in turn works with OPM to receive a reimbursement for the lost property tax from the state.

The benefits to companies, as determined by DECD, include:

- A five-year, 80 percent abatement on local property taxes;
- A 10-year, 25 percent corporate business tax credit to qualified manufacturing businesses;
- For service facilities located outside of an enterprise zone in a targeted investment community, property tax benefits available on real estate and/or equipment, with a minimum investment of $20 million to qualify for a five-year, 40 percent tax abatement increasing to 80 percent for projects greater than $90 million; and
- Corporate business tax credits for qualifying service facilities outside of an enterprise zone in a targeted investment community is on a sliding scale based on new full-time jobs; a minimum credit of 15 percent allowed for service companies creating 300 or more but fewer than 599 jobs; a 50 percent credit for companies creating 2,000 or more jobs; and eligibility period is for 10 years.

Tax credit utilization. Table III-22 shows the trend in the number of enterprise zone and urban job credits claimed and value of the credits from tax year 2000 to 2006. Although the number of credits claimed in 2006 has gone down since 2000, the value of the individual credits has risen.

Table III-22: Corporate Tax Credits: Enterprise Zone and Urban Jobs, 2000-2006

	2000	2001	2002	2003	2004	2005	2006	Total
Credits issued	139	76	10	50	45	38	38	396
Value of credits	$ 1,079,806	$ 674,564	$ 467,145	$ 400,245	$1,869,062	$ 617,235	$ 1,549,934	$ 6,657,991

Source: DRS Annual Reports

Table III-23 shows the property tax abatements authorized through the enterprise zone program and urban jobs program, as well as the number of companies utilizing the credits and the planned number of jobs to be retained and created by the companies obtaining the certificates.

Table III-23: Property Tax Abatements: Enterprise Zone and Urban Jobs, 2000-2008

Year	Total company certificates	Jobs retained	Jobs planned to be created[2]	Enterprise Zone Certs.	Enterprise Zone Corridor Certs.	Urban Jobs Certs.	Other[1] Certs.	Property Tax Reimbursement
2000	103	4,070	2,403	50	13	38	2	$ 5,988,760
2001	92	8,662	7,581	39	18	30	5	$ 7,838,640
2002	72	5,177	4,446	28	9	31	4	$ 7,000,000
2003	63	1,811	995	30	12	16	5	$ 7,454,831
2004	66	2,530	1,074	42	10	13	1	$ 7,085,146
2005	48	1,350	1,149	26	7	12	3	$ 7,046,907
2006	61	2,434	1,476	26	17	12	6	$ 6,858,236
2007	60	2,196	893	26	14	15	5	$ 6,328,289
2008	58	6,297	928	28	13	15	2	$ 6,912,464
Total	**623**	**34,527**	**20,945**	**295**	**113**	**182**	**33**	**$ 62,513,274**

[1] Includes other zones that qualify for the enterprise zone benefits – contiguous manufacturing zone, entertainment district, qualified manufacturing plant, manufacturing plant zone, and railroad depot zone.
[2] These are the number of jobs the company said would be created when the application was submitted – not the actual number of jobs created.

Source: DECD

Urban and Industrial Site Reinvestment Credit. This credit is available to companies that locate or expand in Connecticut and make investments in eligible urban reinvestment projects or eligible industrial site investment projects. Investment in an eligible urban site is defined as one that will add significant new economic activity, increase employment in a new facility, and generate significant additional tax revenues to the municipality of the state. Eligible industrial site investments include purchase of real property or improvements to real property, located within Connecticut that have been subject to environmental contamination.

The credit is equal to 10 percent of the qualified investments, beginning three years after the investment is made but not later than seven years from the date of investment. For years eight

through ten, the credit increases to 20 percent of the invested amounts. The credit may be claimed against various business taxes including but not limited to: the corporate business tax; insurance, hospital and medical services corporations tax; utility companies tax; and air carriers tax. The tax credit may be carried forward for the five immediate succeeding years until the full tax credit has been taken or may be assigned to another taxpayer.

The credits are performance-based (hence the 3-year wait before credits are issued) and distributed over a 10-year period. The program is designed to be revenue neutral or positive to the state and the credits are only awarded after the business has made its investment. If the business does not meet the performance requirements, such as tax revenue generation, job creation and retention targets, it does not get the credits.

Table III-24 lists the companies that have received the Urban and Industrial Site Reinvestment credits since 2004. A total of six companies have been issued credits for a total of $190 million.

Table III-24: Urban and Industrial Site Reinvestment Tax Credits – Authorized Credits*

	2004	2005	2006	2007	2008
Diageo North America, Inc.	$40 million				
FactSet Research Systems, Inc		$ 7 million			
Lowe's Home Centers, Inc.		$ 20 million			
Epppendorf Manufacturing Corporation			$ 5 million		
Greenwich Capital Markets, Inc				$ 100 million	
Blue Sky Studios, Inc.					$ 18 million

*Year when the contract was signed, not necessarily when the investment was initially made

Source: DECD FY 2008 Annual Report

As illustrated in Table III-25 the credit is spread out over seven years and thus the budgetary impact of the credit occurs over time.

Table III-25: Estimated Credit Distribution Schedule ($ millions)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Diageo	$ 4	$ 4	$ 4	$ 4	$ 8	$ 8	$ 8	-	-	-	-
FactSet	-	$ 1	$ 1	$ 1	$ 1	$ 1	$ 1	$ 1	-	-	-
Lowe's		$ 2	$ 2	$ 2	$ 2	$ 4	$ 4	$ 4	-	-	-
Eppendorf					$ 1	$ 1	$ 1	$ 1	$ 1	$ 1	-
Greenwich		-	-	$ 10	$ 10	$ 10	$ 10	$ 20	$ 20	$ 20	
Blue Sky	-	-	-	-	$ 1.8	$ 1.8	$ 1.8	$ 1.8	$ 3.6	$ 3.6	$ 3.6
Total	**$ 4**	**$ 7**	**$ 7**	**$ 17**	**$ 23.8**	**$ 25.8**	**$ 25.8**	**$ 27.8**	**$ 24.6**	**$ 24.6**	**$ 3.6**

Source: DECD FY 2008 Annual Report

Job Creation Tax Credit. This tax credit (C.G.S. Section 12-217ii, as amended by P.A. 07-250) is available to businesses that create at least 10 new full-time jobs. The credit is approved by the DECD commissioner if it is determined that the creation of the jobs would not occur without the credit, and the economic opportunities created in the state exceed the credit amount. The credit is applied against the insurance premium, corporation, and utility company

taxes and is allowed for the income year during which the worker completes the first 12 months of employment with the taxpayer. The credit value allowed is an amount up to 60 percent of the Connecticut income tax deducted and withheld from the wages of new employees and begins on or after January 1, 2007. For each new employee hired after that date, credits may be granted for five successive income years. The act limits the total amount of credits for all companies awarded in any one fiscal year to $10 million. Credits must be taken in the income year in which they are earned and unused credits expire.

Since this program was created, only one company has been issued a credit, Sparta Insurance, in the amount of $508,711 which will be distributed over a five-year period based on the creation of 30 jobs; or approximately $17,000 per new job created.

Insurance Reinvestment Tax Credit Program. Created in 1994, the Insurance Reinvestment Act was intended as a way to leverage private investment in insurers and other businesses providing insurance related services. At the time, large insurance companies were consolidating their operations and laying off workers. The intention of the legislature was to help the insurance companies keep jobs by generating the capital needed to start or expand insurance businesses that would subsequently reemploy these workers.

In order for investments to qualify for a credit, they must be made through the following approved Connecticut-based fund managers:

- Conning & Company;
- Dowling & Partners;
- Northington Partners;
- Prospector Partners, LLC;
- Schupp & Grochmal, LLC; and
- Stamford Financial Group (has not been active in the program).

The act authorizes investors in the fund to apply the credit to any of the following tax liabilities:

- Insurance company, hospital, and medical services corporation taxes;
- Healthcare center tax;
- Corporate business tax;
- Income tax; and
- Surplus line tax.

People and businesses investing through the approved funds in a company may claim the credit if the company: 1) is engaged in insurance or insurance related activities; 2) occupies a facility that has been vacant for one year or obtains a new facility and 3) increases employment by 25 percent. The company meets the latter criterion if the new employees it hires to fill these jobs comprise 25 percent of its workforce over 10 years. If it is a new company that is being started, the company must only employ one person to meet the 25 percent criteria. Each year, the

DECD Commissioner must determine whether a company meets the three criteria and if it does, DECD issues a certificate of continued eligibility. Once the certificate is obtained, the investors may claim a portion of the tax credit allowed for that year.

By law, this program is not revenue neutral. In other words, the potential impact of investments on state revenues cannot be considered as part of the credit approval criteria. The commissioner of DECD must annually determine whether the company met the three criteria in statute. If it did, the commissioner issues a certificate of continued eligibility which allows the investors to claim the portion of the credits the law authorizes for that year.

In an effort to lessen the revenue impact to the state, the legislature has made various changes to the provisions of the credit program. In 1997, the legislature limited the amount investors could claim to $15 million per investment made by a fund manager in a single company. P.A. 00-170 limited the credits to investments made through funds that were created before July 1, 2000 and P.A. 01-6 June Special Session eliminates the credits for investments after December 31, 2015. Investors who were awarded credits before that date could continue claiming them under the statutory schedule. P.A. 08-82 redefines "insurance business" to limit the number and type of businesses eligible for investments through the Insurance Reinvestment Fund program. Several attempts have been made to repeal the credit (including some by DECD) but the bills have not made it out of committee.

Insurance Reinvestment Tax Credit Program Portfolio. The portfolio is composed of investments made by the approved fund managers in insurance and related businesses. As of June 30, 2008, the amount of money available in the funds to be invested totaled $788 million. Of that amount, $187 million has actually been invested in 22 companies and could potentially be claimed as tax credits. They are 'potential' because they may not yet have been claimed or earned (for example, the company has not met the job requirement or the company went out of business and therefore a credit cannot be earned).

As of December 31, 2008, $116 million of investments met the criteria and the fund managers received from DECD a certificate of continued eligibility which allows the investors to claim the tax credits. Table III-26 summarizes the most recent job figures available – number of jobs at application (623), current number of jobs (751), and the number actually created (128). Table III-27 shows the amount of credits claimed by type of tax – corporate, insurance or personal – and the total amount taken over the years, slightly more than $52 million dollars. Based on the number of net jobs created and the amount claimed in credits, it has resulted in a cost to the state of approximately $406,000 per job.

Table III-26: Employment based on Insurance Reinvestment Program as of December 31, 2008	
Current number of jobs	751
Jobs at application	623
Number of jobs created	128
Source: DECD	

Table III-27: Tax Credits Claimed Under the Insurance Reinvestment Act (1999 through 2007)			
Income Year	Tax Type	Number of Credits Approved	Amount of Credit Claimed
1999	Corporate Business	1	$8,281
2000	Corporate Business	6	$6,210
2001	Corporate Business	3	$128,403
2002	Corporate Business	2	$36,550
2003	Corporate Business	4	$334,040
2004	Corporate Business	3	$314,773
2005	Corporate Business	1	$159,615
2006	Corporate Business	5	$2,165,750
TOTAL		**25**	**$3,153,622**
Calendar Year	Tax Type	Number of Credits Approved	Amount of Credit Claimed
1999	Insurance Premium	9	$515,873
2000	Insurance Premium	8	$930,393
2001	Insurance Premium	14	$2,696,054
2002	Insurance Premium	13	$3,575,086
2003	Insurance Premium	19	$9,013,128
2004	Insurance Premium	13	$6,555,799
2005	Insurance Premium	15	$4,488,722
2006	Insurance Premium	24	$4,908,110
2007	Insurance Premium	29	$10,488,076
TOTAL		**144**	**$43,171,241**
2004	Personal Income Tax	Less than 10	$1,053,731
2005	Personal Income Tax	Less than 10	$1,010,570
2006	Personal Income Tax	Less than 10	$2,012,000
2007	Personal Income Tax	Less than 10	$1,600,700
TOTAL			**$5,677,001**
Total Credits Claimed			**$52,001,864**
Source: Department of Revenue Services			

Commission on Culture and Tourism Credits

In addition to the tax credits outlined above, beginning in FY 06, the state has established a film tax credit program aimed at spurring film production and related activity in Connecticut. The program was administered through the Commission of Culture and Tourism, but the 2009 legislative session transferred the program administration to DECD. Also, the recently adopted state budget modified the film tax credits to emphasize Connecticut-based operations, but it placed no overall cap, and the credits are still transferrable from the companies that incur the expenses to other companies that can use the credits against their tax liabilities to the state. For example, the credits may be transferred to insurance companies that can use them to lower the premium taxes owed to the state.

Digital animation production. This tax credit is available for digital animation production activity in the state for income years beginning on or after January 1, 2007. Production expenses or costs in excess of $50,000 are eligible for a credit equal to 30 percent of

the production expenses or costs. The aggregate amount of all tax credits that may be reserved cannot exceed $15 million in any one fiscal year.

Film production. Any eligible production company incurring qualified production expenses over $50,000 is eligible for a tax credit of up to 30 percent of such costs, and can be carried over from year to year. Applications for a tax credit voucher until recently were to be made to the Commission on Culture and Tourism (CCT) within 90 days after the first production expenses and costs are incurred and within 90 days after the last production expenses and costs are incurred. Unused credits may be carried forward for three succeeding income years or sold, assigned or transferred in whole or part no more than 3 times.

Film production infrastructure. Beginning in January 2007, digital median and motion picture industry projects approved by the Connecticut Commission on Culture and Tourism (now it will require DECD approval) that require capital investments such as buildings, facilities, or installations are eligible for a tax credit ranging from 10 to 20 percent based on the cost of the project. Unused credits can be carried forward for three succeeding years or assigned to another taxpayer.

Film credit usage. The usage and the amounts of credits authorized by CCT (will now be DECD authorization) is shown in Table III-28. It is probably too early to determine whether the decrease in 2009 actually indicates a drop in usage, or is just due to lag time on when vouchers may be submitted after expenses are incurred.

The Department of Revenue Services is the agency that reports on actual credit amount claimed against taxes. DRS reports claims of $42.7 million against the insurance premium tax for film credit usage in FY 07, but because of lags in corporation tax filings, nothing has been reported for film credit usage in that area yet.

Table III-28. Film Tax Credit Authorized FY 06 –FY 09

	2006	2007	2008	2009	Total
Number of credits	9	37	25	2	73
Tax Credit Amounts	$13,924,729	$80,438,613	$29,987,522	$65,775	$124,416,639

Source: Connecticut Commission on Culture and Tourism

TAX EXEMPTIONS

Connecticut also has a number of tax exemptions in place that are designed to lessen the tax pressure on businesses in certain areas. A number of these exempt certain businesses from paying local property tax, and the state, through the Office of Policy and Management, reimburses towns for a portion of the exemptions.

Property Tax Exemptions

- The distressed municipalities tax program provides a five-year state reimbursement of a portion of the property tax loss certain towns sustain as result of property tax exemptions to qualified facilities. Manufacturing facilities if located in one of 39 towns designated as "distressed," are eligible for a reduction of 80 percent of their property taxes, while service facilities, not engaged in manufacturing are eligible for property tax reductions, depending on the amount invested in the facilities. The DECD commissioner must certify the type of facility and that the property is located in a designated municipality or zone. The state reimburses eligible towns for up to 50 percent of revenue lost. General Fund monies for this program have been between $7 and $8 million each year.

- Connecticut allows an exemption of 100 percent of local property tax on qualified, newly acquired manufacturing machinery and equipment. Companies receive the exemption for five years, and equipment eligible for exemption may be used in manufacturing, biotechnology, and the motion picture and film industry. The state's payment in lieu of taxes (PILOT) program, administered by the Office of Policy and Management, provides 80 percent reimbursement of lost revenue to the towns. In FY 08, approximately 4,200 businesses received exemptions, and the state reimbursed 209 towns for approximately $42 million. FY 10 and FY 11 proposed appropriations for this program had been at about $105 million annually, but the recent budget reduced those amounts by $31.8 million and $42.7 million respectively for each of the next two years.

Sales and Use Tax Exemptions

With sales tax exemptions, the state gives up or forgoes the revenue it would have realized if that activity or purchase were not exempt. It is therefore somewhat difficult to calculate what the actual revenue would have been collected on the exempted activity. The Office of Fiscal Analysis does provide estimates in its annual Tax Expenditure Report.

Business purchase exemptions. In total, there are 28 exemptions from the sales and use tax that apply to purchases of items and equipment by businesses. The total amount of forgone revenue is estimated at $188 million for FY 09, with the sales tax exemption on parts and machinery use in manufacturing being the largest at $110 million. Other large exemptions from sale tax are for commercial vehicles used in interstate commerce ($12 million) and aircraft parts, repairs and replacement parts, and machinery ($6 million).

Business service exemptions. In addition to actual items and products, some services that businesses purchase are also exempt from sales and use tax. Connecticut exempts 24 such services, with a total estimated worth of $152 million for FY 09. The exemption with the greatest value to business is the purchase of computer and data processing services ($64 million); renovation and repair for residential property ($21 million); and advertising ($20 million).

Summary of Preliminary Findings: How Much Did We Do

- Both DECD and CDA primarily operate under old economic models where the agencies act as lenders, and financial assistance is primarily loans.

- This financial assistance is targeted primarily as incentives to retaining businesses in or attracting businesses to Connecticut, and not to start-up companies.

- Much of DECD and CDA financial assistance does not appear to be directed to industry clusters areas.

- Comparatively, DECD and CDA funding is much greater than funding to CII for technology and small start-up companies.

- The legislature at times creates programs and authorizes bond money, but bond funding for programs is not always allocated, especially in the case of CII.

- Efforts to ensure accountability for those receiving financial assistance require detailed reporting from businesses and both DECD and CDA – performance measure is primarily on job numbers, but those are not reported consistently.

- Connecticut has been improving in the number (and value) of federal grants approved for small companies conducting research, but the state does not provide much in the way of matching grants.

- The federal Small Business Administration provides loan guarantees to small businesses, typically in the service or retail industry. Due to the recession, the number of loans guaranteed and the total amount of loans has dropped over the last two years.

- Connecticut offers a number of tax credits that businesses may use to reduce taxes owed to the state, primarily in corporate income tax or insurance premium tax, but the number of tax credits claimed has decreased significantly since the early part of the decade. However, total dollar amounts claimed, which also had dropped, have returned to higher, earlier levels.

- The fixed capital tax credit is the most used and has most value to businesses, accounting for about half of all the tax credits used, and about 58 percent of the total value in 2006, $77.5 million out of $132.6 million. The new film tax credit, initiated in 2006 has also been widely used; 73 credits worth more than $124 million have been authorized.

- Broader tax exemptions on sales and use tax and property tax also appear widely used, according to OFA estimates.

Section IV

How well are we doing?

Section III discussed in quantifiable terms *how much* the state is doing to enhance the state's economy. And while *how much* may be a measurable component, *how much* is not the only, or most important, factor in what makes an effective economic development model. As outlined in Section I, improving a state's economic competitiveness cannot rely on a single strategy left to one state agency or program, but rather depends on a framework of policies with an overall goal of state economic growth and increasing prosperity for its residents. The very fact that the strategy should be an interconnected one makes it much more difficult to quantify.

Also difficult to quantify in "how well are we doing" are the collaborative and cultural aspects necessary for innovative economic strategies to be implemented. Connecticut has begun to develop this culture and structure that weaves economic development throughout government and beyond, but a great deal of what we do, how much we do and how we do it is still based on an older organizational model. While these cultural and attitudinal issues are difficult, if not impossible, to quantify, concerns expressed in interviews with program review staff describe some of the symptoms of this culture, such as:

- overly bureaucratic and risk averse in nature;
- hamstrung by rules and reporting that often hamper the economic development objectives;
- legislatively mandated programs that restrict how assistance can be provided, and limit economic development agencies to roles of lenders and portfolio managers;
- an attitude of turf protection and unwillingness to collaborate and coordinate with "partners" outside of government;
- an indifference to businesses and companies already located in Connecticut;
- assistance provided to companies only if they threaten to leave;
- no overall strategic plan that addresses where Connecticut is headed or where the state will focus its efforts (Note: state economic strategic plan released on September 16, 2009); and
- a regulatory structure that is burdensome, time-consuming, unpredictable, and punitive, and one that business receives no assistance in navigating.

Each of these claims is difficult to verify, but together they create a reputation of Connecticut as a state that is "not business friendly." This is borne out in some of the ratings of states' competitiveness, where Connecticut ranks poorly against other states in government and

fiscal policy or regulatory environment[37] (see Appendix C for a full listing of competitiveness reports and rankings). Many of these rankings tend to focus on competitive measures where Connecticut also tends to fare poorly. For example, the cost of doing business in Connecticut is higher than most states because the wages are historically high, energy costs are about two-thirds greater than the nationwide average, and benefit costs for health care, workers' compensation, and the like are also very high. Thus, Connecticut will probably not succeed in pursuing a strategy built on lower costs.

Instead, following the state strategy for innovation economic development advocated in Section I, Connecticut should target and capitalize on the features that have been the state's traditional strengths. However, a critical assessment of what factors are needed in this innovation economy, and how the state stacks up comparatively, is needed. What may have been the state's perceived strengths may have slipped comparatively due to: lack of attention; population or other demographic changes; or other states making improvements.

Assessments and benchmarking provide diagnostic tools, and while these tools are used to rate many measures of the state's economy fairly frequently,[38] program review staff find there is no one in state government responsible for analyzing the diagnosis and developing the best treatment. Analysis is necessary to determine what the ratings indicate and what they mean for the state's present and future economic competitiveness, and should form the basis of what corrective measures are needed to recover lost ground and improve the state's competitiveness. As the state strategy for the innovation economy suggests, this requires collaboration and sustained effort.

Measuring success in the New Economy. Assessing Connecticut's progress in the New Economy requires a different approach than has previously been taken. Benchmarking based on number of jobs created or retained only provides a narrow view of the state's economic health, and especially if examined only in terms of businesses that received state assistance. While job creation and retention is one measure, looking at that number alone does not reveal the state's entire economic picture or project it for the longer term. Connecticut should begin measuring its competitiveness in the knowledge economy by looking at a broader, longer-term set of metrics, and not just the traditional ones, like jobs and taxes.

Program review staff identified several states that measure themselves using an innovation scorecard, including Massachusetts, Maine, and Oregon,[39] and developed a scorecard based on many of the factors those states use to evaluate their innovation components. This assessment, labeled the Connecticut Innovation Scorecard, is presented in Figure IV-1.

[37] Beacon Hill Institute Annual State Competitiveness Report has ranked Connecticut 42 or 43 in government and fiscal policy and Forbes' Ranking of States' Business Costs places Connecticut 40 though 43 in regulatory environment, depending on the year.
[38] CERC and Northeast Utilities
[39] Massachusetts 2008 Index of the Innovation Economy, Maine Innovation Index, Oregon Innovation Index 2007, and John Adams Innovation Institute.

Committee staff used the same 10 states[40] that Massachusetts used for comparison in its 2008 innovation index report, as those were identified as leading technology states.

The Connecticut Innovation Index comprises 30 indicators that measure Connecticut's economic capacity and ability to compete in the high-technology and innovation-driven economy. Staff used the most recent data available for the measures in comparative rankings as well as the one-year and five-year trends. In some cases, the data are very recent, while in others they may be several years old. The year of the most recent data is listed in the index measure. For definitions of the measures and sources used to formulate the index see Appendix D. The indicators are organized into six groups:

21. Research and Development Capacity
22. Innovation Capacity
23. Employment
24. Overall Economy
25. Education Capacity
26. Connectivity Capacity

In addition to the scorecard itself, committee staff provides a brief summary of each of the six assessment areas, including: a description of what makes that component of the innovation scorecard important; some of the background of how Connecticut is doing in that category; additional comparative information; and the category's strengths and challenges for the state.

[40] California, Connecticut, Illinois, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Pennsylvania, and Virginia

Figure IV-1: Connecticut Innovation Index, 2009

CONNECTICUT INNOVATION INDEX 2009
Indicator Performance Summary

INDICATOR	1 YEAR TREND	5-YEAR TREND	NATIONAL RANK[1]	RANK[1] COMPARED TO COMPETITORS
RESEARCH AND DEVELOPMENT CAPACITY				
R&D Intensity[a] (2006)	▼	▲	6	2
Total R&D Performance (2006)	▲	▲		
Industry R&D Performance (2006)	▲	▲		
Academic R&D Performance (2006)	▲	▲		
Federally Funded R&D Centers (2006)	N/A	N/A		
State R&D Tax Credits ($millions) (2006)	▲	▼		4
Federal EDA[2] funding (2007)	▼	▼	53	10
INNOVATION CAPACITY				
SBIR/STTR Funding (2008)	▲	▼	18	8
SBIR - % awarded to proposals (2008)	▲	▲	15	7
Venture Capital per $1,000 GDP (2008)	▼	▼	16	10
Patents Issued per capita (2008)	▼	▼	8	4
Entrepreneurial Activity (2007)	▲	▲	32	9
EMPLOYMENT				
High Technology Employment - % Change (2004)	▼	▲	11	5
High Tech Share of all Business Establishments (2004)	▼		17	7
Percent Workforce in S&E occupations (2006)	▼		8	3
OVERALL ECONOMY				
Real Gross State product (2000 $) % Change (2008)	▼	▲	40	10
Real Per Capita GDP (2008)	▼	▲	2	1
Population Growth & Migration (2009)		▲		9
Total Exports (2008)	▲	▲	25	3
Exports as % of GDP (2008)	▼		30	5
EDUCATION CAPACITY				
Math Skills of 8th Grade Students (2007)		▼	28	7
Science Skills of 8th Grade Students (2005)		▼	20/44	5/8
Higher Education Enrollment among young people - chance for college by age 19 (2008)		▲		3
Higher Education 18-24 year olds (2007)		▼		
S&E[3] Graduate Students per 1,000 25-34 yr olds (2005)		▲	4	2
S&E Doctorates Awarded per capita (2006)	▲	▲	8	3
Education Attainment - % of Population 25 and Older with Bachelor's Degree or More (2007)	▲	▲	5	2
CONNECTIVITY CAPACITY				
Household Connectivity (percent) (2007)	▲	▲	7	2
Residential High Speed Internet Access (2006)	▲	▲		
Classroom Connectivity (2008)	▲	▲		3

Sources: See Appendix D

**Years in parenthesis at the end of each category represents the most recent year of data available

[1] Rankings & trend data included when available; competitor rank out of 10 and national rank out of 50 unless otherwise noted

[2] Federal Economic Development Agency

[3] S&E - Science and Engineering

Research & Development

Connecticut has a high R&D intensity (measured by total federal R&D dollars per gross domestic product) led by strong industry based research.

Performance Summary (5 yr):

R&D Intensity: ▲
State R&D Tax Credits: ▼
Federal EDA funding: ▼

Why is it important?

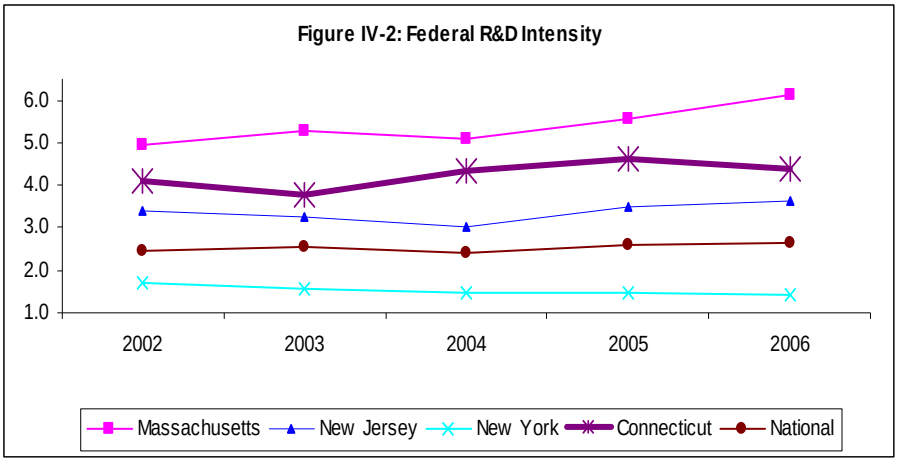
Innovation and discovery of new ideas requires firms, universities, and entrepreneurs to invest in research and development (R&D). Research and development adds to the knowledge base of the region and is essential to long-term growth. R&D spending at universities creates opportunities for partnerships between education and industry that can translate into higher retention of talented individuals and companies, creation of new companies, and long-term growth.

Strengths

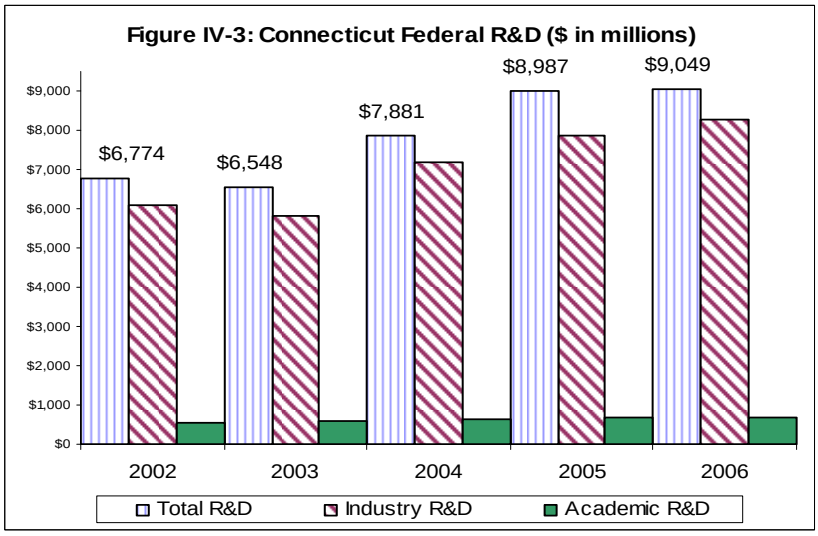
- Federal funding for industry research and development has consistently been a strength in Connecticut. **90 percent of Federal R&D money into the state goes to industry.**
- R&D funding has increased each year for the past five years.
- R&D tax credits, often cited as a plus for business, rank 4th among competitor states in terms of credits issued per GDP.

Opportunities for Improvement

- **Connecticut remains weak on higher education research and development**; only 8 percent of total federal R&D money into the state.
- **Rank 53rd (last) in Federal EDA funding** – While not targeted specifically at R&D, this rank indicates a lack of initiative and competitive drive to obtain federal funding for economic development.



- Connecticut has a strong R&D intensity (ratio of total R&D to the state GDP) compared with competitor states. However the trend has remained relatively flat and is driven by industry.



Innovation Capacity

Connecticut does not fare well in a number of measures that assess innovation capacity such as venture capital per GDP.

Performance Summary (5 yr):

SBIR: ▼
Venture Capital: ▼
Patents: ▼
Entrepreneurial: ▲

Why is it important?

This index measures the extent to which innovation, intellectual property, and promising ventures are created in the state – through patents, amount of entrepreneurial activity, venture capital into promising companies, and federal support for new innovative ideas through SBIR funding. Strong entrepreneurial activity within a state demonstrates an environment and economy that supports the efforts to start and grow businesses.

Strengths

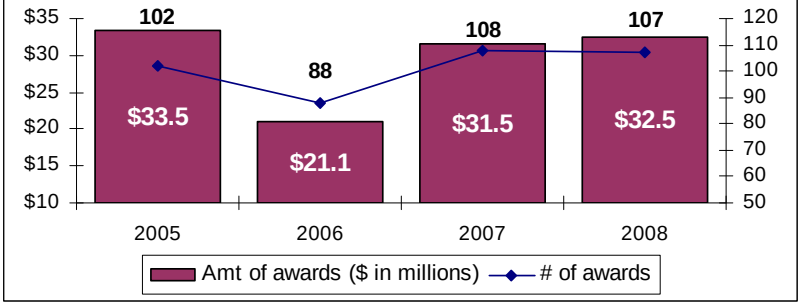
- **SBIR funding to Connecticut improved slightly (3.2 percent increase)** in 2008 – $32.5 million from $31.5 million in 2007. The number of awards declined from 108 in 2007 to 107 in 2008, but the dollar value increased.
- Connecticut's success in receiving grants as a percent of applications has also increased from about 15 percent in 2005 to 19 percent in 2008.
- Compared to other states, Connecticut does well in patents issued per capita. For the four-year period between 2004 and 2008, Connecticut had 213 patents per capita, placing CT 8th nationwide and 4th in the leading technology states group.

Having the capacity to use the internet facilitates knowledge dissemination, communication, collaboration, and the ability to participate directly in innovation

  - Between 2003 and 2007, residential internet connectivity in CT increased 150 percent.
  - 81.3 percent of CT students have access to computers; ranking 3rd among comparative technology states in 2008.

- SBIR funding: When amount of awards are measured against state GDP, **Connecticut ranks 15th nationwide** in the most recent comparative period (2003-2005); at $164 per $1 million of GDP, *only slightly above the national average of $161*.
- In the 10-state comparative group CT ranks 4th, but well behind the top state, Massachusetts, which obtains $824 for each $1 million of state GDP.

Figure IV-4: CT SBIR Awards 2005 to 2008



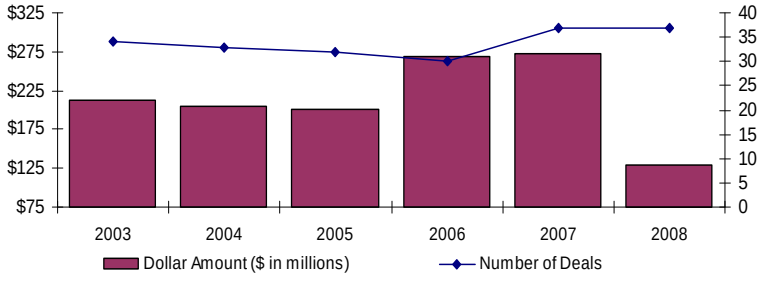
Opportunities for Improvement

- **Patents**: **A downward trend**. Between 2007 and 2008, the number declined just by 16 from 1611 to 1595, but between 2003 and 2008, the drop was substantial from 1844 to 1595 (14 percent decline).

- Although entrepreneurial activity rates (see Appendix D for how this is calculated) have increased in the past five years, **Connecticut lags the national average in per capita entrepreneurs** – 300 in Connecticut versus 320 per 100,000 people in the nation.

In both the one- and five-year trends, **Connecticut companies have seen a decrease in investments from venture capital**. Connecticut experienced a dramatic (about 60 percent) drop in venture capital investments between 2007 and 2008, by far the biggest drop compared to other states.

Figure IV-5: Connecticut Venture Capital Investments



Source: PricewaterhouseCoopers MoneyTree Report

Compared to competitor states, Connecticut ranks near the bottom for venture capital investments per $1,000 in GDP.

Table IV-1: Venture Capital per $1,000 in GDP, 2006-2008 (10 comparative states)

	2006		2007		2008	
	Amt	**Rank**	**Amt**	**Rank**	**Amt**	**Rank**
MA	$8.85	1	$10.45	1	$8.26	1
CA	$7.34	2	$8.16	2	$7.60	2
MN	$1.37	5	$1.92	3	$1.88	3
NJ	$1.85	3	$1.34	6	$1.39	4
PA	$1.53	4	$1.44	4	$1.22	5
NY	$1.22	7	$1.02	9	$1.20	6
VA	$1.17	8	$1.41	5	$1.15	7
NC	$1.10	9	$1.29	7	$1.06	8
IL	$0.61	10	$0.88	10	$0.70	9
CT	$1.34	6	$1.28	8	$0.60	10

Source: PricewaterhouseCoopers MoneyTree Report

Employment: High Technology and Science & Engineering

Connecticut ranks low compared to its competitor states in terms of percent of workforce employed in the high tech industry and has seen a drop in scientists and engineers in the workforce between 2005 and 2006 (most recent data).

Performance Summary (1 yr):

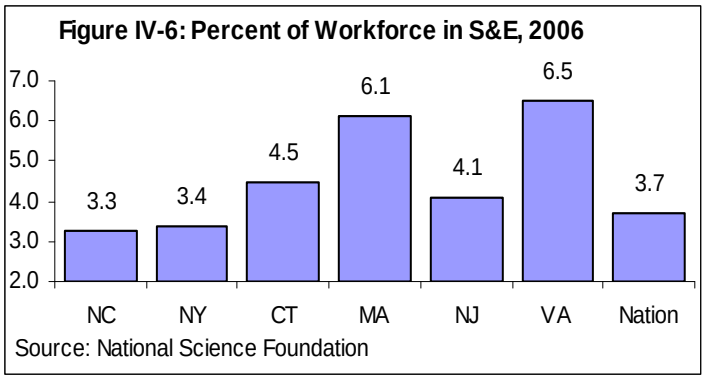
High-tech employment: ▼
High-tech business: ▼
S&E workforce: ▼

Why is it important?

The metrics under this indicator show Connecticut's ability to sustain and grow an innovation-based economy. Knowledge workers are at the center of an innovation economy and scientists and engineers are often the professionals that spearhead innovation.

Strengths

- **4.5 percent of Connecticut's workforce is in science and engineering occupations – higher than the national average.**

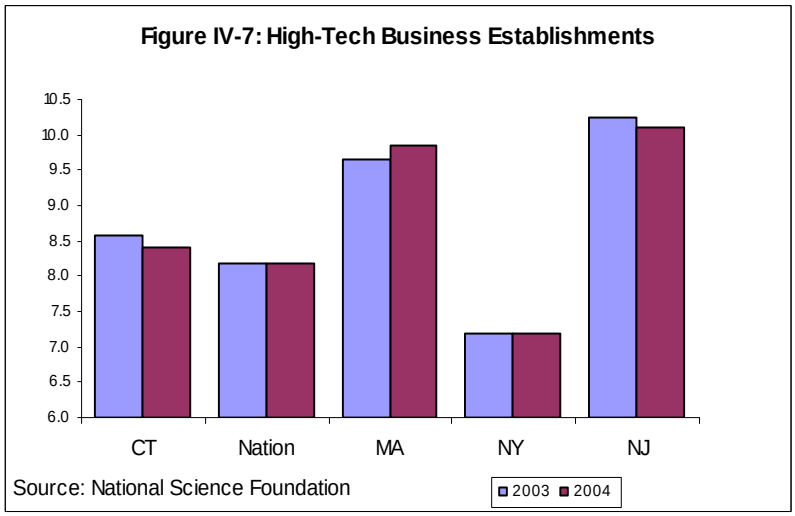


- **Compared to the nation, Connecticut has a larger percentage of high-tech employers.**

Table IV-2: High Tech Businesses				
		High Tech Businesses	**All Businesses**	**% of Total**
2003	CT	7,827	91,207	8.6%
	Nation	590,417	7,223,240	8.2%
2004	CT	7,794	92,710	8.4%
	Nation	603,642	7,366,978	8.2%
Source: National Science Foundation (most recent available data)				

Opportunities for Improvement

- While the nation as a whole saw no change in **high tech establishments** between 2003 and 2004 **Connecticut saw a decrease.**
- Massachusetts was the only competitor state that experienced an increase.



- **Connecticut saw a decrease in employment** (13,455 fewer employed) between 2003 and 2004 (most recent national data) – with 40 percent of the loss in employment in high-technology establishments.

Overall Economy
Per capita real GDP is still the highest in the nation and Connecticut's current unemployment rate remains below the national average. However, there has been little to no long-term job and population growth.

Performance Summary (5 yr):

Real per capita GDP: ▲
State GDP: ▲
Population growth: ▲
Job Growth: ▼

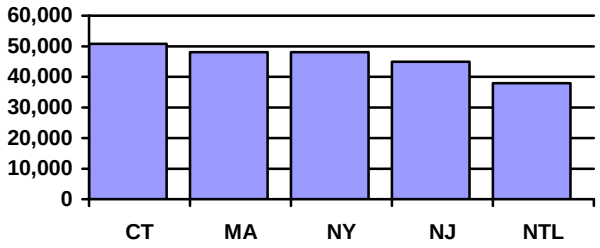
Why is it important?

Population, employment, and income growth are gross economic measures of the prosperity of a state and are generally considered output, or resulting from other indicators in the economy like an educated and productive workforce, and a growing population. These measures are important barometers of how well the state is doing.

Strengths

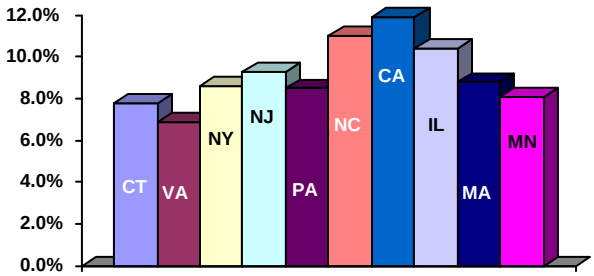
- While Connecticut's **per capita real GDP** declined in 2008, it **still was the highest in the nation** (excluding D.C.) The figure below shows the 2008 per capita GDP compared to the neighboring states and the national average; Connecticut is still about $2,000 higher than Massachusetts.

Figure IV-8: 2008 Real GDP per Capita



- **CT's 2009 unemployment rate is less than many other states** - as of July 2009, 7.8 percent - below the national average of 9.4 percent. CT ranked 19th, but several states had identical unemployment rates, and thus the rate of 7.8 percent was 11th. Of the states in the comparison group, only Virginia's rate was lower at 6.8 percent.

Figure IV-9: Unemployment Rate, as of July 2009



Opportunities for Improvement

- **Per capita real GDP** (in year 2000 dollars to account for inflation) **declined in 2008 from 2007**. In 2008, CT per capita GDP was $50,758, down from $51,139 in 2007. Connecticut was one of 12 states to experience a decline in real per capita GDP; and overall Connecticut ranked 40th in the percentage growth in GDP between 2007 and 2008.
- While Connecticut's GDP increased in current dollars from about $212,252 billion in 2007 to $216,174 billion in 2008, (about 1.8 percent), when real gross domestic product is examined, Connecticut does not fare as well. **In 2008, CT real GDP (in year 2000 dollars) fell by 0.4 percent from 2007**.
- **Connecticut has had very little population growth** – 1.0 percent between 2004 and 2009. Compared with the other states in the comparative group Connecticut ranked 9th (tied with Pennsylvania). Only Massachusetts had less increase in population at 0.9 percent. North Carolina was 1st (9.3 percent) and Virginia 2nd (5.3 percent), and these were the only states in the comparative group that did **not** experience a net migration to other states. The other states experienced limited growth through foreign in-migration and natural growth (fewer deaths than births).
- Connecticut incomes are high by any measure – per capita income, real GDP per capita, or annual average wage. Whether that is a deterrent to job growth is an area of concern. While some reports indicate little or no job growth in Connecticut, it depends on the period measured. If measured **since 2000, Connecticut has seen no job growth**, but if measured since 2005, CT's job growth as of 2008 was 2.6 percent, which placed the state 19th and higher than the national average. Of course, those figures do not take into account the job losses of the most recent recession.

Education Capacity

By some educational measures, Connecticut appears to be doing well, while others indicate a cause for concern.

Performance Summary (5 yr):

Math & Science skills: ▼
Chance for College: ▲
Higher Ed Enrollment: ▼
Science & Engineering measures: ▲
Education Attainment: ▲

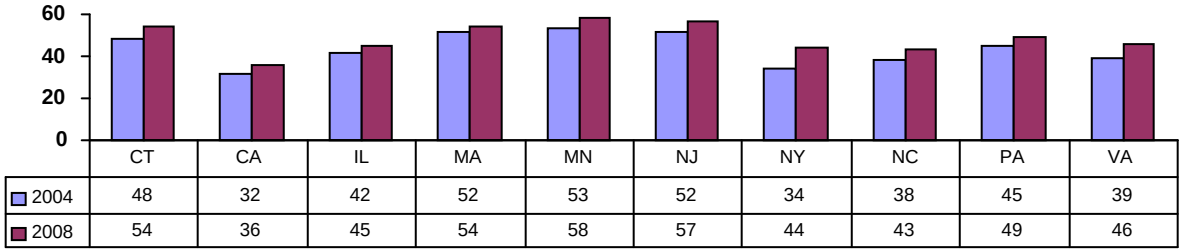
Why is it important?

Educational attainment is a key driver of the innovation economy. Companies, universiti… pipeline of workers with advanced skills and education in math and science.

Strengths

- In terms of "**chance for college**" -- a calculation that uses 4-year high school graduation rates and the college continuation rate of those graduates anywhere in the U.S. -- the chart below shows that the trend in this measure in Connecticut is a positive one, and that the **state ranks high – 3rd of 10** of leading technology states.

Figure IV-10: Chance for College- 2004 & 2008



	CT	CA	IL	MA	MN	NJ	NY	NC	PA	VA
2004	48	32	42	52	53	52	34	38	45	39
2008	54	36	45	54	58	57	44	43	49	46

- The **number of S&E graduate students in CT grew 21 percent** over the previous decade (5,732 in 1996 to 6,943 in 2005), rising faster than the nation's increase of 15 percent.

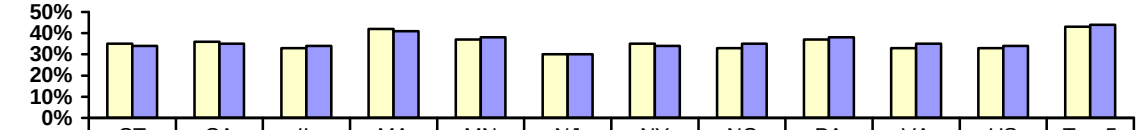
- In 2006, **CT ranked 8th in the nation for S&E doctorates awarded per capita** (12.6 percent), although dropped from 7th in 2007.

- Compared to the nation, Connecticut has a high percentage **(34.7 percent) of the population with a bachelor's degree or higher, ranking 5th in the nation.**

Opportunities for improvement

- The National Report Card on Higher Education assesses **state residents' participation in higher education,** as a percent of 18-24 year olds who are enrolled at a higher education institution. Using this measure, Connecticut does not fare as well.
  - In 2001, 35 percent of CT residents in that age group were enrolled in higher education, two points above the national average.
  - In 2007, **Connecticut's percentage had slipped to 34, the same as the national average**. In comparison with nine other states considered leading technology states, Connecticut ranked 6, along with New York and Illinois.

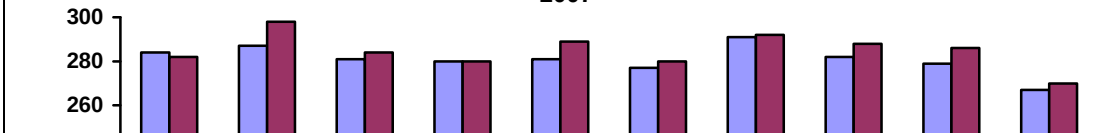
Figure IV-11: Percentage of Persons Age 18-24 Enrolled in Higher Education 2001 and 2007



	CT	CA	IL	MA	MN	NJ	NY	NC	PA	VA	US	Top 5
2001	35%	36%	33%	42%	37%	30%	35%	33%	37%	33%	33%	43%
2007	34%	35%	34%	41%	38%	30%	34%	35%	38%	35%	34%	44%

- **CT's 8th-grade math scores declined two points from 2003 through 2007**, a negative trend, and the only state in the comparative group to experience a downward trend in scores (Figure IV-12).
- While CT's score was still 2 points higher than the national average, it ranks 28th overall, and of the 10 states in the grouping, CT ranked 7th.

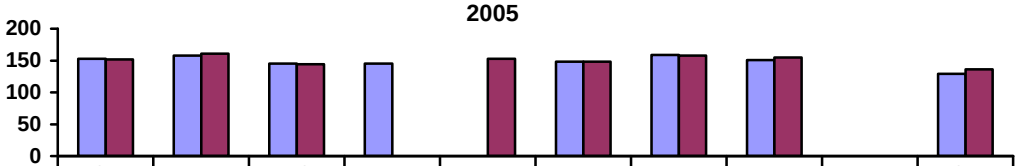
Figure IV-12: 8th Grade Math Scores in CT & Competitor States, 2003 and 2007



	CT	MA	NC	NY	NJ	IL	MN	VA	PA	CA
2003	284	287	281	280	281	277	291	282	279	267
2007	282	298	284	280	289	280	292	288	286	270

- In 2000, Connecticut 8th grade science scores were 153 and CT ranked 16th of 38 states with scores available.
- In 2005, Connecticut **science scores slipped by a point to 152 – one of 15 states to have declining scores**. Of 44 states reporting scores, CT ranked 20th. CT ranked 5th of the 8 comparative states with scores available. (Figure IV-13).

Figure IV-13: 8th Grade Science Scores in CT & Competitor States, 2000 and 2005



	CT	MA	NC	NY	NJ	IL	MN	VA	PA	CA
2000	153	158	145	145	-	148	159	151		129
2005	152	161	144	-	153	148	158	155		136

Section V

Tax Policy: Connecticut and Surrounding States

In addition to a broad study of aspects of Connecticut's economic competitiveness, examined in earlier sections, the study scope also called for a narrower look at Connecticut's economic competitive position with its border states. This section compares Connecticut's tax policy on retail sales with the surrounding border states of New York, Massachusetts, and Rhode Island.

Sales tax policy. General sales tax rates vary by state and also by the items that are considered taxable. In addition to state sales tax, localities in some states may impose an additional sales tax. Connecticut applies only one uniform state sales tax rate.

Connecticut has maintained a sales tax rate of 6 percent since 1992 but with the recent passage of the FY 2010-2011 biennial budget, the sales tax will be lowered to 5.5 percent effective January 1, 2010, (however, the rate change will not take effect if any of the monthly financial statements issued by the comptroller indicates gross tax revenue to the General Fund for FY 10 to be at least one percent less than the estimated gross tax revenue adopted by the Finance, Bonding, and Revenue Committee). Rhode Island has consistently had the highest *state* sales tax of the surrounding states, taxing items at 7 percent. However, when including the additional local sales tax, the New York counties that border Connecticut - Duchess, Putnam, and Westchester – have the highest sales tax rates ranging from 8.125 percent to 8.375 percent. Massachusetts had the lowest sales tax rate of any of the border states until August 1, 2009, when rates were raised to 6.25 percent. This now means Connecticut has the lowest rate of the four states, as shown in Table V-1.

Table V-1: Bordering State Sales Tax Rates as of August 2009

State	State Tax Rate	Local Tax Rate	Total Sales Tax
Connecticut	6%	-	6%
Massachusetts	6.25%	-	6.25%
New York	4%	4.125-4.375%	8.125 – 8.375%
Rhode Island	7%	-	7%
Source: Tax Foundation			

Rhode Island is the only border state that is a member of the Streamlined Sales Tax Project (SSTP). The goal of the project is to demonstrate to Congress uniformity among the various states' sales taxes. If consistency can be shown, then it improves the chances of achieving federal legislation that would permit the states to collect sales tax on interstate commerce such as Internet and catalog purchases, and lessen the complications associated with doing business in multiple states. The STTP requires using standardized definitions for terms (e.g., clothing, food, and computer software) and eliminating thresholds (taxing items at different rates) as Connecticut does for clothing. Participation is optional -- 23 other states across the country participate in the program but Connecticut has not. Currently, Congress is considering legislation that would implement the Streamlined Sales Tax Project nationwide.

Sales Tax Revenue. Generally, sales tax revenue is somewhat less volatile than other types of taxes. However, a slow-down in the economy will result in a decrease in sales tax revenue. About 40 percent of all Connecticut's state (not local) taxes come from the sales and gross receipts tax. As with the other border states, the percentage of total revenue that is derived from the sales tax has been declining since 2005. As illustrated in Table V-2, Rhode Island relies more heavily on its sales tax revenues, collecting about half its revenue from the sales tax.

Table V-2: Sales and Gross Receipts Tax Revenue as a Percent of Total State Revenue

	2005	2006	2007	2008
Connecticut	44%	41%	39%	39%
Massachusetts	32%	31%	29%	28%
Rhode Island	52%	51%	49%	50%
New York	34%	33%	31%	31%

Source: US Census Bureau, State Tax Collections 2005-2008

Evidence of cross-border shopping? States must balance the need to raise revenue versus remaining competitive with border states when establishing the rate for a sales tax. If rates vary significantly from state to state, it creates an incentive for consumers to cross state borders to shop in lower-tax jurisdictions. However, when deciding where to shop, consumers face a tradeoff between the cost savings due to the lower tax versus the costs and inconvenience incurred from the distance traveled.

In order to examine whether Connecticut consumers decide to shop across state borders because of lower sales tax and also to determine if Connecticut benefits from cross-border shopping, staff obtained sales revenue data by Connecticut town and location of the towns to the border states from the Department of Revenue Services. However, there are limitations to the data that prevented staff from reaching any conclusions at this stage. For example, if a store has multiple locations, it is possible that sales data is reported from just one location. Therefore, specific town sales data could be over- or under-estimated due to this method of reporting. Staff will continue to examine the data and provide an analysis in the final report, if possible.

Excise taxes. Excise taxes, which are known as selected sales taxes, are applied to specific consumer products and typically levied in addition to the sales tax. Alcoholic beverages (beer, wine, and liquor), tobacco products (cigarettes and cigars), and motor fuel (gasoline and diesel) are the most common consumer products that have excise taxes.

Excise taxes are typically charged on the item itself rather than a percentage of the price. For example, the excise tax on cigarettes may be $2 per package, not a percent of the price of the package. In comparison to other types of taxes, such as income and sales tax, excise taxes are not a major revenue generator for states. Excise taxes in Connecticut make up approximately 6 percent of the state revenues collected annually.

Cigarette excise tax. In addition to charging consumers a sales tax, an excise tax is imposed on cigarettes. Payment is indicated by affixing a stamp to each pack of cigarettes. As of January 1, 2009, Connecticut had the lowest excise tax on cigarettes when compared to border towns as is shown in Table V-3. However, due to the FY 2010-2011 biennial budget passed in August, Connecticut's tax will increase 50 percent to $3 a pack, making it the second-highest tax

behind Rhode Island of the four comparative states. Although the rate was increased by 50 percent, past experience with rate increases show that state revenues will not grow by 50 percent because as cigarette prices increase, sales of cigarette packs have tended to decrease.

Table V-3: Cigarette State Excise Tax				
	2006	2007	2008	2009
Connecticut	$1.51	$1.51	$2.00	$3.00
Massachusetts	$1.51	$1.51	$1.51	$2.51
Rhode Island	$2.46	$2.46	$2.46	$3.46
New York	$1.50	$1.50	$1.50	$2.75
Source: Tax Foundation				

Although one might conclude that the high tax rate on cigarettes would result in more cross-border shopping into other states, this is likely not the case. A recent study found that only a small percent of smokers purchase outside their state.[45] The study analyzed data from the Current Population Survey Tobacco Use Supplement (U.S. Census) and found that approximately 0.8 percent of consumers report purchasing cigarettes from "other" locations, which include the Internet and Indian reservations, while 96 percent of smokers purchase from within their home state. One could conclude from this that cigarette smokers purchase as needed rather than planned purchasing in bulk.

As shown in Table V-4, Connecticut collected in 2008 approximately $330 million in cigarette excise tax revenue. This was the largest amount collected for the past six years. The large increase in revenue was due to an increase in the excise rate by $0.49 a pack even though the state saw a decline in packages of cigarettes sold.

Smoking rates have been declining for the past five years according to available sales data reviewed by staff. The state experienced a decrease in sales volume of 10 percent when the excise tax was increased from $1.11 per pack to $1.51 per pack (36 percent increase). In the years following the tax increase, sales decreased by an average of 2 percent a year. In 2008 when the tax per pack was increased from $1.51 to $2 a pack, sales decreased by 5 percent, but more revenue was collected due to the higher tax rate.

[45] Chiou, Lesley and Muehlegger, Erich, "Crossing the Line: The Effect of Cross Border Cigarette Sales on State Excise Tax Revenues," February 2008.

Table V-4: Cigarette Sales, FY 2003 to FY 2008			
	Packages Sold (in millions)	Percent change	Excise Tax Revenue Collected ($in millions)
FY 2003	204		$252
FY 2004	185	(10%)	$276
FY 2005	179	(3%)	$270
FY 2006	179	-	$268
FY 2007	172	(4%)	$264
FY 2008	163	(5%)	$330
*Data includes total cigarette sales. Cartons with more than 25 cigarettes are taxed at higher rate but represent only about .01 - .05 percent sales			
Source: Department of Revenue Services			

Alcohol excise and sales taxes. States also impose excise taxes on alcoholic beverages based on alcohol volume. In Connecticut, a tax is imposed also on all distributors of alcoholic beverages based on the quantity of alcohol sold to off-premise establishments.

Table V-5 shows how Connecticut's alcohol excise tax rate compare to the border state rates of Massachusetts, Rhode Island, and New York.

Table V-5: Alcohol Excise Tax, Rates as of July 1, 2009			
	Spirits (per gallon)	Wine (per gallon)	Beer (per gallon)
Connecticut	$4.50	$0.60	$0.20
Massachusetts	$4.05	$0.55	$0.11
Rhode Island	$3.75	$0.60	$0.11
New York	$6.44	$0.30	$0.14
Source: Tax Foundation			

In addition to the excise tax, all the states that border Connecticut now charge sales tax on alcoholic beverages; however, this is a recent development. Massachusetts did not impose sales tax on alcohol until August 1, 2009, so the impact could not be assessed.

Tax policy on alcoholic beverages. In addition to the excise and sales tax on alcohol, there are other tax policies that also may affect sales. Unlike cigarettes and other items subject to sales tax, some states impose restrictions on when and where alcohol can be sold.

When. Connecticut, for example, is the only remaining New England state that does not allow off-premise alcohol to be sold on Sundays. States also impose restrictions on the hours when alcohol can be sold. Following are the permitted alcohol sale hours of Connecticut and its border states:

- Connecticut – Sales Monday to Saturday 8 am–9 pm
- Rhode Island – Sales Monday to Saturday 9 am–10 pm; Sunday noon–6 pm
- New York – Sales of wine and spirits Monday to Saturday 9 am–midnight; Sunday noon-9 pm; beer can be sold 24 hours a day
- Massachusetts - Sales Monday to Saturday 8 am-11 pm; Sunday noon–11 pm

Where. States also vary in the types of stores where liquor can be sold whether in grocery stores, stand-alone registered liquor stores, or state-run distribution centers. Each of the bordering states applies different restrictions as to where retail purchases of alcohol can occur. In Connecticut, outside of liquor stores, only beer can be sold in grocery stores. In New York, beer is only sold at supermarkets and convenience stores with wine and liquor sold only at liquor stores. In Massachusetts, beer and wine can be sold in grocery and convenience stores but not liquor. Rhode Island has the most restrictive provisions, requiring that alcohol of any kind be sold only in liquor stores.

It is difficult to measure the effect location restrictions has on alcohol sales. However, a common assumption is that if alcohol is more readily available -- for example, sold in grocery stores -- consumers are more likely to purchase more than if they had to make separate trips to purchase alcohol.

Consumption. Massachusetts and Rhode Island have had consistently higher per capita alcohol consumption rates than Connecticut for the past ten years (See Appendix E for detailed data).[46] However, Rhode Island only allows beer, wine, and liquor to be sold at liquor stores whereas Massachusetts allows beer and wine to be sold in multiple locations including grocery stores. Although a direct correlation cannot be drawn, the consumption data do not appear to support the hypothesis that greater access leads to larger per capita sales.

Sunday alcohol sales. Connecticut is the only state in New England to still have the "blue law" that prohibits the sale of alcohol on Sundays. By still having this law in place, the concern is that Connecticut loses sales tax revenue to border states. Rhode Island, New York, and Massachusetts all allow alcohol sales seven days a week, although this has been a fairly recent development in all three bordering states. Table V-6 lists the states that currently have a ban on Sunday alcohol sales and those that have repealed their bans.

[46] National Institute on Alcohol and Alcoholism of the National Institutes of Health

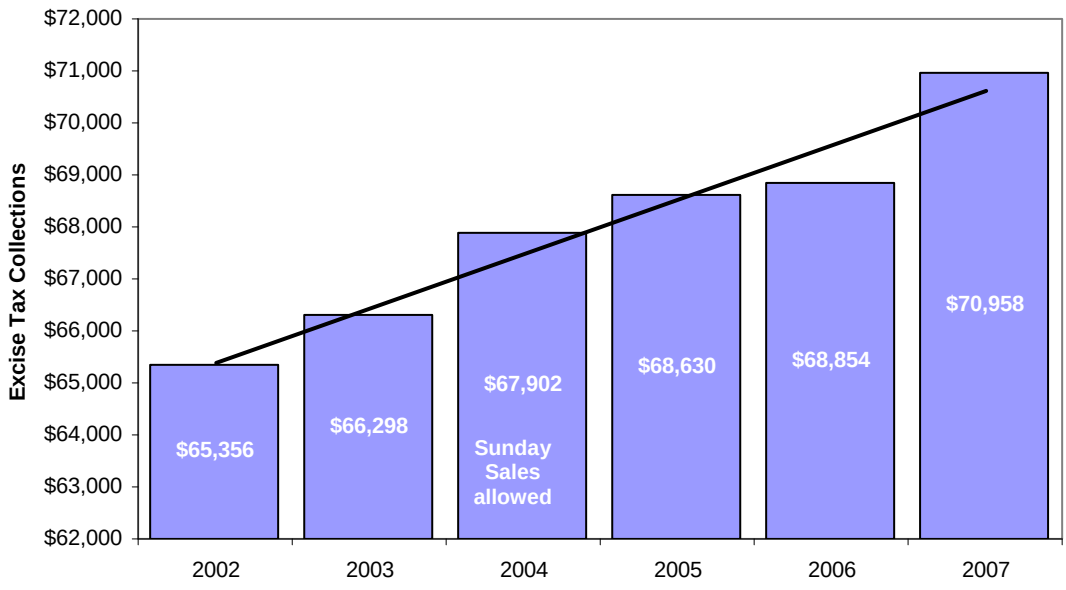
Table V-6: Sunday Sales		
Prohibit	**Repealed Bans Since 2002**	**Repealed Before 2002**
Alabama	Colorado	Alaska
Arkansas	Delaware	Arizona
Connecticut	Idaho	California
Georgia	Kansas	Florida
Indiana	Kentucky	Hawaii
Minnesota	Massachusetts	Illinois
Mississippi	New York	Iowa
Montana	Ohio	Louisiana
North Carolina	Oregon	Maine
Oklahoma	Pennsylvania	Maryland
South Carolina	Rhode Island	Michigan
Tennessee	Virginia	Missouri
Texas	Washington	Nebraska
Utah		Nevada
West Virginia		New Hampshire
		New Jersey
		New Mexico
		North Dakota
		South Dakota
		Vermont
		Wisconsin
		Wyoming
Source : March 2009 issue of State Legislature		

This analysis, as per the scope of study, of the permission and/or prohibition of Sunday sales of alcohol focuses on the impact of tax policy and tax revenue for the state, not the social policy implications of allowing Sunday sales.

In an effort to determine the effect on Connecticut tax revenue by allowing Sunday sales, PRI staff reviewed the excise tax revenues collected in Massachusetts, both prior to allowing Sunday sales and after the ban was lifted. Prior to August 1, 2009 Massachusetts did not have a sales tax on alcohol, only an excise tax.

Figure V-1 shows the annual excise tax collections on alcohol in Massachusetts from 2002 to 2006. As the chart depicts, revenue collections have been increasing since 2002. One might expect a larger than normal increase in revenue in 2004 when Sunday sales began and then a leveling off as consumers adjusted to the change. Although 2004 revenues did increase 2.4 percent from 2003, the largest percentage increase in tax collections occurred between 2006 and 2007 (3.1 percent); during this time period no tax policy (sales nor excise taxes) on alcohol changed in that state.

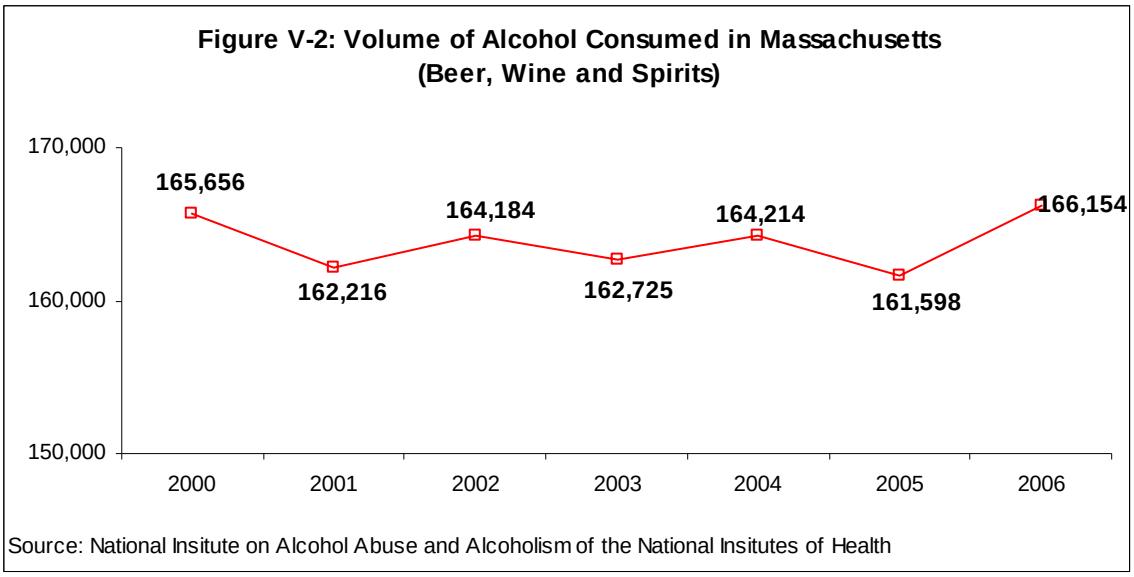
Figure V-1: Massachusetts Alcohol Excise Tax Collections



Source: MA Department of Revenue Services 2007 Annual Report

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Percent Increase	1.4%	2.4%	1.1%	0.3%	3.1%

In addition, overall volume of alcohol consumed may not increase with another day of sales either. Data reported by the National Institutes of Health does not confirm that Sunday sales will increase the total volume of alcohol consumed. As shown in Figure V-2, the volume consumed did increase in 2004, but it was not the largest yearly amount of alcohol consumed over the period analyzed. In fact, in 2005, the year following the passage of Sunday sales, consumption of alcohol actually decreased.



If the objective of permitting Sunday alcohol sales is to increase tax revenue or not lose sales to bordering states, it is not clear from the experience in Massachusetts that more tax revenue is a guarantee. The data from Massachusetts suggests that allowing another day of alcohol sales does not necessarily increase individual alcohol consumption but rather just allows consumers more flexibility as to when they can buy alcohol.

Motor Vehicle Fuels Excise Tax. Motor vehicle fuel used or sold in Connecticut is taxed in a number of ways. Gasoline and gasohol (mixture of gasoline and alcohol – mostly ethanol) are taxed by the state at 25 cents per gallon, and by the federal government at 18.4 cents per gallon. In addition there is a state Petroleum Products Gross Earnings Tax of 7.5 percent, which increases the cost per gallon of gasoline by approximately 13 cents per gallon.[47] Thus, the total tax on a gallon of gasoline in Connecticut is 56.4 cents.

Compared with the border states, Connecticut has the second-highest total tax on gasoline as shown in Table V-7.

Table V-7: Gasoline Excise Taxes

	Excise Tax	Other State Taxes	Federal Tax	Total Taxes
New York	$0.08	$0.32	$0.184	$0.584
Connecticut	$0.25	$0.13	$0.184	$0.564
Rhode Island	$0.27	$0.04	$0.184	$0.494
Massachusetts	$0.21	$0.025	$0.184	$0.419
Source: ICPA				

Committee staff had hoped to look at gas sales data by town, but due to data limitations this type of analysis was not feasible.

[47] Independent Connecticut Petroleum Association

APPENDICES

Appendix A: Connecticut's Industry Clusters

Industry	NAICS	Description
Aerospace Components Manufacturing		
	3364	Aerospace Product and Parts Manufacturing
Bioscience	3254	Pharmaceutical and Medicine Manufacturing
	334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
	334516	Analytical Laboratory Instrument Manufacturing
	334517	Irradiation Apparatus Manufacturing
	3391	Medical Equipment and Supplies Manufacturing
	423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers
	423460	Ophthalmic Goods Merchant Wholesalers
	446110	Pharmacies and Drug Stores
	446130	Optical Goods Stores
	541710	Research and Development in the Physical, Engineering, and Life Sciences
	6215	Medical and Diagnostic Laboratories
Insurance and Financial Services	522	Credit Intermediation and Related Activities
	523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities
	524	Insurance Carriers and Related Activities
	525	Funds, Trusts, and Other Financial Vehicles
	531	Real Estate
Maritime	3366	Ship and Boat Building
	4831	Deep Sea, Coastal, and Great Lakes Water Transportation
	4832	Inland Water Transportation
	4883	Support Activities for Water Transportation
	4885	Freight Transportation Arrangement
Metal Manufacturing	331	Primary Metal Manufacturing
	332	Fabricated Metal Product Manufacturing
	333	Machinery Manufacturing
	337124	Metal Household Furniture Manufacturing
	33991	Jewelry and Silverware Manufacturing
	423510	Metal Service Centers and other Metal Merchant Wholesalers
Plastics	325211	Plastics Material and Resin Manufacturing
	3261	Plastics Product Manufacturing
	326220	Rubber and Plastics Hoses and Belting Manufacturing
Software and Information Technology	3341	Computer and Peripheral Equipment Manufacturing
	3344	Semiconductor and other Electronic Component Manufacturing
	334611	Software Reproducing
	334613	Magnetic and Optical Recording Media Manufacturing
	423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers
	425110	Business to Business Electronic Markets
	443120	Computer and Software Stores (retail)
	454111	Electronic Shopping
	454112	Electronic Auctions
	5112	Software Publishers
	518	Internet Service Providers, Web Search Portals, and Data Processing Services
	5415	Computer Systems Design and Related Services
	611420	Computer Training

Source: Connecticut's Industry Clusters, Deparment of Labor, July 2005

Appendix B: Compilation of Connecticut Economic Rankings

Common Themes:

- Infrastructure poor – rating based on highway performance, ease of commuting, energy costs, housing costs, and lack of capital planning
- Energy costs primary driver in the increase in the cost of doing business between 2005 and 2007 according to the Milken scorecard which in 2007 we were 63.8 percent above the national average
- Entrepreneurial activity around national average
- Top ten in new economy measures

Organizations	2004	2005	2006	2007	2008
Beacon Hill – **State Competitiveness Report**	**Overall rank: 15** Govt &Fiscal Policy: 42 Security: 4 Infrastructure: 31 Human Resources: 10 Technology: 5 Business Incubation: 18 Openness: 13 Environmental Policy: 43	**Overall rank: 21** Govt &Fiscal Policy: 42 Security: 6 Infrastructure: 38 Human Resources: 11 Technology: 4 Business Incubation: 40 Openness: 11 Environmental Policy: 41	**Overall rank: 24** Govt &Fiscal Policy: 44 Security: 5 Infrastructure: 37 Human Resources: 9 Technology: 4 Business Incubation: 47 Openness: 12 Environmental Policy: 41	**Overall rank: 25** Govt &Fiscal Policy: 40 Security: 8 Infrastructure: 41 Human Resources: 10 Technology: 4 Business Incubation: 38 Openness: 13 Environmental Policy: 43	**Overall rank: 21** Govt &Fiscal Policy: 43 Security: 2 Infrastructure: 38 Human Resources: 13 Technology: 7 Business Incubation: 36 Openness: 12 Environmental Policy: 41
Corporation for Enterprise Development (CFED) – **Development Report Card**	**Overall Performance: A** Employment: D Earnings & Job Quality: A Equity: A Quality of Life: B Resource Efficiency: A Business Vitality: A Competitiveness of existing business: A Entrepreneurial Energy: C Development Capacity: A Human resources: A Financial resources: A Infrastructure: C Amenity & Natural Capital: D Innovation Assets: A		**Overall Performance: A** Employment: D Earnings & Job Quality: A Equity: A Quality of Life: C Resource Efficiency: A Business Vitality: B Competitiveness of existing business: B Entrepreneurial Energy: B Development Capacity: B Human resources: A Financial resources: C Infrastructure: C Amenity & Natural Capital: D Innovation Assets: A	**Overall Performance: A** Employment: D Earnings & Job Quality: A Equity: B Quality of Life: B Resource Efficiency: A Business Vitality: A Competitiveness of existing business: B Entrepreneurial Energy: B Development Capacity: A Human resources: A Financial resources: A Infrastructure: D Amenity & Natural Capital: C Innovation Assets: A	
Milken – **Cost of Doing Business** **(higher the rank more expensive to do business)**		**Overall Rank: 5** Wage Cost: 127.2 Tax Burden: 105.4 Electricity cost per kwh: 136.6 Industrial Rent per sqft: 115.6		**Overall Rank: 5** Wage Cost: 128.9 Tax Burden: 106.8 Electricity cost per kwh: 163.8 Industrial Rent per sqft: 113.5	

Organizations	2004	2005	2006	2007	2008
		Office rent per sqft: 119.5 Cost of doing business index: 122.7 (22.7 percent above the national average)		Office rent per sqft: 116.1 Cost of doing business index: 127.5 (27.5 percent above the national average)	
Milken – **State Technology and Science Index**	**Overall Rank: 10** Research & Development Index: 13 Risk Capital & Entrepreneurial Index: 12 Human Capital Investment: 6 Technology & Science Workforce: 9 Tech Concentration & Dynamism: 14				**Overall Rank: 7** Research & Development Index: 7 Risk Capital & Entrepreneurial Index: 11 Human Capital Investment: 4 Technology & Science Workforce: 9 Tech Concentration & Dynamism: 14
The Pew Center on the States – **Government Performance Project**		**Overall: C+** Money: C People: B Infrastructure: C+ Information: C-			**Overall: B-** Money: B- People: B- Infrastructure: C+ Information: B-
SBEC – **Small Business Survival Index**			**Rank: 32**	**Rank: 38**	**Rank: 37**
Tax Foundation – **State Business Tax Climate**	**Overall Rank: 37** Corporate Income Tax: 19 Individual Income Tax: 21 Sales & Gross Receipts: 33 Unemployment Insurance Tax: 24 Fiscal Balance: 43		**Overall Rank: 41** Corporate Income Tax: 18 Individual Income Tax: 18 Sales & Gross Receipts: 34 Unemployment Insurance Tax: 26 Wealth & Property Tax: 50	**Overall Rank: 37** Corporate Income Tax: 28 Individual Income Tax: 19 Sales & Gross Receipts: 33 Unemployment Insurance Tax: 16 Wealth & Property Tax: 49	**Overall Rank: 38** Corporate Income Tax: 17 Individual Income Tax: 18 Sales & Gross Receipts: 30 Unemployment Insurance Tax: 19 Wealth & Property Tax: 50

Organizations	2004	2005	2006	2007	2008
Kauffman – **State of New Economy Index**				**Overall Rank: 6** IT Professionals: 5 Managerial/Professional Jobs: 3 Workforce Education: 4 Immigration of Knowledge workers: 2 Manuf. Value-added: 14 High wage traded services: 2 Export focus of manuf: 26 Foreign Direct Investmt: 4 "Gazelle" Jobs: 25 Job Churning: 46 Fast growing firms: 12 IPOs: 15 Entrepreneurial Activity: 25 Inventor patents: 6 Online Population: 7 Internet Domain Names: 23 Education Technology: 29 Digital Government: 36 Online Agriculture: 1 Broadband telecomm.: 14 High-Tech Jobs: 14 Scientists & Engineers: 6 Patents: 14 Industry R&D: 7 Venture Capital: 11	**Overall Rank: 6** IT Professionals: 7 Managerial/Professional Jobs: 4 Workforce Education: 4 Immigration of Knowledge workers: 5 Migration of knowledge workers: 5 Manuf. Value-added: 2 High wage traded services: 2 Export focus of manuf: 20 Foreign Direct Investmt: 1 "Gazelle" Jobs: 23 Job Churning: 49 Fast growing firms: 7 IPOs: 7 Entrepreneurial Activity: 35 Inventor patents: 2 Online Population: 21 Internet Domain Names: 21 Education Technology: 25 Digital Government: 37 Online Agriculture: 5 Broadband telecomm.: 9 Health IT: 9 High-Tech Jobs: 15 Scientists & Engineers: 6 Patents: 14 Industry R&D: 9 Non-industry R&D: 38 Alternative Energy use: 12 Venture Capital: 18
Expansion Management – **Helping Companies Evaluate Future Locations**	**Overall Rank: 44** General Tax Bite Rank: 42 Taxes & spending 5 yr trend: 26 Infrastructure spending: 46 Education spending: 37 Spending on Itself: 45 Debt Mngmt: 48 Right to Work laws: No	**Overall Rank: 48** General Tax Bite Rank: 43 Taxes & spending 5 yr trend: 28 Infrastructure spending: 50 Spending on Itself: 45 Debt Mngmt: 49 Right to Work laws: No	**Overall Rank: 50 (last)** General Tax Bite Rank: 45 Taxes & spending 5 yr trend: 48 Infrastructure spending: 49 Spending on Itself: 47 Debt Mngmt: 49 Right to Work laws: No	**Overall Rank: 50 (last)** General Tax Bite Rank: 45 Taxes & spending 5 yr trend: 45 Infrastructure spending: 50 Spending on Itself: 47 Debt Mngmt: 49 Right to Work laws: No	

Organizations	2004	2005	2006	2007	2008
Forbes' – Ranking of States' Business Costs			**Overall Rank: 28** Business Cost Rank: 43 Labor Rank: 8 Regulatory Environmt: 43 Economic Climate: 28 Growth Prospects: 23 Quality of Life: 4	**Overall Rank: 31** Business Cost Rank: 44 Labor Rank: 8 Regulatory Environmt: 40 Economic Climate: 37 Growth Prospects: 24 Quality of Life: 4	**Overall Rank: 33** Business Cost Rank: 45 Labor Rank: 13 Regulatory Environmt: 41 Economic Climate: 24 Growth Prospects: 29 Quality of Life: 3
Ernst & Young and Council on State Taxation – **Total State and Local Business Taxes** (higher ranking is better)				Ratio of business taxes to expenditures that benefit business: 23 Business share of State and Local Taxes: 2 Taxes as % of GSP: 4 Business share of tax growth between 2002 & 2007: 2	Ratio of business taxes to expenditures that benefit business: 18 Business share of State and Local Taxes: 2 Taxes as % of GSP: 2 Business share of tax growth between 2002 & 2008: 1

Appendix C: Economic Development Agencies and Programs

Category	Program Purpose	Funders	Average Annual Funding
Business Climate	Improving business climate	OPM	$ 237,913,213
	Creating jobs	CDA	$ 8,315,400
Municipal Development	Developing infrastructure	DECD CDA	$ 97,547,508
	Cleaning up and redeveloping brownfields	CDA DEP	$ 1,678,575
	Developing urban areas and neighborhoods	DECD, OWC, OPM, CDA	$ 6,185,708
Targeted Industries	Developing targeted industries	DECD CII	$ 122,048,289
	Promoting tourism	OPM, CCT	$ 9,970,732
	Preparing plans and developing policies	DECD	$ 133,333
Human and Organizational Development	Developing the workforce	DECD, DOL, OWC, CII	$ 54,798,265
Technology	Venture capital; promoting innovation	CII, DECD, OWC	$ 36,726,337
	Technology transfer	DECD, CII	$ 1,392,370
Quality of Life	Developing arts, cultural, and historical assets	CCT	$ 4,691,145
Total			**$ 581,400,874**

Appendix D: Definitions & Sources for Connecticut's Innovation Index

Category	Measure	Definition	Source
Research and Development Capacity	R&D Intensity	ratio of total R&D performed in a state to the GDP of the state	National Science Foundation
	Total/Industry/Academic R&D performance	federal R&D dollars into Connecticut	National Science Foundation
	Federally Funded R&D Centers	R&D performing organizations that are exclusively or substantially financed by the federal government. Each center is administered by an industrial firm, university, or other nonprofit institution (e.g. Argonne National Laboratory at University of Chicago; Lincoln Laboratory at MIT)	National Science Foundation
	State R&D Tax credits	Research conducted in the state that qualifies for a tax credit	Department of Revenue Services
	Federal EDA funding	Federal economic development agency funding	EDA
Innovation Capacity	SBIR/STTR funding	Federal funding program run through the Small Business Administration -Small Business Innovation Research grants and Small Business Technology Transfer grants	SBIR Tech Net Database
	SBIR - % awarded to proposals	Number of Ct companies that applied for SBIR/STTR grants versus those that actually received funding	SBIR
	Venture Capital per $1,000 GDP	Venture capital funding to CT companies per thousand GDP	PricewaterhouseCoopers MoneyTree Report
	Patents issued	Number of patents issued to Connecticut inventors or companies	US Patent and Trademark Office
	Entrepreneurial Activity	measures business entry and includes all new business owners	Kauffman Foundation
Employment	High Tech employment % change	Measures the extent to which the workforce in the state is employed in high-technology industries. High-technology industries are defined as those in which the proportion of employees in technology-oriented occupations is at least twice the average proportion for all industries.	National Science Foundation
	High Tech Share of all Business Establishments	Measures the portion of the state's business establishments that are classified as high-technology industries.	National Science Foundation
	Percent Workforce in S&E occupations	Percent of the workforce in science and engineering occupations. S&E occupations are defined by standard occupational codes that encompass mathematical, computer, life, physical, and social scientists; engineers; and postsecondary teachers in any of these S&E fields. Managers, technicians, elementary and secondary schoolteachers, and medical personnel are excluded.	National Science Foundation
Overall Economy	Real Gross State product (2000 $) % change	Measures the real gross state product percent change using 2000 dollars	Bureau of Economic Analysis
	Real per capita GDP	Gross domestic product measured on a per capita basis	Bureau of Economic Analysis

	Population Growth & Migration	Measures population changes – state in and out migration	U.S. Census Bureau
	Total Exports	Measures the commodities that are exported out of the state	WISERTrade data – World Institute for Strategic Economic Research
	Exports as % of GDP	Value of exports as a percent of state gross domestic product	WISERTrade data and Bureau of Economic Analysis
Education Capacity	Math skills of 8th grade students	National Assessment of Education Progress (NEAP) provides data based on skills testing that allows comparison across states.	U.S. Dept of Education
	Science skills of 8th grade students	National Assessment of Education Progress (NEAP) provides data based on skills testing that allows comparison across states.	U.S. Dept of Education
	Higher education enrollment among young people – chance for college by age 19	A calculation that uses 4-year high school graduation rates and the college continuation rate of those graduates anywhere in the U.S.	National Center for Education Statistics
	Higher education 18-24 year olds	Higher education attainment among 18-24 year olds	National Report Card on Higher Education
	S&E Graduate students per 1,000 25-34 yr olds	Number of science and engineering students per one thousand 25 to 34 year olds	National Science Foundation
	S&E doctorates awarded per capita	Number of science and engineering doctorates awarded divided by the state population	National Science Foundation
	Education attainment - % of population 25 and older with bachelor's degree or more	Percent of the population over the age of 25 with a bachelor's degree or higher	U.S. Census Bureau
Connectivity Capacity	Household connectivity	Percent of households with internet connection	U.S. Census Bureau Current Population Survey
	Residential high speed internet access	Number of high speed residential lines	Federal Communications Commission
	Classroom connectivity	Measures access to computers in the classroom	Education Week – Technology Counts

Appendix E: Alcohol Consumption Data

Connecticut per capita alcohol consumption, 2002-2006					
	Beer	Wine	Spirits	Total	National Rank
2002	0.95	0.5	0.74	2.20	6
2003	0.93	0.52	0.77	2.22	6
2004	0.92	0.53	0.79	2.24	6
2005	0.9	0.54	0.79	2.23	6
2006	0.93	0.55	0.84	2.32	6
Source: National Institute on Alcohol Abuse and Alcoholism Division of the National Institute of Health					

Massachusetts per capita alcohol consumption, 2002-2006					
	Beer	Wine	Spirits	Total	National Rank
2002	1.13	0.54	0.8	2.46	3
2003	1.1	0.56	0.82	2.48	3
2004	1.1	0.58	0.84	2.52	3
2005	1.07	0.59	0.85	2.50	3
2006	1.1	0.61	0.84	2.55	3
Source: National Institute on Alcohol Abuse and Alcoholism Division of the National Institute of Health					

Rhode Island per capita alcohol consumption, 2002-2006					
	Beer	Wine	Spirits	Total	National Rank
2002	1.17	0.48	0.73	2.38	4
2003	1.12	0.51	0.79	2.42	3
2004	1.12	0.49	0.79	2.4	5
2005	1.13	0.51	0.81	2.45	4
2006	1.13	0.53	0.86	2.52	4
Source: National Institute on Alcohol Abuse and Alcoholism Division of the National Institute of Health					

New York per capita alcohol consumption, 2002-2006					
	Beer	Wine	Spirits	Total	National Rank
2002	0.95	0.38	0.59	1.91	9
2003	0.93	0.4	0.61	1.93	9
2004	0.91	0.41	0.62	1.95	9
2005	0.9	0.43	0.64	1.97	8
2006	0.88	0.45	0.65	1.99	9
Source: National Institute on Alcohol Abuse and Alcoholism Division of the National Institute of Health					