INVESTMENT CONSULTING ASSOCIATES

Comprehensive Evaluation of Maine's Research & Development and Economic Development Incentive and Investment Programs

Department of Economic & Community Development

Maine – January 2018

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

January 2018

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Executive Summary

This report represents the 2018 consolidated evaluation of the Economic Development and Research & Development programs of the State of Maine. Investment Consulting Associates was retained by the Maine Department of Economic and Community Development (DECD) to generate a series of action plan reports to examine the state's investments in both economic development and in research & development.

The State of Maine has developed a suite of organizations, policy and investment tools, and assistance programs aimed at attracting investment and at meeting the State's overall economic development goals. These tools vary in usefulness based on changing business requirements, as well as dynamic political and economic conditions. Economic conditions and business needs change over time, and the toolset must be evaluated and updated accordingly.

To examine how well its programs have been achieving these goals, the State of Maine has performed Biennial Progress Reports on all Economic Development and Research & Development (R&D) efforts. Along with this biennial report, a Comprehensive Evaluation of Investments in Research and Development report covering the past six years is due in 2018.

Any discussion of economic development and R&D investments on the part of the public sector should begin with an understanding that these programs are intended to influence decisions made by the private sector. As such, business location, investment, and hiring decisions are the direct purview of the private sector. However, the public sector can influence these decisions through the use of incentives, credits, technical assistance, and other programs aimed to enhance a community's business competitiveness.

Such programs are a critical, active component of many economic development, innovation, and economic sustainability strategies. However, no such program can completely change the nature of a community's strengths and weaknesses, nor can such programs work effectively in the absence of a coordinating economic development strategy.

Methodology

The present report has been constructed to meet the Maine Legislature's requirement to examine the effectiveness of Economic Development and R&D programs on a biennial basis. This has been accomplished through performing the following analyses and actions:

- Reviews of the previous studies performed for the State of Maine on the use and effectiveness of its programs;
- Interviews and roundtable discussions with public sector entities and their partners responsible for the administration of the State's various economic development programs;
- Roundtables with a sample of private sector companies and non-profit research entities who have received benefits and assistance from the State;

- Benchmarking the State of Maine's natural competitiveness against several of its peer states, both in terms of basic location fundamentals and of the incentive and credit tools available;
- Data collection through rigorous survey efforts collecting information on program usage, hiring trends, salary rates, and capital investment to allow for calculation of return on investment to the State (recipient lists provided by program administrators where those lists could be released under confidentiality agreement);
- Cost-benefit analysis of survey data for select programs; and
- Examination of annual reports (for those programs that generate annual reports and provided those reports along to the consultant team).

Note that the DECD survey referenced above (first created for the 2014 reporting cycle and enhanced in each subsequent round) has provided a means for direct reporting on behalf of the private sector companies benefitting from the State's economic development and R&D programs. While the requirement to report is indicated in each of the State's current programs, a comprehensive means for reporting does not otherwise exist.

Findings

While this report provides detailed findings for the entire suite of tools available to the State, the project team found broadly that:

- Companies reported that the current programs are broadly effective in allowing them to grow faster than they otherwise would have and, in some cases, to sustain the company through difficult or changing business cycles.
- This finding is somewhat tempered by the frustration that companies and institutions alike expressed on the difficulty finding, understanding, applying for, and reporting on the State's programs. Many asked that program offerings be simplified so an incoming or growing company can better understand the benefits they may be eligible for. Likewise, some companies were unaware of programs that would have been helpful had they been aware of them.
- This confusion and lack of information was also cited as characteristic of doing business in the State of Maine. Companies and individuals expressed significant negative perception about doing business in the State of Maine because of lack of clarity and lack of incentive stability due to politics (discussed in greater detail below).
- Companies also expressed a great deal of concern about the stability of incentive programs as well as the overall operating and regulatory environment in the state. Companies rely on a degree of stability and predictability in regulation to be able to plan effectively. Several companies cited concerns about making business decisions because of the instability of the incentive programs and the current debates in the State Capitol. The situation in Augusta is seen to be extremely uncertain and there are concerns about making business decisions in such an environment.
- Likewise, companies and institutions that have participated in the process expressed concern regarding how the results of these reports inform policy within the government of the State of

Maine. There was frustration expressed that reporting and input from this process may not be effectively reflected in policy adjustments.

- Maine should have a unifying vision for economic development and innovation that is shared by all state governing bodies. Interviewees suggested that Maine would be well-served by putting forth a bold and assertive plan for growth and then executing on it effectively. This finding has been universal throughout the reports from 2014 onwards, and companies and institutions alike continue to suggest that a coherent, unifying economic development vision would significantly enhance the state's efforts to consolidate it assistance programs and make them more effective.
- The State has difficulty supporting and assisting companies in the 20-100 employee range as currently available support programs do not directly address the most critical needs of companies of this size. This dovetails with an observed need to continue to assist small and entrepreneurial businesses as they transition from start-up to sustainable business.
- Companies and institutions continue to cite problems finding qualified workforce in the State or attracting workers to Maine. The State should work to develop workforce skills and provide better transferrable skills, and also better promote the programs already in place (such as Maine Quality Centers). Companies cited difficulty in attracting highly skilled employees to Maine in part because of job security concerns and lack of alternative career opportunities.
- Other states' economic development organizations commonly call Maine companies in attempt to recruit them to move. This is a generally accepted practice in business attraction around the globe. Maine DECD should consider countering these efforts by establishing a team to contact existing Maine companies to see how they are doing and to work towards company retention and growth. DECD staff does perform this role for company retention for Pine Tree Development Zone (PTDZ) recipients, but should broaden the scope of these efforts to include all companies participating in any Maine economic development and R&D programs as well as those outside the incentive programs.
- Institutions (universities and non-profits) and enterprises (such as R&D companies) supporting innovation, research, and development noted that while there is a growing desire to be more aggressive in support of Maine innovation, the state still does not have the embedded relationships between research, business, and finance inherent in innovation clusters/hubs like Route 128 Corridor in MA, the Research Triangle of NC, and Silicon Valley in CA. These relationships will need to be developed over time to ensure a long-term innovation advantage for the state.
- In addition to this, the State needs to better examine and define the role that pure scientific research (that performed by non-profit research institutions and the state's academic institutions) plays in the state's economic success. Such activities are not designed with an immediate, foreseeable payback in mind. However, they often advance technology, provide otherwise unpredicted economic benefits, and can act as a major coalescing force in attracting follow-on commercial investment and employment.
- The Economic Development Survey developed for the 2014 and 2016 reviews was used again during this evaluation to obtain information from participating companies on doing business in the State of Maine as well as to collect input values for the Cost Benefit Models (CBM). With

much hard work from both DECD and MTI staff, a completion rate of over 90% was obtained for those that replied to the survey request.[1]

- The CBM's were constructed for four programs. Business Equipment Tax Reimbursement (BETR), Finance Authority of Maine (FAME) and Maine Technology Institute (MTI) programs were evaluated using an unmodified internal rate of return (IRR) method. The IRR model for PTDZ was similar but included a sensitivity factor keyed to the assumption that companies made their decision to locate in Maine based on the "but for" clause in the PTDZ legal agreement. In other words, that if not for the incentive, the project may not have proceeded in Maine.

  The results are as follows (Please note that the rate of return on a 10-year US Treasury Bond is 2.68% as of January 25, 2018):
  - BETR provides a positive IRR of 86.7%.
  - As noted above, PTDZ is a program designed to attract businesses and expansions that would not otherwise locate or expand in Maine. Assuming all projects would not have happened BUT FOR the PTDZ, the program shows a positive IRR of 297.2%.
  - FAME, which operates as a loan insurance program rather than as a credit or incentive, shows a positive IRR of 66.5% for CLI/ERLP.
  - MTI, the State's marquee program for direct investment in innovation, shows a positive IRR of 4.2% for the development loan (DL) program.
- All in all, Maine's incentive productivity is similar to that of New Hampshire, Vermont, and Rhode Island.
  - Maine's number of incentive awards makes up 1.8% of all incentive awards in New England from 2010-2017. Maine's total value of awards represents 4.4% of the total amount awarded in New England. Likewise, Maine's total capital investment related to the incentive programs represents 3% of New England's overall incentivized capital investment. Maine's job creation related to incentive programs makes up 2.2% of New England's total creation affected by incentive programs.
  - Connecticut and Massachusetts gave a greater number of incentive awards with higher value of those awards, resulting in greater capital investment and higher job creation. However, Connecticut's programs appear less efficient, spending a higher dollar value in awards with less capital investment realized and fewer jobs created than Massachusetts.
  - These results further underline how programs can drive economic development results, but also accentuate the need to evaluate overall effectiveness and efficiency on a regular basis.
- Maine continues to trail most other US states in measures of incentives data availability. Maine's score puts the state at the rank of 46th.[2] The change was due to a drastic decrease in

[1] Completion rate differs from response rate. Completion rate measures the share of those that completed the survey against those that began the survey, while response rate measures those that completed the survey against the total sample size of invited participants. ICA distributed the survey through the program administrators to bolster participation, but due to this process, the total sample size for the survey was unknown, making total response rate incalculable. However, the *PTDZ* sample sized was 268. After receiving 158 responses from PTDZ recipients, this makes a response rate of almost 58%.

incentives deals captured by IncentivesMonitor.com, thus reducing the amount of available data and affecting its index performance. On a positive note, a Pew Charitable Trusts study found that Maine was one of the leading states in terms of legislating and monitoring incentives transparency.

Recommendations

This report's recommendations come at a time when the Maine Legislature is considering several measures which will significantly alter the landscape for economic development support programs. These range from a re-visioning of the Pine Tree Development Zone program (just before its planned sunset at the end of 2018) to development of a full, updated economic development strategy for the state. Likewise, the legislature has proposed and passed changes to the legislation that mandates this series of evaluation reports, making it likely that the next set of evaluations will proceed, function, and even read very differently to this.

It is our hope that the Legislature and the Executive Office consider the following recommendations as they proceed with their deliberations.

The recommendations below are presented below in five separate categories:

- Structure and targets of programs;
- Eligibility and benefits of programs;
- Monitoring and evaluation of incentive programs;
- Summary of programs and recommendations;
- General recommendations; and
- Implementation.

Structure and Targets of Incentive Programs

Public and private sector interviews – coupled with location selection analysis – suggest several recommendations for the structure and targeting of economic development and R&D programs:

A1. Incentive programs and any other economic development efforts work best when they are in support of a well-stated and understandable economic development strategy. Such a strategy should be built upon the state's existing strengths and expand these over time, allowing the state's economy to adapt and grow. A clear economic development and R&D strategy also by necessity lays out the desired end state, making measurement that much easier to define.

A2. Program design should conform to the best practice principles of simplicity, clarity, certainty and objectivity.

A3. The State of Maine should explicitly match performance measurements to the type of assistance provided. The ROI and breakeven point for a direct R&D investment in a university or small business setting will likely be very different to that for a tax credit for a large established company. The MIEAB (Maine Innovation Economy Advisory Board) has in the past

played a role in establishing and validating the State's R&D efforts. This role needs to be re-examined and perhaps reaffirmed.

A4. Likewise, there needs to be a clear and transparent mechanism by which the measurement and evaluation of programs – such as the current report – results in updates to strategy and public policy. Measurement must be followed by action or it is meaningless.

A5. The State should examine programs to determine which may be altered or augmented to meet the needs of post start-up companies (20-100 employees) who may still require assistance to best meet their potential.

A6. A common framework could be developed within each program that is clear, transparent, and coherent for investors and recipients. This approach would facilitate coordination and harmonization where possible.

A7. Change the requirements for personal equipment tax exemptions in the PTDZ program such that equipment does not need to be operated by specified new employees so long as the equipment benefits the entire company.

A8. Rather than focusing on the 7 specific sectors to grow Maine, it may be more advisable for the State to focus on growing all business sectors and supporting all successful businesses as a strategy for developing a more diversified, resilient economy. The challenge will to be to broaden focus while still being responsible for the advancement of the state's economic development.

Eligibility and Benefits of Programs

B1. Any investment incentive program succeeds in achieving its goals when it is clear, simple and certain, and performance-based against pre-determined criteria.

B2. All administrative processes should be as simple and clear as possible. It is important to develop incentive frameworks that can be effectively administered and monitored. Simplicity and clarity make compliance possible.

B3. This clarity and transparency should be further applied to description and details on incentive program websites.

Monitoring and Evaluation of Incentive Programs

C1. The State should create a searchable repository of information on all economic development and R&D programs that includes a clear statement of goals and outcomes, as well as clear evaluation and monitoring procedures.

C2. Economic development and R&D program administrators (specifically MTI) should follow up with applicants to grant and credit programs when they either do not qualify or are not chosen to receive funding or credits.

C3. We repeat the recommendation that the State should establish a standardized reporting tool for all economic development and R&D program recipients. Reporting requirements should be clear, coherent and transparent. These should be directly linked to the award and to the program's conditional criteria. Repercussions for non-compliance should be clearly spelled out in program legislation, along with the protocols for such sanctions.

C4. This tool should also provide a means for recipients to provide feedback to the State on their own experiences on the utility and efficacy of the programs. Such measures may include but not be limited to workforce readiness, program applicability and reporting, program utility, and suggestions for improvement.

C5. Once a company receives an incentive award, it is very important that the state continue to honor the award until either the company falls out of compliance or the award expires as stipulated in the program terms.

C6. Notwithstanding the statements above, the State should also consider revising the metrics it uses to evaluate the effectiveness of its research programs. Licenses, reputation, jobs, skills, patents, and wage levels may all be factors, but the matrix of measures should reflect the mix of investment desired and an appropriate understanding of their development and business cycle.

C7. Likewise, the State needs to fully recognize the distinction between pure research (as performed by universities and non-profit scientific research institutions) and commercial research and development as performed in an industrial context. The latter is usually designed with a product and a hoped-for return on investment in mind. Pure research is performed to advance the scope of human knowledge. While it does not often have a known commercial use at inception, such research is vital in developing and maintaining the state's innovation ecosystem.

C8. Institutional collaboration should be facilitated by an Incentive Working Group consisting of members of various government institutions as well as corporate representatives. The Working Group will advise legislators and staff on incentives, discuss specific incentive policies, and can act as ombudsmen addressing concerns of corporate investors in incentive application processes. Such a working group should work hand in hand – and ideally be an outcome from – the State's upcoming Economic Development Strategic Plan.

C9. Holders of investment incentives should be held responsible to report within the standard fiscal reporting system, even where "tax holiday" incentives exist. The Maine Revenue Service and DECD must make an explicit effort to coordinate both the provision of incentives and the Monitoring and Evaluation process.

C10. A review of incentives and purge of non-compliant companies should take place every year with a full fiscal review completed by an independent non-bias third party on a biannual basis.

C11. Programs that require fund matching should present clear guidelines for the types of matches allowed and should be reasonably consistent with federal guidelines where possible.

C12. The State should establish and ensure fixed program durations to allow for regular independent evaluation, assessing the program's relevance and benefits. This requires the full authority and capacity of the DECD or administering agency and should be implemented in its follow-up strategies. Program sunset dates should align with their evaluation periods.

C13. The State should work to resolve redundancy of incentive program evaluations. Currently two statutes assign program evaluation authority to two different entities: OPEGA and DECD. Found under Maine Rev. Stat. tit. 998 to 1001 AND MRSA Title 5, §13056-A.

The above recommendations provide a number of action items that can be implemented over time and provide a better incentive screening, data collection process, as well as institutional collaboration among various government departments of the State of Maine.

In addition to the items above, the following are general observations on the effective role for incentives, credits, and similar programs:

D1. **Continually Examine and Refine Economic Development and R&D Strategy:** It is important to have a coherent strategy for growth, with a clear role for how incentives and similar programs will emphasize comparative advantages of states or compensate for the lack of these comparative advantages. Maine has continued to move in this direction through the discussion of a Long-Range Strategic Plan for Economic Improvement in the State. Such a strategy will provide a sound basis for a thorough revision of the state's credits, incentives, and R&D assistance to make them a more direct operational expression of the state's strategy for economic sustainability and innovation.

D2. **Continue to Support Large Non-Profit Laboratories:** Private, non-profit research institutions are marquee institutions bolstering Maine's reputation and draw significant talent to the state. They are economic drivers and help set the tone for a successful R&D climate in the state. The institutions' presence also positively impacts the overall presence of angel, venture capital, and private equity involvement in Maine.

D3. **Better Refine the Role of Pure Research in the State's Development Strategy:** The State's lack of an economic development strategy makes it difficult to establish the role of funding pure research. As it stands, it is unclear whether the State considers pure research a priority. Many funding programs are geared towards the commercial development side of R&D because it is easier to measure the benefits when state-funded projects become commercialized. However, pure research can lead to discoveries that have commercial applications, even creating entirely new markets. Likewise, other non-research commercial interests choose to locate near pure research institutions because of spinoff benefits. The State needs *long-term vision* and *trust* in order to accept the beneficial nature of pure research, as opposed to a short-term focus on immediate returns which would warp expectations.

D4. **Improve Program Searchability:** Make sure to refer to programs consistently by their correct name. In certain cases, the names for the same programs are similar but not identical. This can make finding the correct program information difficult, especially if the name has changed over time, which may confuse potential incentive applicants. Ensure all programs accurately use metadata keywords and not exclusively use abbreviations so internet search engines can effectively find the program information.

D5. **Improve Accuracy of Program Data Online:** Ensure that programs have clear evaluation criteria, clear program requirements, and clear purge requirements listed on the program administrator's website. This transparency of evaluation procedures was specifically noted as an issue of concern for MTI in the past, though its website clearly walks through the application, review, and reporting process, listing all steps and applicable forms.

D6. **Develop Central Storage for Reporting Documentation:** Proper program evaluation requires obtaining as many recipient lists and as many annual reports from as many incentive programs as possible. Legislative changes should be made to allow the analyst team designated by the State of Maine to have full access to program data as required.

D7. **Program Confidentiality:** Legislative changes should be made to provide for full access to - and evaluation of - program data as required, whether this is performed internally by a program administrator, by a designated state agency, or by an independent evaluator under a confidentiality agreement. There appears to be a challenge to obtaining data where MRS administers part of a program for another economic development or R&D program administrator.

D8. **Work Collaboratively Across State Entities:** Organizations, economic development representatives, town and city leaders, and business leaders across Maine should work together for the betterment of the state. Furthermore, increased collaboration should encourage greater knowledge of programs administered by other institutions. This knowledge sharing would help businesses that approach an institution with a need for which the institution is ill-suited but can refer to an appropriate contact based on previous collaboration.

D9. **Understand Workforce Recruitment and Retention as an Economic Development Issue:** Retaining Maine's talent and attracting new talent is as much as a factor in economic sustainability and innovation as is attracting and fostering businesses. The University of Maine's recent efforts to recruit students from across New England is a useful first step. This should be augmented with other efforts to keep this talent in state.

D10. **Expand the Current Opportunity Maine Program:** Expand the current Opportunity Maine program (at a lower credit rate) to include recruited employees with Associate's and bachelor's degrees who move to the state of Maine, pay taxes in the State of Maine, and work in the State of Maine. As requested by the business community, consider expanding the program to certain master's and Doctorate degrees for attracting employees with critical skills needed by Maine businesses. Further, consider structuring this as a benefit to companies in their efforts to recruit talent to the state.

D11. **Work with Businesses to Determine Greatest Educational Need:** Businesses understand where their greatest talent needs will be over the next few years. The State should work with the businesses to help residents understand where future opportunities will lie, recruit into appropriate education tracks, and train to the current and future employment needs in the State of Maine.

D12. **Business Retention:** Consider adding a business retention program which would be tasked with both ongoing relationships with Maine companies and immediate retention action when required. Note that this program does not need to reside within DECD and may operate well in a public private partnership setting, such as the MEGC.

D13. **Consolidate Programs as Suggested in the Program Specific Recommendations Section:** Consider consolidating like programs administered by the same entity into one larger program. As identified in the section above, many of the tax credit programs are very similar or identical but geared towards a different type of company. These should be consolidated to enhance applicability, impact, and efficiency.

Implementation

As a means for implementing a general recalibration of the State's economic development and research & development efforts, we propose the following measures:

E1. As put forth in LD 367 - An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State, confirm the State's economic development goals and overall strategy, including a plan for coordinating business establishment, growth, retention, and attraction. This plan should contain a firm understanding of the State's advantages and disadvantages, the profiles of business types that this naturally attracts, and the motivations behind their location decisions. It should also include an explicit identification of the organization which will act as the coordinating entity for economic development activities and investments.

E2. Develop a coordinating team of individuals to include members of the Executive branch, the Legislature, and selected stakeholders to facilitate conversation and action on economic development and research & development activities. The current project's steering committee may act as the core for this team or could be assigned to the MEGC.

E3. Review the list of consolidation, expansion, reconfiguration, and elimination recommendations made above. Work with the State legislature to make appropriate program changes and to implement new mechanisms for reporting and for information sharing between and among responsible parties within the government of the State of Maine.

E4. Develop (or alter) enabling legislation for the new (or repurposed) Centralized Coordinating Agency for economic development activities and investments. This may take the form of something similar to the model used by Enterprise Florida, or it may be an entirely new concept. It may be created out of an existing organization or it may be new. Regardless, such an organization is recommended.

These measures should be taken alongside the State's continuing efforts to analyze the effectiveness of economic development and research & development programs in supporting Maine's continued economic sustainability and success. The current program – of which the current report is a component – provides an important periodic opportunity to evaluate results and change tactics based on data and on changing economic need.

Introduction

History of the Science and Technology Plan

The Maine Innovation Economy Advisory Board (MIEAB) was established in 2007 by Title 5, section 12004-I, subsection 6-G to coordinate the State's research and development activities and to foster collaboration among its higher education and nonprofit research institutions and members of the business community. MIEAB replaced the Maine Science and Technology Advisory Committee (MSTAC), which had been established by Executive Order in 2003 and generated the 2005 Science and Technology Plan. The original Science and Technology Plan was produced in 2001 by the Science and Technology Foundation.

Starting in 2010, the advisory board was tasked with developing a Science and Technology Plan beginning in that year and then every five years thereafter. MIEAB also was tasked with submitting yearly Science and Technology Plan updates.

Continuing Evaluation of State Incentives

The Investment Consulting Associates team (Team) was retained by the Maine Department of Economic and Community Development (DECD) to generate a series of action plan reports to examine the state's investments in both economic development and in research & development. Reports generated in 2014 and 2016, as well as the current 2018 version, are based on the format of the 2010 Science and Technology Plan with some modifications and additions. Major changes include:

- Moving definitions, abbreviations, and other general support/detailed sections to the appendices;
- Integrating Economic Development and R&D analysis, findings, and recommendations (recommendation from the 2014 reports); and
- Providing more direct, refined, and implementable action items.

The body of the current report contains summaries, general findings, and action items while the appendices contain the full research behind the concepts presented. This revised format was approved by the Department of Community & Economic Development and is intended to bring focus to:

- What is working and what does not work;
- Examination of competitive advantages, disadvantages, and opportunities;
- What changes need to be made or what actions need to be performed;
- Who will perform future activities; and
- When these activities should be completed.

Current Context

The 2018 report comes as bill **LD 367: An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State** proposed the creation of an economic development strategy for the State. This bill assigns the duty of

creating and implementing the long-range strategy to the Maine Economic Growth Council (MEGC) and also provides much needed funding to execute the directive. ICA welcomes this development since it has repeatedly called for this action in previous reports. It is important to establish a strategy which can set the proper context for future incentive program evaluation (and subsequent creation, modification, or elimination of programs).

Unfortunately, the bill does not specifically address the State's Research and Development (R&D) investment strategy while it also specifically calls for "maximizing the return on investment in the State." While we understand that accountability for public investments is a priority, the bill could create a hyper-metric environment that is not well suited for evaluating investments in pure research, a topic which will be expounded upon later in the report.

Vision

Incentives and special economic zones are among the most visible economic development tools available to attract new companies, expansions, or other forms of domestic and foreign direct investment. These tools complement a state or community's innate characteristics to enhance the overall competitiveness of the business climate. Likewise, direct investment on the part of the public sector can help nourish innovation and entrepreneurship. A successful competitive business climate positively contributes to a state's domestic economic development goals through job creation, capital investment, knowledge, and R&D creation with spill-over effects to quality-of-life.

The benefits of investments are highlighted and frequently cited by business owners, policy makers and politicians, yet less is known about how the benefits of these investments compare either directly or indirectly to the costs of incentives awarded to attract the investment. Greater knowledge of the role and efficiency of incentives to attract investment is required to gain insight into policy effectiveness and the return on investment for taxpayer's money. *This is even more urgently required when the situation is viewed against the background of increased public scrutiny of tax expenditures in general and corporate incentives in particular*.

Incentives have also increased in apparent importance due to changes in the technology and data used in the location selection process. Due to the widespread availability of location databases and associated tools, answers regarding workforce availability, logistics, infrastructure, and other major location drivers are often largely resolved before companies or their consultants contact local economic development agencies. As a result, the remaining open questions – usually incentives and real estate – appear to take on greater importance than perhaps is properly due.

As noted earlier, there is considerable scrutiny on the awarding of incentives and on direct public investment in private enterprise. As a result, there has been considerable debate on the effectiveness of such programs, resulting in three basic perspectives: the incentives have no impact, great impact, or that they are just but one component of a holistic location offering.

The academic view normally claims that incentives have little or no effect on investment decisions and location selection behaviors. A more industry-based perspective, however, usually claims that site selection and investment decisions are all about incentives. Between those two extremes is a more mixed and balanced view that claims that incentives do matter, but do so within a larger context of other business-based factors like competitiveness of business environment, industry, business activities of investment, investment motives, availability of labor and resources, access to market, etc.

Ultimately, there is a fixed set of reasons for governments to provide incentives to attract investment:

- To overcome a competitive weakness such as high costs or weak business climate (so-called site-equalization outlays);
- To promote investment in deprived areas;
- To attract particular industries;
- To correct for market failures in the provision of capital and risk-taking of companies; and
- To change the image of a location to convey a more pro-business and marketable message.

Broadly, the most successful incentive regimes – as measured by both financial return to the community and success in attracting, retaining, and nurturing economic growth – are those which have a well-coordinated suite of programs that are based in enhancing the region's existing strengths and in addressing target industries' specific business needs. A well-designed incentive regime should also provide tangible benefits for both the company ***and*** for the public sector; such that the community's competitive economic position is enhanced even if the specific deal or project in question does not meet its intended goals.

Steering Committees

Throughout this process, the evaluation team was able to access the experience and guidance of a steering committee made up of individuals with knowledge of the construction, implementation, and use of the programs in question. While separate steering committees advised the Economic Development and Research & Development aspects of the project, each were kept informed of progress throughout the evaluation cycle. The steering committees were formed in the Summer of 2017 and have met continuously on a bi-weekly cycle for Economic Development, and a monthly cycle for Research & Development. The steering committee members are:

Economic Development

- Michael J. Allen – Maine Revenue Service
- Peter DelGreco - Maine and Company
- John Endicott – Maine Department of Economic & Community Development
- Gervais, George – Commissioner, Maine Department of Economic & Community Development
- Amy Volk – Maine Senate
- Anne-Marie Mastraccio – Maine House of Representatives
- Brian Whitney – Maine Technology Institute

Research & Development

- Luann Ballesteros – The Jackson Laboratory
- John Endicott – Maine Department of Economic & Community Development
- Jim McManus – Bigelow Laboratory for Ocean Sciences
- Kevin Strange – MDI Biological Laboratory
- Brian Whitney – Maine Technology Institute

A Note on Transparency

Governments around the world over are making considerable efforts to ascertain and then demonstrate the true effectiveness of incentives, credit, and direct investment programs. The public sector wants to know what works, what does not, and what are ideal measures for the return on the investment. This information will provide critical guidance at a time when governments are increasingly mindful of budgets and need to maximize results to their communities and their electorate.

At the same time, companies and the general public alike are seeking clarity into how incentives are awarded and the mutual responsibilities that such programs require from both the granting community and the receiving company. Such transparency allows frank discussion on business needs and how the public sector can help attract companies. It can also help to build an understanding of the expectations made of (and by) companies as they invest in a community.

The study team has worked with many governments to comprehensively evaluate the economic development incentive programs used to attract and retain companies. Each project has been a robust review of costs, benefits, program goals, and outcomes. Important as well are proper institutional alignment, clear eligibility criteria development and monitoring and evaluation mechanisms that are workable. Additionally, the Team has produced a transparency index that uses a global incentives deal database to rank US states on the level of disclosure and the availability of information on how awards are granted.

Lessons learned from both areas are included throughout this and follow-on reports. This will also result in suggested best practices for the State of Maine and for its communities on to how construct and evaluate incentive programs that work effectively.

Analysis and Findings

Findings from Previous Studies

The team reviewed previous reports and documents prepared for the State to understand incentive and investment history in the State of Maine. One concern echoed by multiple entities is that this series of evaluation reports should be performed differently and to suggest new strategies for enhancing economic development within the State of Maine. While the present report does suggest new action items, many of these items were also presented in earlier reports but have not been enacted. Many are still relevant, and the team has included additional specific implementable action items to address these ongoing concerns as well.

Beginning in 2016 the required Economic Development report was merged with the Research and Development report. To include all incentive and investment programs in one report allows the reader and policy makers a more comprehensive opportunity to assess the State's efforts towards innovation and economic sustainability. Progress in the R&D field can and should still be analyzed by a slightly different metric than general Economic Development programs. However, placing the R&D section in the same report will not change the analysis method.

Some of the most frequently discussed concerns from previous reports are:

- Address the difficulty of navigating Maine's incentive programs to reduce confusion among current and potential business customers;
- Improve current collaboration efforts between DECD and its partners;
- Develop a better, more efficient company reporting mechanism;
- Develop a business support portal that can be accessed online and via phone;
- Improve marketing and outreach programs to promote existing programs and initiatives;
- Work with assisted companies to better quantify program impacts;
- Increase per capita income by increasing the skills of Maine workers;
- Reassess the PTDZ program to include specific performance requirements[3];
- Explore methods to increase willingness of local angels to invest in high tech;
- Increase Maine's total R&D/innovation;
- Develop Central Storage for Incentive Report Documentation;
- Ensure that checks and balances should be worked into the Legislative Mandate behind each of the incentive programs;
- Legislative changes should be made to provide for full access to and evaluation of program data as needed, whether performed by a State agency or by an independent third party under a confidentiality agreement;

[3] The current Pine Tree Development Zone program is scheduled to sunset in 2018. While no additional awards will be made under the program after that point, the State will continue to administer the programs for companies who have already received awards until 2028.

- Align the State's programs to emphasize the comparative advantages of the state or compensate for the lack of these comparative advantages;
- Develop a clear, transparent, and coherent common framework within each incentive program to facilitate coordination and harmonization where possible;
- Tailor the State's programs so that they are more directly aligned to operational requirements of companies and tap into the value chains of companies;
- Form an Incentive Working Group whose mission is to advise the state on incentive policy modifications and the concerns of corporate investors;
- Continue to seek ways to fill the funding gap between early stage research and full commercialization for small companies. This may take the form of adjustments to FAME programs, for example.

Findings from the 2016 Reports

The series of reviews in 2016 reiterated and expanded upon several of the same concerns found in earlier analyses, but also provided a series of additional suggestions. 2016 marked the first time that both the Economic Development and Research & Development reports were merged into one document, and the combination sparked further insights into Maine's strategy for economic sustainability:

- Companies reported that the current programs are generally effective in allowing them to grow faster than they otherwise would have and, in some cases, to sustain the company through difficult or changing business times. This finding is somewhat tempered by the frustration that companies and institutions alike expressed on the difficulty finding, understanding, applying for, and reporting on the State's programs.
- Companies also expressed a great deal of concern about the stability of incentive programs as well as the overall operating and regulatory environment in the state. Companies rely on a degree of stability and predictability in regulation to be able to plan effectively. It is important to acknowledge and accept that companies regard any award made as a contract between the company and the State. Such awards need to be recognized as commitments between the two parties for as long as the company remains in compliance and for the length of the award. To rescind payments for reasons other than compliance – in other words, breaking the contract - would significantly damage the State's reputation as a reliable partner that fulfils its own contractual obligations.
- Interviews, benchmarking, and other statistics strongly suggest that Maine should have a unifying vision for economic development and innovation that is shared by all state governing bodies. Interviewees in particular suggested that Maine would be well-served by putting forth a bold and assertive economic development strategy and executing it effectively.
- The State has difficulty supporting and assisting companies in the 20-100 employee range as currently available support programs do not directly address the most critical needs of companies of this size. These companies have a great need for soft service assistance to fill certain administrative roles that larger companies fill with a dedicated employee or department.

Many companies and institutions cited problems finding qualified workforce and suggested that the State should work to develop workforce skills and provide better transferrable skills.

- The state still does not have the embedded relationships between research, business, and finance inherent in innovation clusters/hubs like Route 128 Corridor in MA, the Research Triangle of NC, and Silicon Valley in CA. These relationships will need to be developed over time to ensure a long-term innovation advantage for the state.
- Several of the research institutions and start-up firms interviewed specifically noted that the metrics of R&D programs need to be held to a different timescale than that for other economic development programs. Likewise, programs need to be segmented so that pure research (as run by the state's universities and nonprofits) may be segmented from more commercial development programs.
- The DECD Portfolio Survey resulted in a very high completed response rate of over 70% and allowed for comprehensive cost benefit analyses of the programs:
    - BETR provided a positive IRR of 21.3%.
    - PTDZ - a program designed to attract businesses and expansions that would not otherwise locate or expand in Maine - showed a positive IRR of 122.5% (assuming all projects would not have happened BUT FOR the PTDZ)
    - FAME, which operates as a loan insurance program rather than as a credit or incentive, showed a positive IRR of 18.9% for CLI/ERLP. This is somewhat to be expected given the more commercial, fee- and interest-based design of the program.
    - MTI, the state's marquee program for direct investment in innovation, showed a positive IRR of 7.2% for the development loan program.
- All in all, Maine's incentive productivity is similar to that of New Hampshire, Vermont, and Rhode Island. Maine's number of incentive awards makes up 3% of all incentive awards in New England from 2010-2015. Maine's total value of awards represents 5.8% of the total amount awarded in New England. Likewise, Maine's total capital investment related to the incentive programs represents 4.1% of New England's overall incentivized capital investment. Maine's job creation related to incentive programs makes up 3.4% of New England's total creation affected by incentive programs.

Roundtable Discussions

A series of six roundtables were organized to discuss economic development and R&D incentive programs, as well as Maine's general business environment with companies and non-profits. The roundtable discussions were informal and semi-structured around general subject matter areas which allowed open discussion. The discussions frequently highlighted challenges and concerns around specific programs and the general business environment of the state.

Attendees of the roundtables utilized the following programs, though it should be noted that their knowledge of State resources outside the ones already being utilized was limited: MTI programs (Seed Capital Program, Cluster Initiative Program, Technology Asset Fund, Lightning Rounds); FAME programs; PTDZ; Maine Quality Centers; Maine International Trade Center; Community Block Grants; as well as SBA/SBDC programs.

Business Cycles

Businesses experience cycles of growth at a different pace depending on the market they are in, but most go through the same challenges. Young companies and those operating in cyclical markets must deal with revenue peaks and valleys, making growth more difficult to achieve due to variability. A roundtable participant noted that PTDZ helped the company through difficult business cycles by limiting the valleys to a manageable threshold, therefore enabling the business to continue operation.

Start-ups that reach a point of rapid expansion go through a different business cycle challenge: as they expand, the corporate culture needs to adapt to one with more structure and procedural knowledge. This often requires new and different management talent. Management talent becomes a critical factor to the success of start-ups in the rapid expansion phase. As noted by one company attracted by Maine & Company, middle management talent is difficult to find in Maine.

Experience in Maine

Maine's business environment is rife with challenges. Roundtable participants noted numerous difficulties, the geographic location of the state being one. Given its location, logistics is costly and challenging. Cost was a recurring concern for numerous participants. As one telecommunications company highlighted, the tax environment of the State is not competitive. Furthermore, the company's competitors are bringing in labor from the Midwest to complete projects because it is more cost competitive. Healthcare and other insurance costs are rising rapidly, and the cost of living in Maine is not truly competitive enough for attracting talent.

Some other challenges were mentioned, such as difficulty obtaining signage or finding manufacturing space, as well as the anti-development attitude of some localities. However, the foremost challenge facing the State of Maine is workforce.

Finding a quality workforce is difficult in the state. Some companies have not been able to find a way to leverage workforce development programs through the State. Companies need more people that simply are not present due to the state's demographic challenges. Indeed, coupled with very low statewide unemployment, the lack of available talent is a reason why some companies leave.

Talent recruitment from out-of-state is one way of mitigating a shrinking in-state workforce pool, but this solution faces its own difficulties. For highly skilled workers in the R&D field, for instance, it is a risk moving to Maine. The lack of density in population and companies means that there are not many options to fall back on if a company fails, whereas in high density areas, other employment options are easier to find. Individuals must be dedicated to their employer in order to accept the risk of moving to Maine.

There's a challenge retaining the student population as well. Many more students are coming from out-of-state, which is a benefit since the state is shrinking demographically. However, if these students do not stay, it is merely a temporary benefit, not a net benefit for the state. Students are unlikely to stay if they do not perceive employment opportunity.

R&D Discussion Points

A couple of roundtables were focused on the R&D investments being made by the State. For these, the non-profits and private companies benefitting from MTI programs were invited to participate in the discussion. A major point of discussion was the spectrum of activity R&D involves: some entities are focused on pure research, while others focus on development and commercialization. Jackson Labs and Bigelow Labs are focused on research, though both seem to be making more effort to commercialize discoveries through spin-offs or partnerships with existing companies. MTI funding helps the non-profits obtain material, equipment, and achieve proof of concept in their research.

A challenge facing the development and commercialization side is lack of business training among scientists and engineers. These individuals may have a market-worthy product in development but lack the proper management skills and leadership experience to usher the invention to success. Furthermore, when these R&D personnel get too tied up in operational work, it detracts from time being spent on their core strengths.

The State needs to explore ways of fostering partnerships between pure research institutions and commercial partners for development. There is not a strong enough connection between these two groups, and the relationship potential is underutilized. This idea was noted across multiple R&D roundtables. An example of how this relationship-building exercise can benefit both entities, as well as the State, is the collaborative partnership between Mook Sea Farm and Bigelow Labs.

The State also needs to adopt a strategy whose vision will recognize the value of pure research without a fixated focus on immediate returns. Both corporate and non-profits alike noted that it is difficult to quantify the impact of pure research, though this does not fit well with the legislature's traditional need for monitoring and evaluation of investment returns. The State should instead be focused on the broader implications of pure research and its multiplier effects.

State Employees

For the most part, state employees were held in positive regard. Particular staff members at the University of Maine, MTI, Maine & Company, and the governor's account executive team were mentioned as great assets. It was mentioned, however, that the DECD's staff was too small, limiting its capacity to undergo proactive efforts such as coordination and relationship building. The limited staff can only react to situations as they arise as a result.

Program Experiences

It was noted by law firms and consulting firms that clients often ask about incentives, indicating a lack of awareness of existing state resources. The administrative burden of applying and complying is intimidating for small and mid-sized companies. If the administrative burden is too much, the incentive program might be antithetical.

PTDZ

The simplicity and ease of getting PTDZ certified was commended. PTDZ helps companies stay in business given rising costs. Canadian peers have all sorts of government subsidies – even though PTDZ is not as comparable, it does help. On a negative note, one participant was given the impression by a

governor's account executive that the PTDZ program would have special electricity rates. When the company was PTDZ certified, the power company informed them that the special rates no longer existed, leading to a degree of disappointment. It is important that expectations are managed to within the actual benefits of the program.

Maine Quality Centers

Maine Quality Centers were often mentioned as an excellent resource. For one roundtable participant, this resource was touted as highly beneficial. Given employee turnover, it is expensive to train new workers. MQC helps with the cost of training through reimbursements. Training programs can be difficult to set up, but the service is worthwhile when used. This was noted several times. MQC is flexible but it cannot provide a custom program fast enough for what is often required by companies. There is a problem with MQC's capacity and variability (some locations can deliver well, while others cannot).

MTI Programs

MTI programs were frequently noted as helpful and bring numerous benefits. Apart from the funding itself, it allows the business owner to retain local control instead of giving partial ownership to out-of-state investors. Lightning rounds are useful and fast-working. An aquaculture company attributed MTI funding for research to what launched the company to a different level of predictability and growth. The development side of that research became the foundation of the business. It led to capital investment and reliable revenue streams.

There is a sentiment among smaller companies that they compete for the same dollars as larger companies or non-profit institutions. These companies are worried that if they go head-to-head with these larger organizations for the same funding, they will be overlooked.

FAME Programs

Complaints about the Seed Capital Tax Credit arose when a participant lamented that the program discriminates against family-owned businesses by prohibiting family investors. Furthermore, the point was raised that much of family investment keeps ownership in state, which should be viewed as a benefit to the state.

MITC

The Maine International Trade Center was stated as very proactive with a strong food export program which had helped some of the food processing and manufacturing roundtable participants.

Suggestions for Improving Business Climate

Roundtable participants suggested numerous improvements for the business climate in Maine. As noted earlier, the State should invest in management skills development and recruitment. If this is not addressed, successful start-ups may move elsewhere to source the growth management expertise located in different areas.

Status checks and aftercare efforts should be intensified since relationship building is an important factor in a demographically small state. It was suggested that MTI could focus more on this aspect. By acting as both a financial and management resource, the institution would be able to know when a

company is at an "inflection point" – thereby directing the company to appropriate resources elsewhere if MTI cannot provide assistance itself. Concerning these "inflection points," gap financing programs should have a portion prioritized to critical lifecycle events, moments where a company needs funding to expand or risk closure.

Awareness seems to be an important item of note. It was stressed that the State's institutions need to work on building awareness of their programs. Maine Quality Centers should be at the forefront of this effort. As a workforce recruitment and development institution, its services address the most pressing issue companies in Maine face: workforce. A participant unaware of MQC became animated and highly interested when learning about the resource at the roundtable event. This occurred at multiple roundtables.

The State needs a long-term vision of investment. It should refine the target sector strategy, but not at the exclusion of other businesses that are in need. Institutions and programs are not well coordinated. The State's business plan needs a coordinating agency – MEGC would be an appropriate fit for this role but lacks funding to do so.

Participants also noted that Maine needs to be telling more positive stories. It does not market itself well as a good business environment. More marketing would attract attention, capital, and talent. Other suggestions include: eliminating the service provider tax to make in-state service providers more competitive; and legislating more municipal power authorities so localities can exert more control on electric utilities, which are often seen as unreliable and costly.

Survey Results

A series of surveys were sent to DECD, MTI, FAME, and MRS program participants in the autumn of 2017. The purpose of these surveys was both to collect information necessary for the evaluation of the programs and also to collect insights from participants on the usefulness and possible improvement of the State's offerings. The analysis of the findings is based on data derived from the survey.

The initial survey period lasted three weeks, with the final deadline scheduled for 20 October 2017. Due to survey difficulties and slow response rates, the final deadline was extended by two weeks to 3 November 2017. During this time, program administrators (such as company representatives in the DECD, MTI, and FAME offices) worked tirelessly to increase survey participation. ICA answered specific questions helping those with difficulty completing the survey and handling general questions. The result turned out to be an improvement over years prior despite the numerous roadblocks along the way.

324 companies and organizations opened and started the Economic Development Survey. Out of these respondents, 311 (or 96%) completed the survey. During the last reporting period, only 209 out of 251 completed the Economic Development Survey (an 85% completion rate). This means that the survey reached 29% more participants (324 compared to 251) and received 48% more completed responses in

absolute terms (311 compared to 209).[4] Furthermore, larger sample sizes were obtained for PTDZ, FAME Commercial Loan Insurance, and MTI Development Loan program participants.

Responses by Program

Response by Program	Number of Responses (2017)	Number of Responses (2015)
PTDZ Responses	158	128
PTDZ Only Responses	90	61
BETR Responses	37	67
BETR Only Responses	5	12
FAME CLI Responses	32	4
FAME CLI Only Responses	22	N/A
MTI DL Responses	24	2
MTI DL Only Responses	2	N/A

Source: ICA calculations and survey

Additionally, three separate R&D surveys were sent to beneficiaries of MTI programs. Separate surveys were created based on the recommendation of the R&D subcommittee, which noted that in previous years the general economic development survey and the all-encompassing R&D survey asked questions that were often irrelevant. Indeed, the R&D activity of non-profits, universities, and private companies differ considerably, warranting more individualized questioning.

The Private R&D survey received 134 responses, while the Non-profit and University R&D Surveys received 6 responses in total due to the limited audience size. The R&D surveys enjoyed a 100% completion rate due to the brevity of the surveys compared to the larger, more complicated Economic Development Survey.

Survey sample characteristics

Survey	Number of Respondents	Completion Rate
Economic Development Survey	311	96%
Private R&D Survey	134	100%
Non-Profit R&D Survey	4	100%
University R&D Survey	2	100%

Source: Own calculations and survey

Please see Appendix F for the full survey results. The full survey write-up also contains a critique section with recommendations for survey improvement for the next round of incentives evaluation.

Annual Report Review Findings

Annual reports were retrieved from State departments' (e.g. DECD and Revenue Services) and organizations' (e.g. FAME, DECD and MTI) websites to evaluate the annual reports and traceability of incentive programs. A separate data request was not submitted this year as concerns about violating

[4] The survey two years ago measured completion rate by Part 1 and Part 2. Part 1 had an 85% completion rate, while Part 2 had a 77% completion rate.

confidentiality clauses in the various programs prohibited the analysis team from obtaining enough information for comparison purposes.

In order to consistently evaluate the extent to which annual reports are produced as well as the traceability of incentive programs, our team designed a template consisting of various elements that capture ease of access and quality of content. For each program, we evaluated the following questions:

1. **Availability of Annual Reports**
    - Does it (i.e. the program website) include annual reports in a location that you can readily find?
2. **Traceability**
    - Is there a program website you can find with an internet search?
3. **Content**
    - Does it include application process and forms online?
    - What are the target sectors of the program?
    - Are the benefits of the program clearly stated?
    - Are the eligibility requirements posted online and clear?
    - Are there any caps on benefits?
    - Open enrollment or periodic?
4. **Non-Compliance**
    - Does the program claim to purge non-compliant companies?

The results for each of the questions have been further analyzed and generalized below.

Availability of Annual Reports

In essence, programs that produced annual reports in 2014 continued to do so for 2015 and 2016. Some of the reports included useful but basic data on incentive recipients, budgets allocated, jobs created and jobs retained (e.g. FAME) whilst some of them disclosed little information regarding the incentives that had been distributed. DECD, in particular, does not include specific numbers for many of their programs, other than for the MITC. For some incentive administrators, data is available through annual reports which include data on not only the incentive programs but also other expenditures. For instance, for incentive programs registered by the MRS, the Maine State Tax Expenditure Report published by the MRS Department of Administrative and Financial Services provides useful data on its incentive programs but is incorporated in a wider report that covers all tax expenditures on income tax reimbursements, property tax reimbursements and sales and excise tax exemptions.

Traceability

Given the data difficulties, we focused on reviewing the traceability, ease of access and program-related information. One of the main concerns is the fact that programs and organizations registering incentive programs are often difficult to trace online. This can be related to both the name of the incentive programs – which may be too specific and need to be generalized – as well as the abbreviation of the administrative authorities. For instance, the MTI website could not be found by googling the commonly

recognized abbreviation MTI. The user instead must google Maine Technology Institute to reach the website. This could easily be remedied by changing the metadata keywords in the website.

Content

In terms of the content, most websites clearly listed targets, eligibility requirements and incentive benefits. These concepts are interrelated to a certain extent and should always be listed together. After all, even within incentive programs, the incentive benefits may be directly related with certain eligibility criteria. Such eligibility criteria usually relate to certain target industries as well as investment thresholds and are contingent upon the type of incentive. For instance, grants may have different structures where eligibility criteria are linked with certain benefits (i.e. amount of cash grant or tax credit) than loans (i.e. rates and loan amounts). Clearly, due to their specific nature, technical incentives usually do not impose strict eligibility criteria.

One element where incentive programs generally lack information relates to whether incentive benefits are capped. In certain cases, the potential incentive recipients need to look beyond the website information and comb through documents and laws to find out for which exact benefits its investment may qualify. This implies that, if potential investors do not look further than the website and/or have the resources and capability to study and understand the particular incentive legislation, incentive applicants may have different expectations of the incentive programs and benefits than they are actually eligible for. To solve this issue, exceptions, thresholds and caps that may apply to the incentive should be clearly listed on the website. This relates not only to the amount of incentives but also to the duration.

In addition, one element that is frequently overlooked is whether an (annual) application deadline applies. Some programs do explicitly mention application deadlines and whether the application to the incentive program is open year-round or only periodical accessible. Again, to avoid any confusion among potential incentive recipients, the website should clearly list whether applications can be submitted on a year-round or periodic basis.

In general, FAME had the best program traceability and content, listing all the critical details of the programs with applications in a structured, comprehensive, understandable and consistent manner (i.e. eligibility, benefits, types, terms, guarantees, fees, application process, application documents and application requirements). The FAME website and individual programs were easy to find with both a google search and from the homepage. MTI programs had the clearest information to accompany the online applications. For the most part, objectives, application procedures, and deadlines were clearly stated. The application review process was also clearly stated, however, their review process is in practice very labor-intensive and complicated. Nevertheless, for potential investors, it is critical to understand the application review process to anticipate and comply with (future) requirements.

Non-Compliance

Specific attention should be paid to non-compliance of incentive recipients (i.e. recipients that do not meet certain requirements agreed on prior to awarding the incentive). In general, there is little to no information describing any purge practices for non-compliant incentive recipients. Being a financial

institution, non-compliance for FAME by definition means expulsion from the program. However, it is not as straightforward for the other programs. For example, conversations with the PTDZ administrators found that PTDZ does purge non-compliant companies. However, this is not stated on the program website. It is important to describe purge circumstances and practices to purge non-compliant recipients so companies have the chance to comply with the requirements and are well informed regarding the consequences of not complying with requirements and eligibility criteria throughout the period in which the incentive is awarded[5]. Please note that just posting the requirements is insufficient. For accountability purposes, there needs to be dedicated legislation behind the requirements to allow the program to purge non-compliant companies.

Suggested Improvements

Concluding, both FAME's and MTI's website include elements necessary for best practice incentive program websites which may thus function as guides to other Maine incentive administrators as they look to improve their own program's traceability, program descriptions, eligibility criteria and benefits. Many of the suggested changes below are easily implemented with the assistance of the entity's web designer. Some of the changes recommended would take more effort. For example, posting an annual report is simple, but generating a report for a program that has not historically published a report is more difficult.

- Make sure to refer to programs consistently by their correct name. In certain cases, the names for the same programs are similar but not identical. This can make finding the correct program information difficult, especially if the name has changed over time, which may confuse potential incentive applicants.
- Ensure programs are listed on one dedicated website and prevent from overlapping websites (i.e. same programs listed on the website of multiple administrators) or, in case of necessity, cross-link between incentive program websites, especially where programs need to be mentioned on two different agency's websites for certain application or regulatory purposes.
- Make sure all programs accurately use metadata keywords and not exclusively use abbreviations so internet search engines can find the program information.
- Make sure all programs have updated program information on their respective websites. This relates to the annual reports (update the most recent annual report as soon as it is available) as well as to the application procedure (e.g. update the status of the incentive program in case the program changes to inactive or when a submission deadline has passed).
- Make sure program requirement information is updated, consistent and comprehensive if the program is described on more than one website or webpage or if the website includes multiple incentive programs.

Cost Benefit Analysis

Many US States make use of a set of fiscal and financial incentives to attract investment, and increasingly, legislation is forcing State Governments to conduct periodic reviews of these programs. In

[5] Or the immediate time afterwards. Some incentive programs require maintaining certain thresholds after the incentive has been fully distributed.

fact, 29 states have enacted legislation calling for the review of these incentives, 21 of which were put in place within the last five years.[6] Many of these reviews simply examine the performance of programs in terms of number of deals, job creation, capital investment, and cost. However, the reviews often do not capture the net benefit (or cost) that these programs bring to the State in terms of increased tax revenue. This review's effectiveness is, in essence, the outcome of a formula that incorporates the extent to which programs are being utilized and what economic development benefits are achieved at which financial costs. In other words, this assessment enables the State of Maine to be accountable for its investments by demonstrating if and how these investments bring about a positive return.

It is preferable to measure the direct and indirect costs and benefits by means of an Internal Rate of Return (IRR) simulation technique. The IRR is a measurement used in capital budget planning to estimate the profitability of potential or existing investments. In this case, the IRR measures the interrelated economic and financial impacts of the aggregated group of firms benefitting from the economic development or R&D program.

The additional personal income taxes and additional dividends taxes resulting from more jobs or higher dividends, as well as the additional corporate income taxes and sales taxes through increased local sales are direct benefits for the State of Maine. This type of financial modeling incorporates the dynamic economic effects over time (i.e. a 3- to 5-year period) and uses a more holistic approach towards the economic development indicators.

Similarly, from a cost perspective, it is necessary to assess what would have happened to Maine's economy if the specific incentive program was not provided at all. Economists refer to these as "counterfactual arguments". In other words, what would have been the direct and indirect financial consequences when, for instance, the number of retained jobs had to be deducted from the total headcount as a result of abandoning this program? How would this loss in employment impact the total labor costs, total sales revenues, and profitability, resulting in lower personal income taxes, sales taxes and corporate income taxes? Does this loss in tax revenue compensate for not having to spend public resources to finance this incentive program?

Four programs are included in this comprehensive Cost Benefit Analysis:

- Business Equipment Tax Reimbursement (BETR);
- Pine Tree Development Zone (PTDZ);
- MTI Development Loans (DL); and
- FAME Commercial Loan Insurance (CLI) together with Economy Recovery Loan Program (ERLP).

The methodology and results are outlined in the next sections.

Results of the Cost Benefit Assessment

The Internal Rate of Return (IRR) approach allows for a straightforward and consistent comparison of the positive (or negative) multiplier effects for Maine's economy over an extended period of time. In this case, the analysis shows the financial feasibility by calculating the amount of dollars the State of

[6] Pew Charitable Trusts, "How States Are Improving Tax Incentives for Jobs and Growth," 2017

Maine can expect in the form of additional tax returns for each invested dollar that was spent on the program over a period of three years. The financial amounts in previous years have been discounted at a rate of 5% (in order to adjust for inflation and opportunity cost) to present the current values (i.e. 2017).

The financial effects of *not* spending public funds have also been incorporated. Negative effects incur when companies are not able to retain their jobs as a result of not providing the program. Pro rata, the aggregated total sales output, total taxable income, and total amount of spendable income will be lower. Our analysis calculates the direct financial tax returns for the situation in which companies enjoy an incentive benefit versus a situation in which the same incentive program was not offered. In other words, if the program did not exist, the model captures foregone growth opportunity.

Input from Survey and Annual Report

Various sources have been used to augment the analysis and assist in the development of the CBAs. The two most important primary sources are annual reports of the respective programs and a survey of companies receiving state benefits. The survey contained specific questions to identify the direct and indirect benefits that can be calculated and attributed to the specific programs. In addition, the survey helped to identify important company-specific indicators such as, amongst others, total sales revenues, cost of sales, salary costs, headcount, ownership structure and geographical distribution of shareholders and sales. The averages per company were then multiplied with the actual number of companies certified for a specific incentive program to get an understanding of the aggregate totals, and then used to calculate the direct and indirect benefits of the incentive programs.

Other sources were consulted to validate important tax rates, such as corporate income tax, personal income tax, and sales taxes, as well as payroll and dividends tax. At the federal level, the Internal Revenue Service (IRS) provided corporate and personal income tax rates.

Labor cost statistics for different job functions in the State of Maine were sourced from the Bureau of Labor Statistics (BLS). Finally, business literature and trusted media sources such as Bloomberg, the Wall Street Journal, and others were consulted to verify commercial loan rates and other underlying financial ratios.

Cost Benefit Model Findings – Economic Development Programs

The direct benefits and costs (in the form of reduced tax revenues) for the State of Maine are differentiated into the following direct tax revenues:

- Corporate income tax;
- Personal income tax (through both employees added & retained, and pass-through for non-C-Corps);
- Dividends tax;
- Sales tax;
- Payroll tax; and
- Property Tax (BETR only).

A positive IRR suggests that the program is a financially viable investment for the State. However, incentive programs with negative IRR may still be important to the economy of Maine, albeit from a strategic, socio-economic, or community welfare perspective. Important indirect benefits in the form of additional capital investment, increased exports, and higher demand for local goods and services have been calculated in the CBA of each incentive program. The appendix also provides further details with regards to the specific methodologies, sources, assumptions, and cash flow calculations. The next sections strictly concentrate on the direct financial revenues (or losses) of the four programs.

Business Equipment Tax Reimbursement (BETR) – MRS

The primary objective of the Business Equipment Tax Reimbursement (BETR) program is to encourage capital investment into the State of Maine. Businesses engaged in public utilities, telecommunications, and cable television are generally excluded from participation in the BETR program.

Any business that paid assessed personal property tax on qualified business property is eligible under the BETR program and may apply for a reimbursement of the property tax paid. The reimbursement rate is 100% for the first twelve years and falls incrementally to 50% at year 18 and all subsequent years. Eligible business property[7] includes property used or held exclusively for a business purpose and which is subject to an allowance for depreciation or - in the case of construction-in progress or inventory parts - would be subject to an allowance. This business property should be first placed in service in the State of Maine after April 1, 1995 but before April 2, 2007. Certain retail property[8] placed in service after April 1, 2007 may also qualify. All other property newly placed in service after that date that was previously eligible for BETR will be eligible for Business Equipment Property Tax Exemption (BETE) program.

As such, retail business equipment continues to qualify under the BETR program while all other property is eligible for BETE. Recent tax reform proposals have recommended closing out the BETR program and to integrate all non-retail property currently in the BETR program into BETE though these have not been finalized.

However, the application period for BETR refunds of property tax paid during 2016 ran from August 1, 2017 through January 2, 2018. Hence, this CBA specifically focuses on the BETR program though it may be advised to start a CBA for the BETE program in the future as BETR reimbursements will be gradually phased out as old business equipment is replaced with new property eligible for the BETE program.

The results of the CBA and the IRR for the BETR incentive program are portrayed in the table below.

BETR CBA benefits for the State of Maine, with and without incentives

Benefits for State of Maine		With Incentive		Without Incentive
Corporate income tax	$	11,472,074	$	4,798,633
Personal income tax	$	539,346,868	$	208,611,030

[7] Eligible business property does not include land or buildings, components or attachments to a building used primarily to serve the building, land improvements, office furniture (placed in service after 1996), lamps and lighting fixtures (placed in service after 1996), and gambling machines and devices.

[8] Property located at a retail sales facility and which is used primarily (more than 50% of the time) in a retail sales activity.

Benefits for State of Maine	With Incentive	Without Incentive
Dividends tax	$ 24,179,231	$ 22,481,811
Sales tax	$ 155,038,287	$ 64,850,683
Payroll tax	$ 155,619,565	$ 59,572,104
Property tax	$ -	$ 113,935,147
Tax Revenues	$ 885,656,025	$ 474,249,407
Cost of administrating the program	$ 309,704	$ -
Direct Revenues after incentive costs	$ 885,346,321	$ 474,249,407
IRR Incentive Program: Direct Benefits	**86.7%**	

Source: ICA calculations

BETR Findings

The IRR of the BETR program equals 86.7%, which implies a return of nearly $1.867 on each dollar invested in the BETR program by the State of Maine or $0.867 of additional tax revenue recognized by Maine for each dollar spent. The positive IRR demonstrates the multiplier effects (i.e. additional tax revenues due to increase in employment and job retention) minus the direct costs related to administering the BETR program outweigh the scenario without provision of the BETR incentive program, leading to a loss of employment and negative effects for not having spent public money. Aggregating the property tax reimbursements for the last three years at a discount rate of 5% equals $113.9 million, which can be considered as tax revenue forgone. This, together with the tax revenues in the scenario without BETR incentives (i.e. $474.3 million) does not compensate, however, the additional tax revenues for corporate income, personal income, dividends, sales, and payroll as a result of the provision of the BETR incentive (i.e. $885.7 million). Higher corporate and personal income tax revenues can be explained by the fact that the BETR reimbursement (all other things being equal) improves the bottom line and, therefore, tax liability.

A total of 367 companies have been certified as BETR recipients in 2014 while this number equaled 319 and 335 for 2015 and 2016, respectively. This annual data has been collected through fiscal reports retrieved from the MRS and enabled to calculate more realistic aggregated level of data on BETR recipients. In previous versions, due to an absence of such annual data, an average had been calculated for every year. The ability to include specific data for 2014, 2015, and 2016 can be considered an improvement compared to previous versions of the CBA BETR as it makes the data and, therefore, IRR more accurate.

Initially, the BETR CBA was constructed based on data of a sample of 34 companies that participated in the BETR program and completed the survey. It appeared Bath Iron Works was one of the BETR recipients that completed the survey. Bath Iron Works alone represented about 50% of all the jobs of the 34 BETR companies, therefore considerably skewing the results of the BETR CBA. Given the disproportionality large impact of Bath Iron Works on the BETR sample averages, it was decided to omit Bath Iron Works to ensure accuracy of data of average BETR recipients and to provide a more conservative CBA.

In terms of employment, it seems the 33 BETR companies on average created 8.7 new jobs per year as a direct result of the BETR program while they retained an average of 65.7 jobs per year. Converging this into actual numbers for the entire BETR program (i.e. average of 340 BETR recipients per year for 2014 to 2016) leads to an average of 2,972 new jobs per year and the retention of 22,366 jobs per year. These considerable numbers of newly created jobs and retained jobs contribute to the strong IRR of the BETR program.

The IRR of 86.7% is valid for a scenario where a sensitivity rate of 100% has been applied. This has been taken as point-of-departure since it is the "worst" scenario for the State of Maine, meaning all BETR recipients would have retained and/or expanded their labor force anyway regardless of the BETR incentives. Reducing this sensitivity rate to 50% - which is more realistic than 100% - yields an IRR of 202.2%, which implies a return of nearly $2.02 on each dollar invested in the BETR program by the State of Maine or an additional tax revenue of $1.02. This demonstrates the jobs that have been retained and created in the scenario with BETR incentives even lead to larger additional tax revenues than in the scenario without the provision of the BETR incentive.

In short, the BETR program has been shown to effectively improve the economic development environment in the State of Maine, while also providing a positive financial return on investment of $1.867 per dollar spent to the State of Maine.

Pine Tree Development Zone (PTDZ) - DECD

The Pine Tree Development Zone (PTDZ) program may offer eligible beneficiaries a combination of tax credits, reimbursements, and exemptions that considerably reduces or virtually eradicates a number of state taxes, including corporate income tax, sales tax, and payroll tax.

Businesses eligible for the PTDZ must meet a certain set of criteria:

1. Businesses must create new, quality jobs to qualify for the PTDZ program. Such a job is defined as a newly created job that meets certain income requirements for that particular year while also featuring access to a group health care plan and retirement benefits. The income requirement stipulates the income of the new job measured as the income derived from employment (IDE) or employee earnings, and employer payments toward employee benefits including retirement, health insurance, education, and dependent care, must exceed the per capita personal income for the respective county in which the job is created.
2. Businesses that create these jobs must be engaged in certain sectors in to qualify for the PTDZ program. These sectors include biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, manufacturing and precision manufacturing, information technology (IT), and financial services.
3. Finally, business that create these jobs and are active in these selected sectors must be located in certain municipalities in order to qualify for the PTDZ program. These municipalities determine the extent to which businesses receive benefits under the PTDZ program. Two types of locations can be distinguished:

- Tier 1 - Municipalities in all counties of the state except Cumberland and York counties, plus the municipalities in Cumberland and York counties that have an unemployment rate that is at least 15% higher than the local labor market unemployment rate for the calendar year. Qualified businesses located in Tier 1 locations are eligible for tax benefits for up to ten years.
- Tier 2 - Municipalities that do not qualify for Tier 1 designation. Income tax, franchise tax, insurance premiums tax, sales tax and the ETIF benefits of Tier 2 PTDZ businesses are limited to five years.

Eligibility for Tier 1 and Tier 2 used to vary per year. As a result, there is a different set of municipalities in Cumberland and York Counties that are eligible for Tier 1 and Tier 2 each year. DECD produced lists of municipalities within Cumberland and York counties that were eligible for Tier 2 status rather than for Tier 1 status.

However, as per the sunset provision in 30-A MRSA §5250-J (5), Tier 2 designation is no longer available in Cumberland and York County municipalities for new businesses applying for the PTDZ program as of January 1st, 2014. This implies no Tier 2 PTDZ certifications have been awarded from the beginning of 2014 onwards though beneficiaries already certified under Tier 2 will be grandfathered and will continue to receive PTDZ benefits. This has serious implications for the PTDZ CBA as previous versions of the PTDZ CBA made a clear distinction between Tier 1 and Tier 2 designations.

The expiration of Tier 2 designation has been incorporated in the model to further guarantee the soundness of the PDTZ CBA. The assumption is that any business that received PTDZ certification in a Cumberland or York County municipality in or after 2014 now qualifies as Tier 1 recipient[9] while business previously (i.e. in or prior to 2013) certified in Tier 2 municipalities in Cumberland or York County will continue to receive the Tier 2 PTDZ status. This distinction has been made based on actual PTDZ recipients' data received from DECD.

Therefore, we calculated the distribution of Tier 1 and Tier 2 designation for 2014, 2015, and 2016 based on two calculations:

1. Companies certified in or before 2013 that still receive PTDZ incentives and which are located in municipalities in Cumberland or York County have been classified as *Tier 2* recipients (based on lists of municipalities within Cumberland and York counties that were previously eligible for Tier 2 status rather than for Tier 1 status).
2. Companies certified in or after 2014 that receive PTDZ incentives located in municipalities in Cumberland or York County have been classified as *Tier 1* recipients.

The table with PTDZ recipients shows the gradual phasing-out of Tier 2 recipients as a result of the expiration of Tier 2 designation on December 31st, 2013. Tier 2 recipients still represent 35.8% of all PTDZ recipients in 2014 while their share reduced to 25.0% in 2016 as no new certifications for Tier 2 have been granted and hence only includes Tier 2 recipients certified in or prior to 2013.

PTDZ distribution of Tier 1 and Tier 2 recipients

[9] Eight municipalities in Cumberland County and 17 municipalities in York County as of 2017

PTDZ Recipients	2014		2015		2016	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Tier 1	172	64.2%	185	69.0%	153	75.0%
Tier 2	96	35.8%	83	31.0%	51	25.0%
Total	**268**	**100.0%**	**268**	**100.0%**	**204**	**100.0%**

Source: ICA calculations

Once businesses have met these criteria and qualify for the PTDZ program, they may claim the following forms of fiscal incentives:

- Corporate income tax credit of 100% in years one to five and 50% in years six to ten for Tier 1 municipalities but only 100% in years one to five for Tier 2 municipalities.
    - Tier 1: (5yrs x 0% x 8.92%) + (5yrs x 50% x 8.92%)/10yrs period. This results in an effective corporate income tax rate of 2.23% during the ten years the eligible company located in Tier 1 receives PTDZ benefits.
    - Tier 2: (5yrs x 0% x 8.92%)/5yrs period. This results in an effective corporate income tax rate of 0.00% during the five years the eligible company located in Tier 2 receives PTDZ benefits.
- Elimination of property sales & use tax as set forth in 36 M.R.S.A. § 1760(87). This applies to sales of tangible personal property made on or after July 1, 2005, to a certified PTDZ business "for use directly and primarily in one or more qualified business activities." Tangible personal property that is taxable usually includes items like portable machinery and equipment, office furniture, tools, vehicles, and supplies held by businesses.
- Employment Tax Increment Financing (ETIF), which assists in financing business investment projects that create at least five net new, quality jobs in the State of Maine as described above. ETIF benefits include an 80% tax reimbursement which refunds state income tax withholdings from the net new payroll for up to ten years.

The results of the CBA and the IRR for the PTDZ incentive program are portrayed in the table below.

PTDZ CBA benefits for the State of Maine, with and without incentives

Benefits for State of Maine	With Incentive	Without Incentive
Corporate income tax	$ 72,810,057	$ 283,529,445
Personal income tax	$ 1,153,033,053	$ 571,511,933
Residents dividends tax	$ 339,659,123	$ -
Sales tax	$ 1,811,863,777	$ -
Payroll tax	$ 19,956,762	$ -
Direct Tax Revenues	$ 3,397,322,772	$ 855,041,378
Cost of administrating the program	$ 736,518	$ -
Direct Revenues after incentive costs	$ 3,396,586,254	$ 855,041,378
IRR Incentive Program: Direct Benefits	**297.2%**	

Source: ICA calculations

PTDZ Findings

The three integrated fiscal benefits of the PTDZ program in the form of a corporate income tax exemption, sales and use tax exemption, as well as the reimbursement of payroll taxes leave different marks in the direct financial revenue streams. As stated by the "but for" language in the PTDZ contract signed by each company, the table assumes that all companies participating in the program would not have gone forward with their investment or expansion project without the PTDZ incentive (i.e. a sensitivity index of 0%).

The IRR of the PTDZ CBA equals 297.2%, which results in a return of $3.972 on each dollar invested in the PTDZ program by the State of Maine, implying $2.972 of additional tax revenue generated by the PTDZ program for the State of Maine. As mentioned, this is the case in the scenario where all PTDZ recipients would not have realized their investment or expansion in the absence of the PTDZ program and, as such, is the most favorable scenario.

The corporate income tax and personal income tax revenue forgone does not outweigh the additional tax revenues generated as a result of the corporate investment or expansion as a direct result of the PTDZ incentives. This is particularly true for the personal income tax revenues, which equal $1.15 billion, largely driven by an expanded pool of larger companies of which a significant portion is structured as S-Corporation, LLC, and LLP as income is passed directly to the business owners and taxed at the personal income tax level. The high value of sales tax revenue of $1.81 billion is driven by increased sales in the State of Maine and therefore fully paid by consumers on the sales-side. After all, buy-side sales tax is paid by companies, which are exempted from sales tax under the PTDZ program. These additional sales would not have been generated in the absence of the PTDZ incentives.

However, as mentioned, this scenario is the most favorable as it features a sensitivity rate of 100%, assuming all companies have invested or expanded their operations but for the PTDZ incentives program. A sensitivity analysis can be performed to provide a more realistic picture of the PTDZ program as can be found in the table below.

PTDZ sensitivity analysis and the corresponding IRR

PTDZ Sensitivity Analysis	IRR	Return on one dollar spent (rounded)	Additional revenue recognized by Maine for each dollar spent
0.0% (0 out of 10 would have conducted the project anyway)	297.2%	$3.97	$2.97
10.0% (1 out of 10 would have conducted the project anyway)	275.6%	$3.76	$2.76
20.0% (2 out of 10 would have conducted the project anyway)	241.8%	$3.42	$2.42
30.0% (3 out of 10 would have conducted the project anyway)	202.5%	$3.03	$2.03
40.0% (4 out of 10 would have conducted the project anyway)	162.9%	$2.63	$1.63
50.0% (5 out of 10 would have conducted the project anyway)	126.2%	$2.26	$1.26
60.0% (6 out of 10 would have conducted the project anyway)	94.0%	$1.94	$0.94
70.0% (7 out of 10 would have conducted the project anyway)	66.5%	$1.66	$0.66
80.0% (8 out of 10 would have conducted the project anyway)	43.3%	$1.43	$0.43
90.0% (9 out of 10 would have conducted the project anyway)	24.1%	$1.24	$0.24
100.0% (10 out of 10 would have conducted the project anyway)	7.95%	$1.08	$0.08

Source: ICA calculations

The PTDZ sensitivity analysis reveals even in the worst scenario – where all investors would have invested or expanded regardless of the PTDZ incentives (i.e. sensitivity rate of 100%) – the IRR is positive with a value of 7.95%.

The fact that a large portion of income of PTDZ recipients is taxed at the personal level (i.e. through S-Corporation, LLC, and LLP structures) contributes to the strong performance as it is mostly revenue from corporate income tax which is forgone in the scenario where the PTDZ incentives are provided. The implication is that even the additional tax revenues due to an increase in personal income tax and, to a lesser extent, resident dividend tax revenues outweigh the revenue forgone for corporate income tax, sales tax, and payroll taxes in combination with the administration costs, albeit marginally (only $0.08 additional revenue).

The PTDZ program (assuming a 100% sensitivity rate) is at break-even if the share of C-corporations is raised to 41.3% with a remaining share of 58.7% for S-corporations, LLC, and LLP structures. From this share onwards, the portion of revenue forgone from corporate income tax starts to overtake the additional tax revenues, turning the IRR into a negative figure.

Nevertheless, the overall finding is that the PTDZ program has a great economic impact on the State of Maine as it provides additional revenue worth $2.97 per dollar spent to the State of Maine in the scenario where companies would not have expanded and invested in the absence of the PTDZ program or still $0.08 in the case where all PTDZ companies have misinterpreted the "but for" clause in the PTDZ contract.

Commercial Loan Insurance (CLI) and Direct Loans - FAME

The CBA evaluates the financial feasibility of two loan programs provided by FAME:

1. Commercial Loan Insurance (CLI); and
2. FAME Direct Loan.

Commercial Loan Insurance

The Commercial Loan Insurance (CLI) program is one of FAME's pillars next to Business Loans, Agricultural Loans, Equity Capital/Tax Credit, and Bonds programs. CLI insures 90%[10] of loans made to an eligible business by participating financial institutions. These financial institutions must have signed a master Loan Insurance Agreement with FAME.

Any business located in the State of Maine is eligible for the CLI program except for businesses engaged in gambling, adult entertainment, residential housing, investment real estate, religious or fraternal organizations, and personal, family or household expenses. Potential lenders can select two ways of applying for the CLI program:

1. Traditional Application Process; and
2. Online Answer Application (OLA) Process. The OLA process enables lenders to apply online for a loan insurance of up to $750,000 and receive an immediate response.

[10] Up to 100% available for loans to veterans.

Loan insurances available for both traditional and OLA applications come in two forms:

1) Pro rata - Covers a percentage of lender's loss after a default and liquidation, up to 100%.
    a. Term loan insurance (in one-, three-, and five-year options).
        i. Traditional: up to 90% of a lender's loan with a maximum FAME exposure of $5,250,000.
        ii. OLA: 75% maximum insurance up to $500,000 FAME exposure and 60% maximum insurance for FAME exposure between $500,001 and $750,000.
    b. Line of credit loan insurance (in one- and three-year options) of up to 90%.
        i. Traditional: up to 90% insurance with a maximum FAME exposure of $1,000,000.
        ii. OLA: 75% maximum insurance up to $500,000 FAME exposure[11] and 60% maximum insurance for FAME exposure between $500,001 and $750,000.
2) Leveraged - Covers 100% of lender's loss or up to 25% of the loan balance at the time of default.
    a. Term loan insurance (in one, three-, and five-year options).
        i. Traditional: up to 25% insurance on a leverage basis (up to $2,500,000) with a maximum FAME exposure of $5,250,000.
        ii. OLA: up to 25% insurance with a maximum FAME exposure of $250,000.
    b. Line of credit loan insurance (in one- and three-year options) of up to 20%.
        i. Traditional: up to 20% insurance with a maximum FAME exposure of $1,000,000.
        ii. OLA: up to 20% insurance with a maximum FAME exposure of $250,000.

FAME's aggregate exposure per related entity (borrower/guarantor) in OLA is $750,000. This can be a combination of pro-rata and leveraged insurance with a $250,000 limit on leveraged insurance.

A number of fees apply to each of the loan insurance programs. These fees include commitment fees as well as insurance fees and vary from 0.5% to 1.0% for the former and 1.0% to 2.5% for the latter. The exact height of these fees depends on the type of application (i.e. traditional or OLA), type of insurance (i.e. pro rata or leveraged), type of loan amount (i.e. term of capital line), FAME exposure amount, and duration.

FAME Direct Loan

The FAME Direct Loan is one of FAME's Business Loans programs and is the former Economic Recovery Loan Program (ERLP). It facilitates access to flexible gap financing for both start-ups and existing businesses when traditional loans are not the solution.

Businesses that look to qualify for participating in the FAME Direct Loan program need to be based in Maine, demonstrate their reasonable ability to repay the loan, and provide evidence other sources of finance have been exhausted.

[11] 60% maximum insurance for start-ups (businesses open less than one year).

Once a business is eligible for capital through the FAME Direct Loan program, it may receive a loan up to $1,000,000 if substantial public benefit is demonstrated and sufficient funds are available. Most FAME Direct Loans, however, do not exceed $500,000.

Interest for these loans is set at a fixed rate as it includes the Wall Street Journal Prime plus 2%, at time of loan commitment. The term of a loan equals a maximum of five years. Finally, a commitment fee of 1% applies to the borrower.

The results of the CBA and the IRR for the CLI and FAME DL incentive programs are portrayed in the table below.

CLI & FAME DL CBA benefits for the State of Maine, with and without incentives

Benefits for State of Maine	With Incentive	Without Incentive
Corporate income tax	$ 3,295,429	$ 2,034,526
Personal income tax	$ 98,592,760	$ 57,235,203
Residents dividends tax	$ 600,929	$ 7,082,685
Sales tax	$ 73,883,371	$ 36,465,479
Payroll tax	$ 26,819,073	$ 15,446,278
Direct Tax Revenues	$ 203,191,562	$ 117,320,217
FAME Revenues from CLI	$ 1,108,004	$ -
FAME Revenues from FAME Direct Loans	$ 782,994	$ -
Cost to cover for default	$ 1,463,716	$ -
Cost of administrating the program	$ 8,338,864	$ -
Direct Revenues after incentive costs	$ 195,279,980	$ 117,320,217
IRR Incentive Program: Direct Benefits	**66.5%**	

Source: ICA calculations

CLI & Direct Loan Findings

Annual reports received from FAME provided data on actual CLI and FAME DL recipients, which was used in combination with data received from the survey. For the most recent year for the CBAs, 2016 (for which the annual report of FY2016 has taken as proxy), a total of 237 Maine businesses were granted CLI support worth $37 million, leveraging approximately $67 million of financing. This supported the creation and retention of nearly 3,000 Maine jobs (i.e. 2,963). Based on the previous years, an average share of 19.1% of these jobs was new, leaving a share of 80.9% of retained jobs. For 2016, these numbers would be 566 new jobs and 2,397 retained jobs, which are important drivers of revenue streams in the CLI & FAME DL CBA.

CLI annual distribution loan insurances

	No. of Business Assisted	Dollars of Fame Exposure	Dollars Leveraged	Total Jobs
FY2016	237	$37,000,000	$67,000,000	2,963
FY2015	251	$42,000,000	$72,000,000	2,444
FY2014	253	$26,000,000	$47,000,000	2,426

Source: ICA calculations

A same comparison can be made for the FAME DLs. FAME provided gap financing to 30 Maine businesses affected by their current economic situation. These 30 loans totaled an amount of $5.1 million and supported the retention of 403 jobs. After all, these jobs would have been lost if no finance would have been given to these businesses heavily affected by their current economic situation.

FAME DL annual distribution loan insurances

	No. of Business Assisted	Dollars of Fame Exposure	Total Jobs
FY2016	30	$5,100,000	403
FY2015	20	$5,000,000	802
FY2014	22	$4,000,000	428

Source: ICA calculations

The ratio between pro rata and leveraged loan insurances could be estimated based on data received from FAME, where calculations revealed 10.1% of the active CLI loans were issued as leveraged loan insurance with the remaining 89.1% as pro rata loan insurance. This distribution was used for all three consecutive years. This is critical input for the entire CBA as well.

Both FAME programs show a strong and positive IRR of 54.7% (with a sensitivity rate of 100%). An important driver is the direct FAME revenues of both programs as they each include annual fees, application fees, and commitment fees. Combined, these revenues equal approximately $1.89 million. These revenues are, however, outweighed by the cost to cover for default as well as the administration costs, which combined amount up to $9.80 million.

Based on an average CLI loan insurance of $156,118 (for 2016), this results in an annual effective fee of 1.20% per year equivalent to an amount of $1,873.[12] Similarly, the effective fee rate for the FAME DL, based on a five-year payback term is 2.5% in addition to the commercial rate of 6.75%.

If the FAME programs had not existed, 403 FAME DL jobs (all are considered retained jobs) and 2,397 retained jobs of the CLI program would have been lost in 2016 alone. This considerably lower headcount would generate lower sales revenues, and therefore also lower tax revenues generated by corporate and personal income tax in the absence of both FAME programs. This is demonstrated by the higher tax revenues for corporate income and personal income in the scenario where both FAME programs are provided (i.e. $3.30 million and $98.6 million, respectively) than in the scenario where the incentive program would be absent (i.e. $2.0 million and $57.2 million, respectively).

Indeed, it is the high number of retained jobs that really drives the positive IRR of both FAME programs, which is furthered by high additional tax revenues. As such, the combined programs result in an additional revenue of $0.67 for each dollar spent, generating a considerable economic impact on Maine's economy.

[12] This rate is calculated based on a 10 year payback term.

Cost Benefit Model Findings – Research and Development

Direct investments in Research and Development are traditionally designed to spur the creation of new, commercially-viable ideas and products, to enhance the formation of new industry clusters, or to facilitate the growth of innovating companies.

As with several of the Economic Development programs described earlier, one of the R&D programs may be evaluated using traditional CBA methods; that of the Maine Technology Institute (MTI) Development Loans. Other MTI programs are targeted at much earlier stage companies and are not effectively evaluated using traditional CBA methods.

Development Loans (DL) - MTI

Development Loans of up to $500,000 are offered three times a year to fund later stage R&D activities leading to commercialization of new products such as prototype development, testing, and manufacturing pilot projects. All projects must fall under one of Maine's seven technology sectors and require matching investments of 1:1. Loan repayment is triggered by commercialization of the technology. An interest penalty is incurred if the loans are not repaid within two years of commercialization. MTI administers this soft-loan program and during the 2014 – 2016 period, the institute approved 42 business projects and provided just over $11.5 million in conditional loans, leading to an average DL investment of $273,996.

Several DL funding categories were incorporated into the CBA, as with the previous round of evaluations. Two types of companies engaged in later stage R&D activity and preparation for sale of new product/service and process are eligible for DL funding. These include:

- Established private or publicly traded company
    - Option 1: Low-interest unsecured subordinated 5 years note. This yields an effective interest rate of 4.2%.
    - Option 2: 0% interest until 3 years post commercialization; 4 years low-interest unsecured subordinated note. This yields an effective interest rate of 2.4%.
- Start-up or early stage company:
    - Option 1 (only): 0% interest until 3 years post commercialization; 4 years low-interest unsecured subordinated note. This yields an effective interest rate of 2.4%.

According to the Evaluation of Maine Technology Institute Programs 2013 report, the distribution between the established private or publicly traded companies on one hand, and start-up or early stage companies receiving DLs on the other, is 38% against 62%, respectively. This assumption was maintained for the time period between 2014 and 2016.[13] It has been assumed half of the established private or publicly traded companies selected DL Option 1 while the other half selected DL Option 2 (i.e. 19% each). As a result, the weighted interest rate for DLs can be calculated using the formula (19%*2.4%) + (19%*4.2%) + (62%*4.2%), which yields a rate of 2.74%. In addition to these DL funding categories, the Business Accelerator Grant was included.

[13] Break-downs of company stages could not be found in subsequent Annual Reports

Because start-up or early stage companies have seven years from commercialization to repay the loan, only the difference between the commercial interest rate, which is set at 6.0[14]%, and the effective DL interest rate (i.e. 2.74%) results in a direct loss of revenues. Adding the costs to administer the DL program results in the total costs of this incentive program.

Case Study

MTI's statutory purpose is to "encourage, promote, stimulate and support research and development activity leading to the commercialization of new products and services in the State's technology-intensive industrial sectors to enhance the competitive position of those sectors and increase the likelihood that one or more of the sectors will support clusters of industrial activity and to create new jobs for Maine people."

How do MTI's efforts align with its legislative mandate? The legislative mandate includes minimal information on how the organization should be run. The Institute hosts seven technology boards in addition to administrating ten different funding programs. MTI is the focal point of the State's R&D incentive efforts. While tax credits available from MRS encourage R&D efforts, the Institute encourages growth in a more active, collaborative and hands-on way. Given that its efforts align with its statutory purpose, MTI is true to its mandate.

DL Findings

As the majority of DL recipients are start-up or early stage, they have not yet reached a stage of profitability. Indeed, for the recipients surveyed, expenses exceeded revenues. This means that the DL program does not create direct benefits through additional corporate income tax revenues or through increased tax liabilities passed through to the personal income tax level because these companies do not have income tax liabilities. Furthermore, because corporate and personal income tax liabilities are non-existent, this also means that residents dividends tax liabilities are absent: without profits, dividends are not paid.

For this reason, the model only captures revenue benefits that comes with job creation and retention. DL recipients employ just over 14 FTE and PTE employees on average but expect to add an additional 4.5 jobs per year. This is not surprising given the start-up and early stage nature of most DL recipients. For the DL program, jobs created and the gross income effects outweigh the costs of the DLs. This is reflected by the strong contribution of the personal income tax revenues and payroll tax revenues to the state of Maine, creating a positive IRR for the program.

The IRR shows a positive percentage of 4.2%, a return of just over $1.04 on each dollar invested in the DL. The results of the CBA and the IRR for the DL incentive program are portrayed in the table below.

DL CBA benefits for the State of Maine, with and without incentives

Benefits for State of Maine	With Incentive	Without Incentive
Corporate income tax for the State of Maine	-	-
Sales Tax revenues	$1,806,895	$1,205,702
Personal income taxes for the State of Maine	$3,643,460	$1,856,387
Residents dividends tax	-	-
Payroll taxes employer State of Maine	$1,149,402	$585,634
Direct Tax Revenues	$6,599,757	$3,647,723
Cost of DL and grant program	$1,521,395	-
Cost of administrating the program	$1,277,041	-

[14] Loans larger than $350,000

Benefits for State of Maine	With Incentive	Without Incentive
Direct Revenues after incentive costs	$3,801,321	$3,647,723
IRR Incentive Program: Direct Benefits	**4.2%**	

Source: ICA calculations

Though a modest IRR of 4.2%, MTI's Development Loans program has been shown to effectively improve the innovation, economic development, and R&D environment in the State of Maine as evidenced by job creation and retention. Furthermore, MTI has steadily increased Development Loan disbursements, indicating its commitment and belief in the program as a vehicle for economic development.

State Benchmark Assessment

Introduction

This section of the report provides the following five benchmark analyses based on various databases to which the ICA Team has access. The full analysis of the ranking by benchmark can be found in the appendices.

Benchmark 1 – State Investment Trends: The State Investment Benchmark uses proprietary FDI and domestic investment data from fDi Markets, a database by FDI intelligence of the *Financial Times*, that tracks greenfield investment projects (i.e., cross state and foreign) as well as expansion projects. It does not include mergers and acquisitions (M&A) or other equity-based or non-equity investments. Retail projects have also been excluded from this analysis. The benchmark explores the competitive position of the State of Maine in attracting FDI and domestic investment from various source markets and in different industries and business activities.

Benchmark 2 – Business Environment Competitiveness: This section highlights the competitive position of the primary Maine MSAs compared to other MSAs across the US which a site selector may consider during an evaluation process. A set of public indicators and indices have been collected from various sources that allow for interstate comparisons across a range of dimensions of competitiveness. The location benchmark of the ICA team provides a different approach than more conventional location analyses. Rather than analyzing location parameters such as unemployment rates, number of issued patents or educational attainment, this location benchmark uses existing benchmarks based on a wide range of such parameters. Comparing and contrasting multiple location benchmarks and rankings enables performing a wider and more profound MSA and state-level analysis since such an analysis is based on a wide range of rankings that complement one another.

Benchmark 3 – Incentive Award Productivity: This analysis shows trends in incentives use across the United States, highlights recently awarded incentives to companies investing in different states and shows which incentive programs offered by state governments are most active. The analysis uses data from IncentivesMonitor.com.

Benchmark 4 – Data Availability of Incentives: In line with the incentive trend analysis, this section will also introduce a State Incentive Data Availability Index developed by ICA. This index is a composite

measure that ranks the States according to their incentive deal figures. Finally, this section concludes with detailed research that shows how other states have implemented successful evaluation and monitoring techniques to assess the effectiveness of incentive programs.

Benchmark 5 – Competitive States Programs: This benchmark focuses on specific incentive programs across competing states. ICA has expanded the number of competitive states used as benchmarks for analyzing incentive programs: New Hampshire, Rhode Island, Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, North Carolina, & Georgia.

Benchmark 1 – State Investment Trends

Absolute State Investment Performance

Figures taken from fDi Markets show that for the period of 2007 to 2017, a total of 47,315 investment projects have been registered for the US, of which 2,292 (or 4.8%) have been located in New England. In turn, out of these, 132 have chosen to locate in Maine.

These investment projects in the US represent a capital investment of almost $1.8 trillion. Likewise, the investment projects generated $63 billion and $6 billion of capital volume in New England and Maine, respectively. Over 4 million new jobs have been created across the US as a direct result of these investment projects. The New England projects resulted in 145,463 new jobs, with over 11,000 new jobs created in Maine.

Economically powerful states such as California, Texas, New York and Florida typically lead the pack in terms of attracting investment. Maine ranks 44th between New Hampshire (44th) and Hawaii (45th). This is an improvement from the 2016 reports ranking of 46th. Other New England states like Vermont, Rhode Island, and New Hampshire perform more or less similarly to Maine. In fact, with attracting $6 billion worth of capital investment and creating over 11,000 new jobs, Maine slightly outperforms its smaller peers and neighboring states.

Relative State Investment Performance

Still, interpreting these absolute figures does not reveal much of the actual state investment performance as there is a direct relationship between the size of a state's economy and the number of attracted investment projects. Therefore, correcting the state investment performance with the actual size of the economy measured by its Gross State Product (GSP) provides a better understanding of Maine's actual state investment performance compared to that of other states.

Comparing the share of a state's contribution to the national Gross Domestic Product (GDP) with the national share of state investment (i.e. in terms of number of projects, capital volume and job creation) results in a more comprehensive analysis of a state's investment performance. A positive differential indicates a state has attracted disproportionately more investment, capital or new jobs and thus performed better than "expected" based on its share of the national GDP. On the contrary, a negative differential indicates a state has attracted disproportionately fewer investment projects, capital or new jobs compared with its share of the national GDP. Maine performs just slightly higher (+0.1%) than its relative importance to the US economy, placing it at relatively average performance.

The same analysis has been undertaken for the benefits of state investment, examining the relative performance for capital investment plotted against the relative performance for job creation. New England states Connecticut and Massachusetts perform weakest with negative percentages for both indicators while Maine attracted 0.005% more capital investment and -0.05% fewer new jobs compared to its share to the national economy. A group of 17 other states perform very similarly, including the remaining New England states of Vermont, New Hampshire and Rhode Island.

Given these differences are so small, it can be concluded Maine performs nominally on par with its contribution to the US economy vis-à-vis its state investment performance.

Average State Investment Performance

Comparing average project values reveals that Maine outperforms both the US as well as New England for both average capital volume and number of newly created jobs per investment project. An average investment project in Maine equaled a capital volume of $45.8 million and created 87 new jobs. For the US and New England, these numbers equal average capital investments of $38.0 million and $27.3 million and 85 and 63 new jobs, respectively.

Maine State Investment Trends

24 new investment projects were announced in 2013 – the most successful year for Maine - followed by 16 new investment projects in 2014 and 15 in 2016. So far, there are 8 new investment projects announced for Maine for 2017. The years 2008 and 2012 were the most modest years for Maine as only six new investment projects were announced, while only seven were announced in 2010. Despite the fact that 2010 was not a year in which the number of new investment projects peaked, both economic benefits peaked in this year, with capital investment adding up to nearly $1.8 billion while over 3,000 new jobs were created.

Business services and financial service industries have been the most frequent investment projects realized in Maine (16 projects for both, or 12% each), followed by software and IT (13 or 9.85%), healthcare (12 or 9.09%) and alternative energy (10 or 7.85%). Combined, 14 alternative & renewable energy projects and transportation investment projects account for nearly $3.5 billion dollars (more than 57%). Clearly, this is related to the capital-intensive nature of these industries. Most jobs have been created by investment projects in transportation (3,157 or 27%), communications (1,411 or 12%), and financial services (1,318 or 111%).

Comparing the industry-specific statistics of investment into the state of Maine with the national average annual growth rates per industry reveals whether Maine has actually attracted investment in the fastest growing industries. Software and IT is the fastest growing industry in which Maine has attracted investment.

Industries which have experienced an above-average GDP growth over the last ten years and in which Maine has attracted a reasonable number of investment projects include software & IT services as well as business services. On the contrary, industries as healthcare, medical devices, transportation, industrial machinery, equipment & tools and, in particularly, aerospace are industries in which Maine

has attracted only a marginal number of investment projects whereas these industries have seen significant annual GDP growth rates.

Investment projects in a limited number of business activities have generated the largest economic benefits in Maine. This is the case for logistics, distribution & transportation ($1.6 billion or 26.6% of the capital volume and 3,179 new jobs 27.5% of the total job creation) and electricity ($1.7 billion or 27.7% of the total capital investment). Other business activities that contribute relatively strongly to generating new jobs include customer contact centers (2,974 new jobs or 26% of total job creation).

The largest source of international investment into Maine is from Canada, followed by the UK and Germany. In terms of benefits, Spain is strongly represented as a source country due to a $1.4 billion investment made by Bilbao-based Iberdrola. Aside from this, investment from Canada generated disproportionately higher volumes of capital (21.26%) and new jobs (15.85%).

However, most investment in Maine comes from US sources. Most state investment into Maine is sourced from Massachusetts (23 investment projects or 22.8% of the total number of investment projects), followed by North Carolina (14 investment projects or 13.9%). Other New England states include Connecticut (4 or 5.6%) and New Hampshire (7 or 6.9%). Investment projects from North Carolina represented the largest shares of capital investment ($1.14 billion or 29.7%), followed closely by Massachusetts, who also created the highest number of jobs (over 2,200 or 36%).

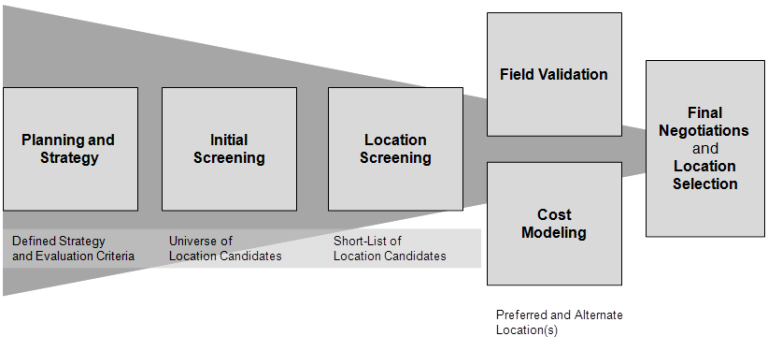
Portland has attracted by far the largest share of state investment with 25 investment projects (nearly 20%). Auburn has attracted six investment projects (4.6%) that have generated almost 900 new jobs (7.6%). Oakfield has attracted the largest share of capital investment: $525 million has been invested in Oakfield through two investment projects, only creating 82 new jobs (0.7%). Bangor has also secured a considerable share of the total capital investment ($167 million or 2.8%) while Belfast has attracted a relatively large number of new jobs (792 or 6.9%).

Benchmark 2 – Business Environment Competitiveness

A proper evaluation of Maine's incentive, credit, and other economic development tools must begin with an understanding of the State's natural advantages and disadvantages for attracting investment. Companies making expansion and relocation decisions typically go through a site selection process similar what is demonstrated on the image below. This process begins with the company identifying their business opportunities, constraints and needs for the new facility, and then progresses through an evaluation of location options. This evaluation process continues to narrow the list of options until the company prepares to negotiate with the last (and best-fit) handful of communities and sites remaining on the list.

This process usually starts with a regional, national, or even international long list of location options. Metropolitan areas are usually the units of geography being evaluated at this point, not towns or sites. Once an appropriate MSA is selected, the process advances to selecting a town and a site.

In the site selection process, three or four locations usually emerge from the screening model as the clear leaders. Local economic development agencies in those locations are typically contacted at this point. This then gives them the opportunity to present incentives, specific communities and sites within the broader region. It is important to note that the economic development agencies and incentive programs are not considered until this step and are rarely drivers of a project. Still, at the end of a site selection process, incentives can be what separates a project win or loss.



As with previous evaluation rounds, the Maine Competitive Analysis compares the Portland, Bangor, and Lewiston Auburn MSAs with 22 other MSAs with similar attributes likely to be considered when making a location decision.

Overall Findings

The findings from the competitive analysis model indicate that Portland is the most competitive location among the three Maine MSAs evaluated, achieving an overall rank of 11th among 25 MSAs. The other two Maine locations perform poorly, with Bangor MSA ranked 24th and Lewiston-Auburn MSA ranked 25th. Among the various evaluation categories, statewide weaknesses in Population and Demographics, Transportation and Market Access, and Tax Regime hamper the competitiveness of Portland, Bangor, and Lewiston-Auburn. A small population with stagnant (and sometimes negative) growth is a serious disadvantage to labor force availability and area market potential.

The Maine MSAs do have competitive wage rates (meaning low salary costs), which can be attractive to companies looking for skilled but affordable labor. Furthermore, Portland in particular ranks well in educational attainment, making it the most competitive among Maine locations for the knowledge-based economy.

Industry Sector Analysis

The analysis in the section is based on a standard site selection or evaluation model designed to show how likely a company would be to select Portland, Bangor or the Lewiston Auburn areas. This model has been further modified to develop insights to show how likely a company in a particular industry or function would select the Portland, Bangor, or Lewiston Auburn area.

As with previous reporting rounds, the following 7 industries or sectors are defined as current areas of focus for Maine incentive programs:

- Biotechnology,
- Composites & Advanced Materials,
- Environmental Technologies,
- Forest Products & Agriculture,
- Information Technology,

- Marine Technology & Aquaculture, and
- Precision Manufacturing.

Methodology

For each of the industry sectors, the team assigned a series of drivers particularly valued by a company in that industry. These drivers were chosen based on our proprietary incentives database tool and our experience as site selection consultants for the private sector. The team assigned a series of factors to measure each driver. Factors were limited to statistics that are available for the entire US by state or MSA. The statistical categories from previous rounds of evaluation were maintained, with data updated wherever applicable.

It is important to note that this analysis by industry/sector does not consider incentive programs in place which might help make up for drawbacks identified in this analysis. Incentive programs normally come into the site selection process further into the process when the candidates have been narrowed to a short list.

Overall Findings

Portland ranks 7th for Marine Technology & Aquaculture and 6th for Information Technology. For all other industries, Portland ranks between 19th and 22nd against its competitors. Lewiston-Auburn ranks 22nd for Marine Technology & Aquaculture and 23rd – 25th for all other industries. Bangor performs even less competitively, coming in at just 23rd for both Forest Products & Agriculture and Marine Technology & Aquaculture. It ranks still lower for all other categories.

Biotechnology

Maine remains an uncompetitive fit for biotechnology companies due to its limited access to talent and lack reputation in the field due to the cluster's small critical mass in the state. The Greater Boston area is fairly close to southern Maine, has better access to talent, and the 495 area has similar costs of living and quality of life to the Portland area. Companies would rather select a location closer to the biotech hub with more numerous educational institutions and a larger pipeline of skilled talent. Maine also has limited access to funding and investment partners given the low amount of activity from venture capitalists in the state.

The Portland MSA ranked slightly better than Lewiston-Auburn and Bangor for Biotech, but all locations ranked poorly against the competitors. Portland has stronger workforce availability because of the high educational attainment of its population. It also ranks modestly high in Global Access due to its proximity to an airport and has a relatively high percentage of employment due to FDI.

Composites & Advanced Materials

Composites and Advanced Materials is both a subset of and a partnering activity to precision manufacturing. Maine continues to rank poorly for composites and advanced materials due to its tax climate, limited transportation infrastructure, and distance to markets and customers. Beyond Portland's ability to recruit and supply a skilled workforce, companies in the state have significant hurdles to overcome to remain competitive.

Environmental Technologies

Maine as a state does not have a competitive ranking for Environmental Technologies. High energy costs help drive the need for environmental technologies, but ironically make such products costlier to produce. Bangor and Lewiston do not rank well for any of the factors that drive environmental technologies. Only Portland has one positive ranking category with skilled workforce availability.

Forest Products & Agriculture

Maine could do much better for forest products and agriculture considering the vastness of the state's natural resources. The state has access to a tremendous amount of unharvested land that could supply paper mills and other value-added industries. However, extracting this resource is expensive and the supporting industries that add value are struggling. Furthermore, Maine has a small percentage of its land dedicated to farmland compared to the other states in the competitive set. Cheaper energy costs and or access to natural gas would help and possibly save the forestry products industry.

Surprisingly, Portland ranks the best out of the Maine candidates due to its access to skilled labor and culinary programs, but Bangor also demonstrates an edge in natural resources business activity compared to others. Maine's burdensome tax environment and limited logistics infrastructure hinder all three MSAs.

As with the previous report, the agriculture component does not consider a large farming industry outside the Presque Isle area by the Amish for two reasons. Presque Isle is not considered an MSA

(thought they may have the population mass to become a NECTA). More importantly, it is unclear and unlikely that the Amish are included in the census. While not all our sources are census based, several are census based or are separate sources also based on census statistics. If the area became a NECTA, statistics would be collected differently and by more sources.

Information Technology

Portland proves a competitive choice for Information Technology companies, ranking 6th compared to the other two Maine locations which rank 23rd and 24th. First, it has the ability to recruit and supply talented labor in tech fields. Second, Portland's ICT infrastructure is ranked highly based on the percentage of households with broadband access and the utility index score. Portland also has a higher location quotient in this field than the other two Maine locations.

Marine Technology and Aquaculture

Portland has the best access to marine technology and aquaculture among the three Maine MSAs simply due to its proximity to the ocean. Portland itself is not the best place for aquaculture activities but is a great location for research and marine technology development given its skilled workforce. Bangor and Lewiston-Auburn demonstrate low cost competitiveness as well as reasonable access to natural resources.

Precision Manufacturing

While Lewiston and Bangor don't rank particularly high for manufacturing, there is a historical precedence set in these areas for the manufacturing and precision manufacturing fields. Many manufacturing companies in more traditional manufacturing fields are transitioning to using CNC machines to help alleviate the pressures on employees and add accuracy to key points in the manufacturing process. Most companies have struggled but managed to find enough employees to efficiently run the business. Many companies are looking at a mass retirement of their workforce over the next 5 to 10 years. Skilled workforce availability will become even more important than ever, which may shift the industry away from its historical base in Lewiston and Bangor towards the Portland area.

Benchmark 3 – Incentive Award Productivity

The Incentive Award Productivity benchmark has been developed from incentives data obtained from the IncentivesMonitor.com[15] database. The database registers all types of incentives offered to companies to establish new operations or to expand an existing operation.

Absolute State Incentive Productivity

Out of the 20,152 incentives on record for the United States from 2010-2017, 1,764 (or 8.8%) have been awarded in the six states that comprise New England, equaling a total budget spent on incentives of $3.6 billion. Incentives granted in Maine represent a small portion of the New England incentive distribution since only 31 of the 1,764 incentives (or 1.8% of New England's total) have been awarded to businesses located in Maine. Together, these incentives represent a value of $166.0 million.

[15] Incentives Monitor was originally launched in 2010 as ICAIncentives.com, developed jointly by ICA and WAVTEQ

In terms of benefits, the incentivized investment projects have created over 72,000 new jobs throughout New England, of which just over 1,600 jobs have been allocated in Maine. This employment creation has been accompanied by a total capital investment of $14.6 billion in New England and $446 million in Maine.

Together with New Hampshire and Rhode Island, Maine is among the states that have given the lowest number and amount of incentive awards. Their economic performance is very similar as their shares of capital investment and job creation exactly match the shares of number and value of awarded incentives, which all represent 0.09% to 0.2% of the national total.

Relative State Investment Performance

Expressing the total number of awarded incentives compared to the total value of awarded incentives reveals the states that spent disproportionately more or less on incentive packages. The differentials between these percentages are visualized in the figure below. Maine spent $166.1 million (0.1% of the total amount spent on incentives) on its 31 registered incentive awards (0.2% of the total number of incentives) and is therefore nominally at "par" (i.e. a differential of 0.1%).

Plotting the total job creation and attracted capital investment allows an evaluation of which state has performed best in terms generating economic benefits because of the awarded incentives. Maine ranks among this group of states that have performed very modestly, both for attracting new capital as well as for new job opportunities. Maine performs similarly to its New England peers New Hampshire, Rhode Island and Vermont (along with Alaska, Montana, North Dakota, Washington DC and Wyoming) indicating its moderate success. This should however be put into perspective as these states have also generally spent a small budget on a limited number of incentives.

Therefore, the following indicators can be calculated and analyzed to normalize for the budget spent on incentives:

- **Incentive per Job Created**, which is the result of dividing the total value of awarded incentives by the total number of newly created jobs per state. This indicator provides a value of what states have "paid" by incentives for one newly created job.
- **Return on Investment**, which is the result of dividing the total volume of capital investment by the total value of awarded incentives. This indicator provides a value of what the return on one dollar of incentive is. For instance, a Return of Investment of $3 means that every dollar a state spent on incentive generated a capital investment with a value multiplied by three.

Plotting these two indictors provides an overview of how the incentives actually performed as these two indicators compensate for the size of the budget that has been spent on awarded incentives.

It becomes clear that Maine has one of the lowest returns on investment ($2.7 for every $1 of awarded incentive) with a relatively high incentive value per newly created job ($100,813). To this extent, it performs very similar to Connecticut, Arizona, and Michigan though these states have attracted considerable larger numbers of new jobs as well as amounts of capital investment.

Average State Incentive Productivity

An average incentive granted to a beneficiary across the US resulted in a capital investment of $31.3 million and 131 new jobs. Maine's average capital investment and job creation per awarded incentive were $14.4 million and 53, respectively. New Hampshire garners more investment on average ($15.8 million) where Rhode Island obtains more new jobs per project (76). Maine otherwise outperforms its regional peers.

Maine's incentive productivity can be grouped together with that of New Hampshire, Rhode Island and Vermont (thought Vermont awarded just slightly less than the number of projects that Maine, New Hampshire and Rhode Island together). Maine outperforms the other three states in terms of total volume of capital investment (3.05% against 1.9%, 3.0% and 1.7%) though Maine created relatively fewer jobs (2.3%) than either Rhode Island (5.3%) or Vermont (4.27%). It should be noted Maine spent more money on incentives than Rhode Island and Vermont, but less than New Hampshire (4.6% against 4.4%, 2.3%, and 4.6%).

Maine State Incentive Trends

Many of the 31 incentives deals that have been captured for Maine occurred in 2015 (12) against only one in 2010. The number of incentives has gradually increased from 2010 to 2015 before dropping off precipitously in 2016. The trend for the total value of the 28 awarded incentives shows a different pattern with a peak in 2011 ($102.6 million) and a gradual decline of the total value of awarded incentives. This implies the average value of an incentive awarded in Maine has decreased over the last five years. The peak in 2011 was due to a $102.0 million incentive package granted to an investment in the renewable energy sector.

Coming from low values in 2010, 2011 was a bumper year for capital investment (partly due to the large renewable energy investment) while 2012 peaked in terms of number of newly created jobs (due to an investment in the aerospace industry creating 600 new jobs). From 2013 onwards, both indicators run parallel with a gradual increasing trend in 2015, followed by a drop-off as overall incentive activity declined.

In terms of industries targeted by incentives, the food and drink industry has been a priority target with eight incentives (or 25.8%) out of the 31, equaling a total value of $2.2 million (or 1.35%). This industry is followed by the life sciences, equaling a total value of $5.2 million (or 3.1%), and aerospace, defense and marine industry with five incentives (or 16.1%), equaling a total value of $33.7 million (or 20.3%). The six incentives awarded to companies in the life sciences have created a disproportionate number of new jobs (464 or 28.2%). The five incentives granted to aerospace, defense and marine industry beneficiaries have translated this into disproportionately large economic benefits more broadly, representing 30.8% of the total capital investment ($137.1 million) and 47.9% of the total newly created jobs (790 new jobs). The investment project in the renewable energy sector is clearly visible, which accounts for over 40% of the total capital investment and almost 70% of the total value of awarded incentives.

Comparing the strongest growing US industries with the allocation of Maine incentives enables us to indicate potential opportunities for awarding incentives and targeting. Maine has awarded most of its incentives to the food and drink industry. This industry has experience an annual GDP growth of 3.6%, which is above the US average of 2.9%.

With regards to the business activities Maine's incentives have targeted, it is clear the manufacturing sector represents the strongest targeted business activity with 17 projects receiving incentives (54.8%), representing $34.8 million (or 20.9%). This sector is however not the largest in terms of value that has been allocated to incentives as the electricity and extraction sector (i.e. the renewable energy investment) represents the largest share of the budget ($116.3 million or 70.0%).

Business functions that have generated disproportionate economic benefits include the manufacturing sector ($129.4 million of capital investment or 29% and 892 new jobs or 54.1% against 21% of the total budget spent on incentives), construction and infrastructure ($48.3 million of capital investment or 10.8% against 7% of the total budget spent on incentives) and, particularly, headquarters ($79.0 million of capital investment or 17.7% and 390 new jobs or 24% against 1.4% of the total budget spent on incentives).

Apart from one Canadian recipient, all other incentives have been awarded to domestic investors. No other community other than Portland, Brunswick, Gardiner, Madawaska and Presque Isle awarded more than one incentive. The largest incentive package ($102.0 million or 61.4%) has been awarded in Roxbury, generating $153.0 million (or 34.3%) of capital investment but only eight new jobs. This can be attributed to the capital-intensive nature of the investment project, which is in the renewable energy industry.

Benchmark 4 – Data Availability of Incentives

US states vary considerably with regards to their public disclosure of information on granted incentives, beneficiaries, value of incentives, and the socio-economic and financial performance of their incentive programs. To shed more light on the openness and data availability of incentive programs across US states, ICA developed the Incentive Data Availability Index in 2013.

The objective of the Data Availability Index is multi-fold. Firstly, the Index itself contributes to higher transparency on incentives as it provides an assessment of US states' incentive regime productivity. Full disclosure of incentive information among all US states could also mitigate or reduce the process of a "race to the bottom", in which different jurisdictions fiercely compete against each other on the amount of incentives rather than the quality of their incentive package and potential economic multiplier effects for their communities.

Secondly, the Index functions as an instrument for legislatures, authorities, and policy-makers concerned with incentive programs across the US to better evaluate the openness of their incentive program(s) and compare the performance of their incentive regimes against peer states. Data and analyses from the Index enable law- and policy-makers to make more well-informed decisions with regards to the incentive program's design and evaluation mechanism.

Finally, the Index has the power to better inform potential investors about incentive opportunities in their sector and business activity for a specific state or part of the US. After all, a more utilized and documented incentive program is typically more easily accessible.

Methodology

To produce the Incentive Data Availability Index, IncentivesMonitor.com[16] data has been analyzed at the state level. The process to construct the Index consists of four steps.

Step 1 – Calculate values for each indicator

For each state, the values for three indicators have been collected and calculated. These indicators include:

- **Indicator 1**: Number of Awarded Incentives;
- **Indicator 2**: Total Value of Capital Investment (attracted as a result of the awarded incentives); and
- **Indicator 3**: Total Number of Newly Created Jobs (created as a result of the awarded incentives).

It should be noted here that this evaluation method handicaps smaller jurisdictions that, due to their economic size, cannot award as many incentives as some of the larger states. Still, by demonstrating more incentive awards and the amount of capital investment and job creation that they bring, the Data Availability Index can help both public and private entities eliminate the risks of unknown factors. It helps both become more comfortable with and have knowledge about the returns that incentives deals can provide in a particular jurisdiction.

Step 2 – Convert each indicator value into state rankings

The value of each indicator will be converted into a national ranking, where the state with the highest value ranks first (No. 1) while the state with the lowest value ranks last (No. 50). The ranking of the number of awarded incentives (i.e. Indicator 1) forms the baseline of the Index, which is then measured and verified against the ranking of the two other indicators (i.e. Indicator 2 and Indicator 3).

Step 3 – Calculate total scores

The third step involves calculating the total scores for rankings of the three indicators. This yields the final score per state.

Step 4 – Produce final Index

The final step includes ranking the total scores and clustering these total scores. This results in the final Incentive Data Availability Index. States are ranked by averaging the ranks of the three indicators.

[16] IncentivesMonitor.com tracks incentives deals worldwide. The database dates back to 2010 and allows the user to gain information on number of deals, deal amounts (USD), capital expenditure amounts (USD), and job creation.

- **Green**: scores from 1.0 up to and including 16.9. Includes states with high incentives data availability that frequently disclose information on awarded incentives.
- **Amber**: scores from 17.0 up to and including 33.9. Includes states with moderate or average incentives data availability.
- **Red**: scores from 34.0 up to and including 50.0. Includes states with very little or absent incentives data availability.

Overall Findings

Incentive Data Availability Index 2017

Rank	State	Score	Rank	State	Score	Rank	State	Score
1	New York	2.3	16	South Carolina	17.0	33	Idaho	31.3
2	California	3.0	17	Connecticut	17.7	34	Montana	32.3
3	Kentucky	5.3	17	Iowa	17.7	35	Kansas	34.3
4	Michigan	6.0	19	Utah	18.0	36	Rhode Island	34.7
5	Wisconsin	6.7	20	Missouri	18.7	37	Vermont	36.0
6	North Carolina	7.0	21	Georgia	20.7	38	Oklahoma	37.0
7	Ohio	7.7	22	Florida	22.0	39	Delaware	38.3
8	Indiana	8.0	23	Louisiana	23.3	40	West Virginia	38.7
9	Texas	8.7	24	Illinois	25.0	41	South Dakota	40.7
10	Virginia	11.3	25	Alabama	25.7	42	Mississippi	41.7
11	Pennsylvania	12.3	26	Arkansas	26.3	43	Washington	42.3
12	Colorado	14.0	27	Nevada	26.7	44	North Dakota	42.7
12	New Jersey	14.0	28	Arizona	27.0	45	New Hampshire	43.3
14	Massachusetts	14.3	28	Maryland	27.0	46	Alaska	.
15	Tennessee	15.3	28	Minnesota	27.0	46	Hawaii	.
			31	New Mexico	30.3	46	Nebraska	.
			31	Oregon	30.3	46	Maine	.
						46	Wyoming	.

Source: Investment Consulting Associates – ICA (2018), based on IncentivesMonitor.com (2018)

Cross-Reference

The Incentives Data Availability Index has been cross-referenced with the Pew Charitable Trusts' study to account for the transparency of incentive programs. In that sense, combining ICA's Data Availability Index – which has a more quantitative perspective on economic impact – with the results of the Pew Charitable Trusts study – which has a more qualitative perspective on how states evaluate tax incentives – results in a more robust and comprehensive assessment of US states' incentives programs and their quality – both in terms of economic impact and policies. To do so, each state has been rated based on two variables:

- Ranking on ICA's Data Availability Index – High availability, moderate availability, or low availability.
- Ranking on Pew's National Assessment of Evaluation Practices– Leading, making progress, or trailing with regards to incentives evaluation.

Best Performers

One exception is Indiana. The state scores high on ICA's Data Availability Index as it has awarded a large number of incentives (a total of 106 – rank 10) that created nearly 15,400 new jobs (rank 7) and that generated $4.31 billion worth of capital investment (rank 7). This results in a score of 8.0, implying the 8th rank on the Index. These data are publicly available and accessible since they feature in the IncentivesMonitor.com database, which is the foundation of the Index.

A second tier of states rank just below Indiana. These are states that either have made progress on evaluating their incentive programs but already have relatively high levels of transparency (i.e. Colorado, Ohio, Tennessee, Virginia, and Wisconsin) or states that are leading with regards to incentives evaluation but are in the process of improving the transparency of their incentive programs and evaluations (i.e. Florida, Iowa, Maryland, and Minnesota). These states represent future competitors for Indiana.

Worst Performers

The final group of states consists of states that perform poorly on one of both indices and moderately on the other index or poorly on both indices. The latter includes the states Delaware, Idaho, Kansas, Montana, South Dakota, Vermont, West Virginia and Wyoming. These are economically small states that do not heavily rely on incentives as instruments to encourage economic development, and also do not have a regime in place for evaluating the already limited use of these programs.

Moving States

States that particularly improved their rating over the last five years include California (+20), Montana (+13), Arkansas (+12), Wisconsin (+11), and Connecticut (+9). Montana's strong improvement can be partly attributed to the number of incentives administered as reported by IncentivesMonitor.com. The state increased from 16 (rank 43) to 30 (rank 19) in 2017. The same is true for California, for which IncentivesMonitor.com registered 344 incentives (rank 1) in 2017 vis-à-vis only 36 (rank 36) in 2013. This demonstrates how publicly disclosing more information on incentives results in higher ranking on the Data Availability Index.

On the other side of the spectrum, states like Louisiana and Mississippi (both -17), Florida (-12), Oklahoma (-10), and Alaska and Kansas (both -7) lost ground. Illustrated are the cases of Louisiana and Alaska. IncentivesMontior.com tracked a total of 298 incentives (rank 9) for Louisiana in 2013 but only twelve incentives were registered for 2017 while IncentivesMonitor recorded 62 incentives (rank 27) for Alaska in 2013 but did not record any incentive for 2017 (rank 46). Florida's registered incentives decreased from 315 (rank 7) in 2013 to 36 (rank 17) in 2017.

Maine's Ranking

Maine is ranked 46th together with Alaska, Hawaii, Nebraska, and Wyoming. Maine lost ground over the last five years as no incentives were recorded for 2017 while the state ranked 45th in 2013 with eight incentives recorded (rank 46), generating 814 new jobs (rank 43) and a capital investment of $433 million (rank 40). Maine joined Hawaii, which had been ranked last (46th) in 2013 as well, together with

Alaska, Nebraska, and Wyoming – all states for which no incentives were recorded by IncentivesMonitor.com for 2017.

Overall, the evaluation shows Maine performs relatively well within New England as it ranks similarly to Connecticut and Massachusetts and above New Hampshire, Rhode Island, and Vermont. This is mainly driven by Maine's strong performance on Pew's Evaluation Index. Improving its index score by awarding and disclosing (more) incentives information would certainly improve Maine's rank and would put it ahead of its regional peers.

Benchmark 5 – Competitive States Programs

Maine has started to lead other states in programs because it created a well-designed plan to regularly evaluate tax incentives, experience in producing quality evaluations that rigorously measure economic impact, and a process for informing policy choices. What do other states look like, incentive programs' wise? This calls for a further investigation into the distinctive incentive programs and the characteristic features these competing states offer. The selection of Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, Georgia, North Carolina, Rhode Island North Carolina and New Hampshire for the competitive state incentive programs benchmark is furthermore justified given their varying economic size and structure, some of which are similar to that of Maine. Also, as can be concluded from the Incentive Productivity Benchmark, Maine's incentive productivity can be grouped together with that of Vermont, Rhode Island, and New Hampshire.

This competitive state incentive programs benchmark is structured as follows. The first section introduces the incentive regimes across the ten competitive benchmark states after which the state incentive programs are evaluated in-depth. Per state, key incentive programs are briefly described while minor incentive programs are summarized. This is followed by a comparison of a number of selected competitive incentive programs. To safeguard consistency, a template has been designed to compare these selected competitive incentive programs across state borders. This template consists of multiple questions which have been categorized according to three components: Structure and Targets, Eligibility and Benefits, and Performance and Evaluation. The incentive programs that have been benchmarked by means of this template have been selected based on their uniqueness and competitiveness in combination with the fiscal and financial impact for potential recipients. A total of thirteen of competitive incentive programs have been selected to be benchmarked:

- New Hampshire's Economic Revitalization Zone (ERZ) Tax Credit;
- New Hampshire's Research and Development Tax Credit;
- Rhode Island's Innovation Tax Credit;
- Rhode Island's Qualified Jobs Incentive Tax Credit;
- Vermont's Employment Growth Incentive (VEGI);
- Massachusetts's Economic Development Incentive Program (EDIP);
- Massachusetts's Life Science Tax Incentive Program;
- Connecticut's Urban and Industrial Site Reinvestment Tax Credit;
- New York's Start-up NY Program;
- Iowa's High-Quality Jobs;

- Ohio's R&D Investment Tax Credit;
- Ohio' s Tax Increment Financing;
- Georgia's Quick Start Program; and
- North Carolina's Biotechnology Center, Economic Development Award.

Prominent incentive programs Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, North Carolina, Rhode Island, North Carolina and New Hampshire offer have been summarized in the table below. The incentive programs have been grouped according to the type of incentive. A broad distinction can be made between direct financial or fiscal incentives (e.g. tax credits and cash grant) as opposed to indirect incentives (e.g. technical incentives). Direct incentives can be further grouped into investment incentives, land and infrastructure incentives, training and employment incentives and incentives related to R&D. Indirect incentives can be split into regulatory and administrative incentives on the one hand and technical incentives on the other hand.

What becomes evident is that the focus of the incentive programs of Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, Georgia, North Carolina, Rhode Island and New Hampshire seems to revolve around encouraging training and employment and, to a lesser extent, investment and R&D (particularly Rhode Island). Only Iowa, New Hampshire, and Rhode Island do not offer a program specifically designed at land and infrastructure incentives.

Recommendations and Implementation

This report's recommendations come at a time when the Maine Legislature is considering several measures which will significantly alter the landscape for economic development support programs. These range from a re-visioning of the Pine Tree Development Zone program (just before its planned sunset at the end of 2018) to development of a full, updated economic development strategy for the State. Likewise, the legislature has proposed and passed changes to the legislation that mandates this series of evaluation reports, making it likely that the next set of evaluations will proceed, function, and even read very differently to this.

It is our hope that the Legislature and the Executive Office consider the following recommendations as they proceed with their deliberations.

As has been noted previously, the current set of economic development and R&D programs developed organically over time. Each was a response to a perceived need or opportunity. The present analysis has begun the process of evaluating current effectiveness and providing a path forward to more efficient and impactful programs. As with the 2014 and 2016 reports, the recommendations below showcase both long-term strategic suggestions as well as more technical program by program recommendations.

The recommendations are presented below in five separate categories:

- Structure and targets of programs;
- Eligibility and benefits of programs;
- Monitoring and evaluation of incentive programs;

- Summary of programs and recommendations;
- General recommendations; and
- Implementation.

This is followed by a discussion of suggested next steps and implementation.

Structure and Targets of Incentive Programs

Public and private sector interviews – coupled with location selection analysis – suggest several recommendations for the structure and targeting of economic development and R&D programs:

A1. Incentive programs and any other economic development efforts work best when they are in support of a well-stated and understandable economic development strategy. Such a strategy should be built upon the state's existing strengths and expand these over time, allowing the state's economy to adapt and grow. Incentives, grants, and other programs can make this happen. Each must be monitored and evaluated to make sure goals are being met. A clear economic development and R&D strategy also by necessity lays out the desired end state, making measurement that much easier to define.

A2. Program design should conform to the best practice principles of simplicity, clarity, certainty and objectivity.

A3. The State of Maine should explicitly match performance measurements to the type of assistance provided. The ROI and breakeven point for a direct R&D investment in a university or small business setting will likely be very different to that for a tax credit for a large established company. The MIEAB (Maine Innovation Economy Advisory Board) has in the past played a role in establishing and validating the State's R&D efforts. This role needs to be re-examined and perhaps reaffirmed.

A4. Likewise, there needs to be a clear and transparent mechanism by which the measurement and evaluation of programs – such as the current report – results in updates to strategy and public policy. Measurement must be followed by action or it is meaningless.

A5. The State should examine programs to determine which may be altered or augmented to meet the needs of post start-up companies (20-100 employees) who may still require assistance to best meet their potential.

A6. A common framework could be developed within each program that is clear, transparent, and coherent for investors and recipients. This approach would facilitate coordination and harmonization where possible.

A7. Change the requirements for personal equipment tax exemptions in the PTDZ program such that equipment does not need to be operated by specified new employee so long as the equipment benefits the entire company.

A8. Rather than focusing on the 7 specific sectors to grow Maine, it may be more advisable for the State to focus on growing all business sectors and supporting all successful businesses as a strategy for developing a more diversified, resilient economy. Focusing on one industry may not enhance economic sustainability and could instead mean that the state is not using the money for the greatest positive effect.

Eligibility and Benefits of Programs

B1. Any investment incentive program succeeds in achieving its goals when it is clear, simple and certain, and performance-based against pre-determined criteria.

B2. All administrative processes should be as simple and clear as possible. It is important to develop incentive frameworks that can be effectively administered and monitored. Simplicity and clarity make compliance possible.

B3. This clarity and transparency should be further applied to description and details on incentive program websites.

Monitoring and Evaluation of Incentive Programs

C1. The State should create a searchable repository of information on all economic development and R&D programs that includes a clear statement of goals and outcomes, as well as clear evaluation and monitoring procedures. Apart from assessing and measuring the investment incentive regimes, providing results and information on an aggregate basis also enhances transparency, credibility and public accountability.

C2. Economic development and R&D program administrators (specifically MTI) should follow up with applicants to grant and credit programs when they either do not qualify or are not chosen to receive funding or credits. While not all companies will get accepted into all incentive program, the debrief will help ease any frustration and negativity that unsuccessful companies might otherwise associate with that loss.

C3. We repeat the recommendation that the State should establish a standardized reporting tool for all economic development and R&D program recipients. Reporting requirements should be clear, coherent and transparent. These should be directly linked to the award and to the program's conditional criteria. Repercussions for non-compliance should be clearly spelled out in program legislation, along with the protocols for such sanctions.

C4. We continue to feel that this proposed reporting tool should also provide a means for recipients to provide feedback to the State on their own experiences on the utility and efficacy of the programs. Such measures may include but not be limited to workforce readiness, program applicability and reporting, program utility, and suggestions for improvement.

C5. Once a company receives an incentive award, it is very important that the state continue to honor the award until either the company falls out of compliance or the award expires as stipulated in the program terms. Any award made is recognized as a contract between the company and the state and needs to be honored as such.

C6. Notwithstanding the statements above, the State should also consider revising the metrics it uses to evaluate the effectiveness of its research programs. Licenses, reputation, jobs, skills, patents, and wage levels may all be factors, but the matrix of measures should reflect the mix of investment desired and an appropriate understanding of their development and business cycle.

C7. Likewise, the State needs to fully recognize the distinction between pure research (as performed by universities and non-profit scientific research institutions) and commercial research and development as performed in an industrial context. The latter is usually designed with a product and a hoped-for return on investment in mind. Pure research is

performed to advance the scope of human knowledge. While it does not often have a known commercial use at inception, such research is vital in developing and maintaining the state's innovation ecosystem.

C8. Institutional collaboration should be facilitated by an Incentive Working Group consisting of members of various government institutions as well as corporate representatives. The Working Group will advise legislators and staff on incentives, discuss specific incentive policies, and can act as ombudsmen addressing concerns of corporate investors in incentive application processes. This Working Group can serve as a coordination, consultation and knowledge center for the State and the stakeholders. Such a working group should work hand in hand – and ideally be an outcome from – the State's upcoming Economic Development Strategic Plan.

C9. Holders of investment incentives should be held responsible to report within the standard fiscal reporting system, even where "tax holiday" incentives exist. The Maine Revenue Service and DECD must make an explicit effort to coordinate both the provision of incentives and the Monitoring and Evaluation (M&E) process.

C10. A review of incentives and purge of non-compliant companies should take place every year with a full fiscal review completed by an independent non-bias third party on a biannual basis. The independent party should be selected through a bid process and only be open to entities independent of the state government with the resources to complete a neutral assessment of the programs.

C11. Programs that require fund matching should present clear guidelines for the types of matches allowed and should be reasonably consistent with federal guidelines where possible.

C12. The State should establish and ensure fixed program durations to allow for regular independent evaluation, assessing the program's relevance and benefits. This requires the full authority and capacity of the DECD or administering agency and should be implemented in its follow-up strategies. Program sunset dates should align with their evaluation periods.

C13. The State should work to resolve redundancy of incentive program evaluations. Currently two statutes assign program evaluation authority to two different entities: OPEGA and DECD (Maine Rev. Stat. tit. 998 to 1001 AND MRSA Title 5, §13056-A).

- If DECD continues to conduct its own evaluations, it is recommended that it do so on a rotating basis. The current report cannot do an in-depth analysis of impact of every incentive program every 2 years. Therefore, a better method would be to evaluate a portion of the program portfolio on a rotating basis (OPEGA does this on a 6-year basis decided by the Government Oversight Committee).
- The State should reinstate of reporting requirements for incentive beneficiaries (MRSA Title 5 13056-b - reporting requirements were repealed in 2017). In addition, add language making ease of access to data easier for the auditor, such as giving access to confidential information kept by MRS. See Nebraska LB1022 (2016) as example of precedent in other states.

The above recommendations provide numerous action items that can be implemented over time and provide a better incentive screening and data collection process as well as institutional collaboration among various government departments of the State of Maine.

Summary of Programs and Recommendations

The following is a summary of current and recommended new programs, including a review of general effectiveness and suggested changes. These are listed by the department or organization that administers each program. Further, it is hoped that the proposed formulation of a new state economic development strategy through LD 367: An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State will provide the opportunity for enhanced coordination and centralized record-keeping for all of the State's programs.

Note that the following programs do not have specific recommendations as they represent local implementation of Federal programs:

- EDA Economic Development Program;
- Community Enterprise Grant Program; and
- Downtown Revitalization Grant Program.

Department of Economic and Community Development

Program	Program Type	Recommendation
Certified Media Production Tax Credit	Economic Development	• Retain in place • Develop thorough measures for program reporting including jobs creation and/or local impact (e.g. sales tax)
Maine Tourism Marketing Promotion Fund	Economic Development	• Retain in place • Develop thorough measures for program reporting including jobs creation and/or local impact (e.g. sales tax, lodging tax)
Maine Made - Maine Products Marketing Program	Economic Development	• Build further awareness • Consider incorporating a component of this program that encourages Maine companies to use other Maine companies for material, product, or input sourcing where a local option exists • Consider consolidation with Maine Tourism Marketing Fund
Maine International Trade Center	Economic Development	• Retain in place • Operated as a trade advisory program, and not as a grant or credit program

Program	Program Type	Recommendation
Business Ombudsman	Economic Development	• Retain and enhance program to more fully coordinate **ALL** incentive program information, interaction and reporting • Note that this program does not need to reside within DECD and may operate well in a public private partnership setting, such as Maine Economic Growth Council (MEGC) • See recommendations in the General section below
Communities for Maine's Future	Economic Development	• Relatively low funded program • No economic development parameters, hence difficult to review • Consider elimination to fund alternative programs
Maine Technology Centers	Economic Development	• Retain in place • Develop more thorough measures for program reporting, including jobs creation or local investment
Municipal Tax Increment Financing	Economic Development	• All reporting is local and therefore out of the scope of the information available to this evaluation

Maine Technology Institute

Program	Program Type	Recommendation
Development Loans (MTI)	Research & Development	• Retain Program • Change the payback terms so the significant payback penalty will be encored 4 or 5 years after commercialization rather than year 2-3 after commercialization
Seed Grant Program (MTI)	Research & Development	• Retain Program
Equity Capital Fund (MTI)	Research & Development	• Retain Program
TechStart Program (MTI)	Research & Development	• Retain Program
Phase 0 and Phase II SBIR Application awards plus TAP support (MTI)	Research & Development	• Retain Program

Cluster Initiative Program (MTI)	Research & Development	• Retain Program
Maine Technology Asset Fund (MTI)	Research & Development	• Retain program
Marine Research Fund (MTI)	Research & Development	• Retain program
Maine Biomedical Research Fund (MTI)	Research & Development	• Retain program

Several common suggestions were received and should be considered regarding MTI programs. In particular, program recipients strongly suggested that MTI programs require improved transparency in the application process, additional follow up and suggestions for improvement to companies that did not receive awards, and to develop a more simple and equal project evaluation process. This is particularly important to foster the same sense of transparency and accountability required for other Maine support programs.

Several companies also noted that while MTI is nominally tasked with the role of supporting innovation, there appears to be a subset of companies who have received multiple MTI awards over a number of years. Put another way, there are concerns about the concentration of MTI funding and about the fairness of the evaluation process. This is not a concern associated with one MTI director. Suggestions to change this include modifying the evaluation process for companies applying for MTI programs.

Both the Loring Development Authority and the Brunswick Naval Air Station Job Tax Increment Financing have been removed from this summary as they are self-contained and affect only the respective former military installations.

Department of Economic and Community Development/ Maine Revenue Services

The state legislature is contemplating significant changes to the following programs through LD 367: An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State and LD 1654: An Act to Protect Economic Competitiveness in Maine by Extending the End Date for Pine Tree Development Zone Benefits.

Program	Program Type	Recommendation
ETIF	Economic Development	• Continue with non-compliance purging as begun in 2013-14 • Perform on a yearly basis around the start of the new financial year based on the previous year • Modify program description on the website to note non-compliance purging

Program	Program Type	Recommendation
Pine Tree Development Zones	Economic Development	• Program is currently set to sunset at the end of 2018 • Legislature is currently considering extending the program through LD 1654 • Recommend altering or replacing as soon as the new Economic Development Strategy called for in LD 367 is developed

Maine Revenue Services (MRS)

Due to MRS confidentiality requirements, there continue to be transparency difficulties inherent in any program which includes a tax rebate component. Collaboration and information sharing between ICA and MRS staff was greatly improved compared to previous rounds, which helped facilitate the survey and cost-benefit analysis processes.

Program	Program Type	Recommendation
Business Equipment Tax Reimbursement	Economic Development	• This program is has been greatly reduced except for a very limited scope (retail business equipment), but there are ongoing participants. • Program continues to be modified as BETE • Phase out program allowing for BETE to become complete successor
Business Equipment Tax Exemption	Economic Development	• Retain in place • Use the template of the information request to enhance their annual evaluation effort • Using a uniform reporting standard improves the accountability and improves monitoring and adjustment
Sales Tax Exemptions (Manufacturing Machinery, Equipment and Tangible Personal Property)	Economic Development	• Retain in place • Consolidate into one overall Sales Tax Exemptions Program
Sales Tax Exemptions (Fuel and Electricity for Manufacturing)	Economic Development	• Retain in place • Consolidate into one overall Sales Tax Exemptions Program
Sales Tax Exemptions (Products Used in Agricultural and Aquaculture Production, and Bait)	Economic Development	• Retain in place • Consolidate into one overall Sales Tax Exemptions Program
Sales Tax Exemptions (Commercial Agriculture, Commercial Fishing, and Commercial Wood Harvesting Machinery and Equipment)	Economic Development	• Retain in place • Consolidate into one overall Sales Tax Exemptions Program

Program	Program Type	Recommendation
Sales Tax Exemptions (Machinery and Equipment for Research)	Research & Development	• Retain in place • Consolidate into one overall Sales Tax Exemptions Program
Shipbuilding Facility Credit	Economic Development	• Eliminate Program or significantly alter it so that it applies to a broader selection of Maine's shipbuilding and/or manufacturing community • Credit only applies to very large shipbuilding facilities with more than 5,000 employees that do not qualify for BETE and make more than $200,000,000 investment • Consider modifying BETE rules to include all shipbuilding companies under current BETE rules with current BETE caps
Credit for Rehabilitation of Historic Properties	Economic Development	• Not strictly applicable for economic development purposes
Super Credit for Substantially Increased Research and Development	Research & Development	• Combine with RETC
Research Expense Tax Credit (RETC)	Research & Development	• Combine with Super Credit

Finance Authority of Maine (FAME)

In general, FAME is a self-sustaining organization with most funding coming from user's fees and interest, rather than being wholly funded by the State. The programs are evaluated with clear end-of-year reporting statistics with an eye towards fiscal stability. While it is important to review FAME periodically, the programs are self-funding and internal annual evaluations are combined with readjustments as needed.

Program	Program Type	Recommendation
Commercial Loan Insurance Program	Economic Development	• Retain in place
Economic Recovery Loan Program	Economic Development	• Retain in place
Maine Seed Capital Investment Tax Credit	Economic Development	• Retain in place
Regional Economic Development Revolving Loan Program	Economic Development	• Retain in place
Linked Investment Program for Commercial Enterprises	Economic Development	• Retain in place
Maine New Markets Capital Investment Program	Economic Development	• Retain in place
Linked Investment Program for Agriculture	Economic Development	• Retain in place

Program	Program Type	Recommendation
Maine Economic Development Venture Capital Revolving Investment Program (VCRIP)	Research & Development	• Retain in place

Department of Economic and Community Development/ U.S. Department of Labor

Program	Program Type	Recommendation
Maine Manufacturing Extension Partnership (MEP)	Economic Development	• Retain in place • Please note: operated as a trade advisory program, and not as a grant or credit program

Small Business Administration/ Department of Economic & Community Development

Program	Program Type	Recommendation
Small Business Development Centers (SBDC)	Economic Development	• Retain in place • Please Note: operated as an advisory and incubator program and not as a grant or credit program

Rural Development Authority

Rural Maine has several clearly identified problems including lack of access to reliable broadband, cell coverage, and natural gas. Addressing these core infrastructure needs may more directly improve economic opportunities. This finding has been consistent through several iterations of these evaluations.

Program	Program Type	Recommendation
Commercial Facilities Development Program	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core rural issues, including basic infrastructure
Speculative Industrial Buildings Program	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core rural issues, including basic infrastructure

Maine Community College System

Program	Program Type	Recommendation

Program	Program Type	Recommendation
Maine Quality Centers	Economic Development	• Retain in place • Build further awareness • Operated as a trade advisory program, and not as a grant or credit program • Ensure that workforce training and improvement is incorporated in comprehensive economic development efforts, not as stand alone • As a component in future overall strategy, expand program to be modelled after best-in-class workforce development programs, such as AIDT (Alabama) and Quick Start (Georgia)

Department of Defense

Program	Program Type	Recommendation
Maine Procurement Technical Assistance Center (PTAC)	Economic Development	• Retain in place • Encourage PTAC to take a more active role on lobbying for transparency and improvements in the bid process for government and university system projects • Operated as a trade advisory program, and not as a grant or credit program

Center for Law and Innovation - University of Maine Law School

Program	Program Type	Recommendation
Maine Patent Program	Research & Development	• Program has been largely dormant and should be revived • Previously operated as a trade advisory program, and not as a grant or credit program • We repeat the recommendation to consider housing this program within another organization with complementary functionality such as MTI

Department of Agriculture/ Administered by FAME

Program	Program Type	Recommendation

Program	Program Type	Recommendation
Agricultural Marketing Loan Fund	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core agricultural issues, including basic infrastructure
Maine Farms for the Future Grants	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core agricultural issues, including basic infrastructure
Potato Marketing Improvement Fund	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core agricultural issues, including basic infrastructure
Agricultural Development Grant Program	Economic Development	• Determine ways of consolidating funding and increasing flexibility to address core agricultural issues, including basic infrastructure

General Recommendations

In addition to the items above, the following are general observations on the effective role for incentives, credits, and similar programs:

D1. **Continually Examine and Refine Economic Development and R&D Strategy:** It is important to have a coherent strategy for growth, with a clear role for how incentives and similar programs will emphasize comparative advantages of states or compensate for the lack of these comparative advantages. Maine has continued to move in this direction through the discussion of LD 367 - An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State. Such a strategy will provide a sound basis for a thorough revision of the state's credits, incentives, and R&D assistance to make them a more direct operational expression of the state's strategy for economic sustainability and innovation.

D2. **Continue to Support Large Non-Profit Laboratories:** Private, non-profit research institutions are marquee institutions bolstering Maine's reputation and draw significant talent to the state. They are economic drivers and help set the tone for a successful R&D climate in the state. The institutions' presence also positively impacts the overall presence of angel, venture capital, and private equity involvement in Maine.

D3. **Better Refine the Role of Pure Research in the State's Development Strategy:** The State's lack of an economic development strategy makes it difficult to establish the role of funding pure research. As the State makes steps towards establishing its overall strategy, it needs to explicitly define the role of pure research as a critical component for economic development. As it stands, it is unclear whether the State considers pure research a priority. Many funding programs are geared towards the commercial development side of R&D because it is easier to measure the benefits when state-funded projects become commercialized. However, as both

stakeholders and participants in the roundtables pointed out numerous times, pure research can lead to discoveries that have commercial applications, even creating entirely new markets. Likewise, other non-research commercial interests choose to locate near pure research institutions because of spinoff benefits. The impact of pure research is difficult to quantify because of its long-term nature, which traditionally does not fit with the State's need for monitoring and evaluation of its investment returns. Therefore, the State needs *long-term vision* and *trust* in order to accept the beneficial nature of pure research, as opposed to a short-term focus on immediate returns which would warp expectations.

D4. **Improve Searchability for Information:** Make sure to refer to programs consistently by their correct name. In certain cases, the names for the same programs are similar but not identical. This can make finding the correct program information difficult, especially if the name has changed over time, which may confuse potential incentive applicants. Ensure all programs accurately use metadata keywords and not exclusively use abbreviations so internet search engines can effectively find the program information.

D5. **Improve Accuracy of Program Data Online:** Ensure that programs have clear evaluation criteria, clear program requirements, and clear purge requirements listed on the program administrator's website. This transparency of evaluation procedures was specifically noted as an issue of concern for MTI in the past, though its website clearly walks through the application, review, and reporting process, listing all steps and applicable forms. For example, concerning the evaluation of Development Loans, MTI's website states "Peer Reviewer Guidelines are provided to our reviewers, and the Technology Boards use the Review Committee Guidance. Applicants will receive a copy of all reviewer feedback and be allowed to respond in writing." This commitment to transparency of process should encourage interested parties.

D6. **Develop Central Storage for Reporting Documentation:** To evaluate the incentive programs going forward, it is necessary for the evaluating party to obtain as many recipient lists and as many annual reports from as many incentive programs as possible. Legislative changes should be made to allow the analyst team designated by the State of Maine to have full access to program data as required.

D7. **Program Confidentiality:** Legislative changes should be made to provide for full access to - and evaluation of - program data as required, whether this is performed internally by a program administrator, by a designated state agency, or by an independent evaluator under a confidentiality agreement. There appears to be a challenge to obtaining data where MRS administers part of a program for another economic development or R&D program administrator. If this program data is made more directly available, the evaluator will be able to request a much smaller subset of data from companies and obtain more accurate and detailed information for analysis.

D8. **Work Collaboratively Across State Entities:** Organizations, economic development representatives, town and city leaders, and business leaders across Maine should work together for the betterment of the state. In addition to positive collaboration, parties should also avoid speaking negatively about certain regions or organizations in conversations with outside companies, consultants, or new organizations. The state and all of its partners should

positively showcase both its accomplishments and its forward efforts. Furthermore, increased collaboration should encourage greater knowledge of programs administered by other institutions. This knowledge sharing would help businesses that approach an institution with a need for which the institution is ill-suited but can refer to an appropriate contact based on previous collaboration.

D9. **Understand Workforce Recruitment and Retention as an Economic Development Issue:** Retaining Maine's talent and attracting new talent is as much as a factor in economic sustainability and innovation as is attracting and fostering businesses. The University of Maine's recent efforts to recruit students from across New England is a useful first step. This should be augmented with other efforts to keep this talent in state.

D10. **Expand the Current Opportunity Maine Program:** Expand the current Opportunity Maine program (at a lower credit rate) to include recruited employees with Associate's and bachelor's degrees who move to the state of Maine, pay taxes in the State of Maine, and work in the State of Maine. As requested by the business community, consider expanding the program to certain master's and Doctorate degrees for attracting employees with critical skills needed by Maine businesses. Further, consider structuring this as a benefit to companies in their efforts to recruit talent to the state.

D11. **Work with Businesses to Determine Greatest Educational Need:** Businesses understand where their greatest talent needs will be over the next few years. The State should work with the businesses to help residents understand where future opportunities will lie, recruit into appropriate education tracks, and train to the current and future employment needs in the State of Maine.

D12. **Business Retention:** Consider adding a business retention program which would be tasked with both ongoing relationships with Maine companies and immediate retention action when required. Note that this program does not need to reside within DECD and may operate well in a public private partnership setting, such as the MEGC.

D13. **Consolidate Programs as Suggested in the Program Specific Recommendations Section:** Consider consolidating like programs administered by the same entity into one larger program. As identified in the section above, many of the tax credit programs are very similar or identical but geared towards a different type of company. These should be consolidated to enhance applicability, impact, and efficiency.

Implementation

As a means for implementing a general recalibration of the State's economic development and research & development efforts, we propose the following measures:

E1. As put forth in LD 367 - An Act to Implement Recommendations of Government Oversight Committee to Develop A Long-Range Strategic Plan for Economic Improvement in the State, confirm the State's economic development goals and overall strategy, including a plan for coordinating business establishment, growth, retention, and attraction. This plan should contain a firm understanding of the State's advantages and disadvantages, the profiles of business types that this naturally attracts, and the motivations behind their location decisions.

It should also include an explicit identification of the organization which will act as the coordinating entity for economic development activities and investments.

E2. Develop a coordinating team of individuals to include members of the Executive branch, the Legislature, and selected stakeholders to facilitate conversation and action on economic development and research & development activities. The current project's steering committee may act as the core for this team, or could be assigned to the MEGC.

E3. Review the list of consolidation, expansion, reconfiguration, and elimination recommendations made above. Work with the State legislature to make appropriate program changes and to implement new mechanisms for reporting and for information sharing between and among responsible parties within the government of the State of Maine.

E4. Develop (or alter) enabling legislation for the new (or repurposed) Centralized Coordinating Agency for economic development activities and investments. This may take the form of something similar to the model used by Enterprise Florida, or it may be an entirely new concept. It may be created out of an existing organization or it may be new. Regardless, such an organization is recommended.

These four measures should be taken alongside the State's continuing efforts to analyze the effectiveness of economic development and research & development programs in supporting Maine's continued economic sustainability and success. The current program – of which the current report is a component – provides an important periodic opportunity to evaluate results and change tactics based on data and on changing economic need.

Appendix A - Definitions

Item	Definition
Angel Investors	Individuals who back emerging entrepreneurial ventures, sometimes as a bridge to venture capital. Funding levels typically range from $50,000 to $2 million. Usually successful, sophisticated business people but the term can apply to all individual investors in a company regardless of business experience.
Applied research	Original investigations undertaken to acquire new knowledge but are directed primarily towards a specific, practical aim or commercial objective.
Basic Research	Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying phenomena and observable facts, without any particular application or use in view.
Commercialization	Sequence of actions necessary to achieve market entry and general market competitiveness of new innovative technologies, processes, and products.
Entrepreneurship	The art or science of innovation and risk-taking for profit in business; the quality of being an entrepreneur.
EPSCoR	Experimental Program to Stimulate Competitive Research is a federal program to assist those states that have historically received lesser amounts of federal R&D spending and have demonstrated a commitment to develop their research bases and to improve the quality of science and engineering research conducted at their universities and colleges. Maine has been a member of EPSCoR since 1980.
Industry Cluster	Groups of competing, collaborating and interdependent businesses working in a common industry and concentrated in a geographic region. Clusters draw on shared infrastructure and a pool of skilled workers and represent the specialization and comparative advantage of the region.
Innovation	A new way of doing something. It may refer to incremental and emergent or radical, revolutionary changes in thinking, products, processes, or organizations. A distinction is typically made between invention, an idea made manifest, and innovation, ideas applied successfully.
Invention	The creation of a new technology, item, or process, as opposed to its application in widespread use.
License	A legal agreement where an owner of a technology allows another organization to use or develop that technology in return for consideration.
NAICS	Stands for North American Industry Classification System.
Open Innovation	A paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology.
Targeted Technologies	Established in statute - 5 MRSA Chapter 407 - biotechnology, aquaculture and marine technology, composite materials technology, environmental technology, advanced technologies for forestry and agriculture, information technology and precision manufacturing technology.
Technology Transfer	The transfer of the commercialization rights for a technology from the originator to another organization, typically private. Also involves the legal protection of intellectual property.

Appendix B – List of Abbreviations

Acronyms and definitions used in this report

Acronym	Definition
ADM	Aerospace, Defense and Marine
CBA	Cost-Benefit Analysis
CEO	Chief Executive Officer
DC	District of Columbia
EDO	Economic Development Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HQ	Headquarters
ICA	Investment Consulting Associates
ICT	Information and Communication Technology
IPA	Investment Promotion Agency
IRR	Internal Rate of Return
IT	Information Technology
ITT	Information Technology and Telecom
MNE	Multinational Enterprise
NAFTA	North American Free Trade Association
NPV	Net Present Value
R&D	Research and Development
RDD	Research, Design and Development
US	United States
USD	United States Dollar
VAT	Value Added Tax

Lead agency acronyms and full program names used in this report

Lead Agency/Program Acronym	Full Program Name
AMLF	Agricultural Marketing Loan Fund
BETR	Business Equipment Tax Reimbursement
CDBG	Community Development Block Grant program
CLI	FAME Commercial Loan Insurance Program
DECD	Maine Department of Economic and Community Development
DL	MTI Development Loans
DOL	Department of Labor
ETIF	Employment Tax Increment Financing
FAME	Finance Authority of Maine
JITC	Jobs and Investment Tax Credit
LDA	Loring Development Authority program
MCED	Maine Center for Entrepreneurial Development
MEGC	Maine Economic Growth Council
MEP	Maine Manufacturing Extension Program
MITC	Maine International Trade Center
MPP	Maine Patent Program
MPTAC or PTAC	Maine Procurement Technical Assistance Center

MRDA or RDA	Maine Rural Development Authority
MRS	Maine Revenue Services
MTC	Maine Technology Centers
MTI	Maine Technology Institute
PMIF	Potato Marketing Improvement Fund
PTDZ	Pine Tree Development Zone
REDC	Regional Economic Development Corp
SBA	Small Business Administration loan program
SBDC	Small Business Development Centers
SBIR	Small Business Innovation Research
STTR	Small Business Technology Transfer
VCRIP	Maine Economic Development Venture Capital Revolving Investment Program

Appendix C – Programs Identified for Evaluation

Agency	Program
DECD/MRS	Pine Tree Development Zone (PTDZ)
DECD	Brunswick NAS Job Tax Increment Financing
DECD	Certified Media Production Tax Credit
DECD	Maine Made – Maine Products Marketing Program
DECD	Maine Manufacturing Extension Partnership (MEP)
DECD	Maine Small Business Development Centers
DECD	Maine Tourism Marketing Promotion Fund
DECD	Maine Venture Fund
DECD	Municipal Tax Increment Financing (MTIF)
RDA/DECD	Commercial Facilities Development Program
RDA/DECD	Speculative Industrial Buildings Program
FAME	Agricultural Marketing Loan Fund
FAME	Commercial Loan Insurance Program (CLI)
FAME	Economic Recovery Loan Program (ERLP)
FAME	Oil Storage Facility and Tank Replacement Program
FAME	Maine Economic Development Venture Capital Revolving Investment Program
FAME	Maine New Markets Capital Investment Program
FAME	Maine Seed Capital Investment Tax Credit
FAME	Potato Marketing Improvement Fund
FAME	Major Business Expansion Bond Program
FAME	Regional Economic Development Revolving Loan Fund
FAME	Revenue Obligations Securities Program
MRS	Business Equipment Tax Reimbursement (BETR)
MRS	Business Equipment Tax Exemption (BETE)
MRS	Credit for Rehabilitation of Historic Properties
MRS	High Technology Investment Tax Credit
MRS	Research Expense Tax Credit
MRS	Sales Tax Exemptions (non-PTDZ)
MRS	Shipbuilding Facility Credit
MTI	Cluster Initiative Program
MTI	Business Accelerator Grant Program
MTI	Development Loans (DL)
MTI	Equity Capital Fund
MTI	Maine Technology Asset Fund
MTI	Seed Grant Program
MTI	Phase 0 and Phase II SBIR Application Awards plus TAP Support
MTI	Maine Biomedical Research Bond
MTI	Maine Cancer and Aging Research Bond
MTI	Marine Jobs Bond
MQC	Maine Quality Centers Custom Training

Appendix D – Roundtables

ICA hosted 6 roundtables for companies and institutions to participate in an open discussion about Maine's economic development efforts, its business environment, and its incentives programs. Unfortunately, due to inclement weather and low response rates, two roundtables were cancelled. Though the roundtable attempted a semi-structured format (pre-determined questions to guide discussion), the roundtable discussions often took interesting turns that elaborated on unforeseen issues. The format was informal to encourage open discussion and the exchange of ideas and experiences.

Discussion Points

- What programs have you used?
- Are there particular points in your business cycle that are more difficult than others? How can they be made easier?
- Tell us a little about your experience operating in Maine – what has worked, what needs improvement?
- R&D Specific – How much of your work is pure research, as opposed to development of a commercial product or service?
- R&D Specific – For those on the development side, how long does it usually take before you see a return on your own investment?
- How has your experience been working with the state employees?
- How has your experience been working through the incentive programs?
- Do you have any suggestions for improving the business climate in the state of Maine?
- What have we not asked about that we should be asking?

Schedule of Roundtables

- Augusta, 11 December 2017 – Economic Development (CANCELLED)
- Bangor, 12 December 2017 – Economic Development (CANCELLED)
- Bangor, 12 December 2017 – Research & Development
- Brunswick, 18 December 2017 – Economic Development
- Portland, 19 December 2017 – Economic Development
- Portland, 19 December 2017 – Research & Development

Consolidated Discussion Notes

Programs Mentioned

- MTI programs, made known to one participant by Cooperative Extension which helped point company in right direction to find state resources.
    - Seed Capital program
    - Lightning Round
    - Cluster Initiative Program
    - Technology Asset Fund

- FAME programs
- Top Gun program but it costs money so start-ups can't really do that when resources are limited
- IEP program which provided deferred and discounted legal fees for companies within the then-specified state target sectors
- Pine Tree Development Zones
- SBA, SBDC programs
- Maine Quality Centers
- Community Block Grant
- Maine International Trade Center

Business Cycles

- Start-ups rapidly expand and therefor need to adapt their culture to entail more structure. This often requires new and different management talent.
    - One company attracted by Maine & Company said it was difficult to find middle management.
- PTDZ helps cyclical businesses in tough cycles by limiting revenue valleys.

Experience in Maine

- Challenges
    - Geography and logistics are a challenge.
    - Cost
        - One participant in the telecommunications industry mentioned that the tax environment is challenging.
        - Health care costs are increasing too rapidly.
        - The cost of living is not exactly low.
        - Some competitors are bringing in labor from the Midwest because it is more cost competitive.
    - Workforce/Talent recruitment and retention
        - It's riskier for R&D talent to live in Maine if the company fails. There are not many other option to fall back on in Maine, whereas in high density areas, it's easier to find another job nearby.
            - Individuals must be dedicated to their company in order to swallow the risk of living and working in Maine.
        - There's a challenge retaining the student population as well. Many more students are coming from out-of-state, which is a benefit since the state is shrinking demographically. However, if they do not stay, it is not a net benefit for the state.
            - They are unlikely to stay because there is not as much work opportunity in Maine.
        - Maine culture may affect aspirational nature of the people who often adopt a "good enough" mentality.
        - Lack of available talent is one reason why companies leave.
        - Finding a quality workforce is difficult in the state. Some companies have not been able to find a way to leverage workforce development programs through the State. Companies need more people that simply are not there. It's the biggest business challenge for Maine.
    - Finding manufacturing space was a challenge for one participant, which ended up locating in a facility that is now inadequate.

  - Obtaining signage in Maine can be problematic. There's a 5-year waitlist to place a generic sign on a state road.
  - Some local communities are anti-development and put up a lot of friction.

R&D

- Major challenge – great scientists, engineers do not necessarily make good businessmen. It's hard for someone trained in a different field to transition to management/leadership positions. R&D people start to get tied up in operational work instead of R&D work, which is where their strengths are.
- Jackson Labs and Bigelow are focused on research, though both seem to be making more effort to commercialize discoveries through spin-offs or partnerships with existing companies.
- MTI funding helps the non-profits obtain material, equipment, and proof of concept.
- The State needs to explore ways of fostering partnerships between pure research institutions and commercial partners for development. An example of how this relationship-building exercise can benefit both entities, as well as the State, is the collaborative partnership between Mook Sea Farm and Bigelow Labs. (Also applies to Suggestions below).
- The R&D bond programs at MTI were noted as a good resource despite academic institutions being the primary recipients in past rounds.

State Employees

- For the most part, employees are helpful.
- Anecdote: A staff member at MTI told a food manufacturer participant that the company would not receive funding because it was a food company. The company applied anyway and still received funding.
- It was noted that the DECD staff is too small, so it can only react. It is too under resourced to help coordinate.
- Particular staff members at University of Maine, MTI, Maine & Company, and the governor's account executive team were mentioned as great assets.

Program Experiences

- The State needs a long-term vision of investment.
- There is a perception that the Canadian government is more supportive of their industries. Maine is not a good environment for capital investment in forestry.
- Maine & Company assistance was noted as an asset.
- The timing of grants at the State and Federal level often do not work for companies.
- Clients of law firms or consulting firms ask about incentives, indicating there is a lack of awareness about existing state resources.
- The administrative burden of applying and complying is intimidating for small and mid-sized companies. If the administrative burden is too much, the incentive program might be antithetical.
- PTDZ
  - A participant was given the impression by a governor's account executive that the PTDZ program would have special electricity rates. When the company was PTDZ certified, the power company informed them that the special rates no longer existed.
  - PTDZ helps companies stay in business given rising costs. Canadian peers have all sorts of government subsidies – even though PTDZ is not as comparable, it does help.
  - The simplicity and easy of getting PTDZ certified was commended.
- Maine Quality Centers

  - For one roundtable participant in particular, this resource was touted as highly beneficial. Given employee turnover, it is expensive to train new workers. MQC helps with the cost of training through reimbursements.
  - Training programs can be difficult to set up, but the service is worthwhile when used.
    - This was noted several times. MQC is flexible but it cannot provide a custom program fast enough for was is required by companies. There is a problem with MQC's capacity and variability (some locations can deliver well, while others cannot).
- MTI funding
  - MTI programs were frequently noted as helpful.
  - Allows the business owner to retain local control instead of giving partial ownership to out-of-state investors.
  - Lightning rounds are useful and fast-working.
  - There is a sentiment among smaller companies that they compete for the same dollars as larger companies or non-profit institutions. These companies are worried that if they go head-to-head with these companies for the same funding, they'll be overlooked.
  - An aquaculture company attributed MTI funding for research to what launched the company to a different level of predictability and growth. The development side of that research became the foundation of the business. It led to capital investment and reliable revenue.

- FAME
  - Complaints about the Seed Capital Tax Credit arose when a participant lamented that the program discriminates against family-owned businesses by prohibiting family investors. Furthermore, the point was raised that much of family investment keeps ownership in state.
- MITC
  - Mentioned as very proactive.
  - Has a strong food export program.
- The TIF has been an important tool for the Midcoast Regional Redevelopment Authority.

Suggestions for Improving Business Climate

- The State should invest in management skills development and recruitment. If this is not addressed, successful start-ups may move elsewhere to source the growth management expertise located in different areas.
  - Increased start-up/entrepreneurial support would benefit the State.
- Status checks and aftercare efforts should be intensified since relationship building is an important factor in a demographically small state.
  - It was mentioned that MTI could focus more on this aspect. By acting as both a financial and management resource, the institution would be able to know when a company is at an "inflection point" – thereby directing the company to appropriate resources elsewhere if MTI cannot provide assistance itself.
  - A proactive effort is needed from all State resources.
- Awareness seems to be an important item of note. It was stressed that the State's institutions need to work on building awareness of its programs.
  - Maine Quality Centers should be at the forefront of this effort. As a workforce recruitment and development institution, its services address the most pressing issue companies in Maine face: workforce.

    - A participant unaware of MQC became animated and highly interested when learning about the resource at the roundtable event. This occurred at multiple roundtables.
- Refine the target sector strategy, but not at the exclusion of other businesses that are in need.
- Gap financing programs should have a portion prioritized to critical lifecycle events (moments where a company needs to expand or risks closure).
- Eliminate the service provider tax – this tax puts local service providers at a disadvantage to out-of-state competitors.
- The State needs to adopt a strategy whose vision will recognize the value of pure research without a fixated focus on immediate returns. Both corporate and non-profits alike noted that it is difficult to quantify the impact of research funding, though this does not fit well with the legislature's traditional need for monitoring and evaluation of investment returns. The State should instead be focused on the broader implications of pure research and its multiplier effects.
- The State needs to explore ways of fostering partnerships between pure research institutions and commercial partners for development.
    - There is not a strong enough connection between pure research institutions and the commercial side. This relationship potential is underutilized.
- "Maine does not have a good business plan for itself." Institutions and programs are not well coordinated. For instance, a report focused on diversifying the defense industry in Maine missed mentioning a large portion of existing industry there.
    - The State's business plan needs a coordinating agency. MEGC would be an appropriate fit for this role but lacks funding to do so.
- Power utilities are too costly, unreliable, and need improvement. Encouraging them to become proactive participants in economic development efforts could help. The legislation of municipal power authorities could allow localities to exert more control.

Other Commentary

- One participant noted the recent OPEGA report on the PTDZ and expressed the opinion that the report was incomplete and an unneeded distraction. They went on to note that some companies may have been intimidated to come forward to publicly testify to the program's success for fear of being labelled a "corporate welfare recipient," given the higher profile environment surrounding the incentives debate.
- Insurance costs are a huge threat. Rates are increasing rapidly every year across the board (cyber, health, workers' comp, etc.).
- Drugs are problematic from a workforce perspective.
- The State needs to be very focused on its university system since a lot of technology derives from university research, and companies often seek to located near knowledge centers. Encourage educational institutions to collaborate and not worry about their geographic turf.
- Maine needs to be telling more positive stories. It does not market itself well as a good business environment. More marketing would attract attention, capital, and talent.
- Measurement of programs should be backed up with policy, and then measurement again.
- A discussion around climate change and the implications it may have on the Maine economy took place. As one business owner noted, the problems caused by climate change, such as ocean acidification, is an opportunity for the State of Maine: If the State were to acknowledge the problems occurring as a result of climate change and allocated resources to address these challenges, it would make a marketing splash that would not go unnoticed by businesses whose livelihood depends on a healthy environment.

  - "Pre-Competitive Collaboration" is becoming a way to address sustainability concerns. Companies pool resources to radically increase the sustainability of resources to "grow the pie" instead of competing for market share.
- The drop in federal research money is concerning, as some participants noted.

Appendix E – Surveys

Maine Economic Development Incentive Survey 2017

Introduction:

Hello, and thank you in advance for your attention and cooperation. As a past or current recipient/participant of state economic incentive funds/programs it is part of your responsibility to provide certain data as requested by the State of Maine. But more importantly than your responsibility under Maine law (MRSA Title 5, §13056-B) is the opportunity to show these programs help make Maine more competitive and strengthen Maine's economy. The Maine Legislature is currently reviewing all tax expenditure programs for effectiveness. This review and subsequent debate could result in changes to various programs. The more data we collect will only help strengthen the argument that these programs are directly tied to the creation of new quality jobs and attracting new private investment.

We are very well aware of the effort required by you to complete tasks like this and do all we can to limit the frequency and time you will spend on such legally required requests. For Example – this request had been an annual requirement in past years. We have worked on your behalf to make this legal requirement less frequent. So now, every other year, the law compels the Maine Department of Economic and Community Development to ask for, and for past and current recipients to respond to the set of questions that accompany.

Please also note that we now split the questions into two parts. We ask that Part 1 be completed as soon as feasible and that the second section be completed before the deadline noted in your email invitation. This is another example of the Maine DECD attempting to make working with State Government easier for you.

All information is confidential, according to the contractual terms of your incentive program agreement with the State of Maine. To complete the survey, please have at hand your Profit & Loss (P&L) statement and Balance Sheet for the last three (3) years; as well as payroll data; and staff information. We will also seek information about your future strategy and plans. If you have any questions, please do not hesitate to contact Maine DECD Director of Tax Incentives Andrea Smith at Andrea.Smith@maine.gov or (207) 624-9813. For technical questions, please contact Collin Perciballi with Investment Consulting Associates at collin@ic-associates.com or (617) 395-6688.

_____

What's In It For You?

In addition to complying with the law, you will also be; A) providing valuable data that may protect a program that you benefit from, or B) help us identify programs that you are a part of but do not benefit from so future state budgets may avoid wasting taxpayer dollars on non-productive programs. The ability to offer financial assistance through a variety of incentive programs to Maine businesses is crucial

to the economic vitality of our State. To ensure the continued support and funding of the programs, my department is statutorily required to perform a biennial assessment to determine their effectiveness.

We appreciate the time taken to complete this survey and value your comments.

Best Regards,

George C. Gervais
Commissioner
Maine Department of Economic and Community Development

Questions:

Part 1: Please complete Part One. After completion, proceed to Part Two.

1. Contact Details:	2. For the industry sector classifications below, please select the industry sector that best matches your business.
a) Name b) Position c) Company d) Phone Number e) Email Address	a) Advanced Composite & Related Materials b) Aerospace & Defense c) Agriculture d) Aquaculture e) Automobiles & Auto Parts f) Biotechnology g) Chemicals h) Commercial Financial Services i) Commercial Services & Supplies j) Construction & Engineering k) Consumer Products Manufacturing l) Consumer Services m) Energy (Oil & Gas, Alternative Fuels) n) Environmental Technology o) Financial Services (Commercial) p) Food & Beverages q) Healthcare Providers & Services r) Healthcare Services s) Industrial Services t) Information Technology u) Insurance & Insurance Services v) Machinery, Equipment & Components w) Marine Construction & Services (All Types) x) Media & Publishing y) Medical Research z) Mineral Resources/Mining aa) Paper & Forestry Products bb) Personal Banking & Investment Services cc) Pharmaceuticals dd) Precision Manufacturing (All Materials) ee) Renewable Energy ff) Software & IT Services gg) Technology & Communications Equipment hh) Telecommunications Services ii) Textiles & Apparel jj) Trading & Distribution kk) Transportation ll) Utilities mm) Hotel/Motel/Inn nn) *Open Text Box for "Other" Response

3. Please identify the top three markets/industries for your product(s) or service(s), the size of the market in USD, and the geography of the market. To use the "other" field, please select "Other" from the industry pull down menu. To enter multiple other markets, separate entries with a semicolon.

a) Industry	b) Approx. Size	c) Geography
1) Advanced Composite & Related Materials	1) 0 - 100,00	1) State of Maine
2) Aerospace & Defense	2) 100,000 - 250,000	2) New England (including State of Maine)
3) Agriculture	3) 250,000 - 500,000	3) New England (not including State of Maine)
4) Aquaculture	4) 500,000 - 1,000,000	4) Northeast (including State of Maine)
5) Automobiles & Auto Parts	5) 1,000,000 - 2,500,000	5) Northeast (not including State of Maine)
6) Biotechnology	6) 2,500,000 - 5,000,000	6) South (including State of Maine)
7) Chemicals	7) 5,000,000 - 10,000,000	7) South (not including State of Maine)
8) Commercial Financial Services	8) 10,000,000 - 25,000,000	8) Midwest (including State of Maine)
9) Commercial Services & Supplies	9) 25,000,000 - 50,000,000	9) Midwest (not including State of Maine)
10) Construction & Engineering	10) 50,000,000 - 100,000,000	10) West (including State of Maine)
11) Consumer Products Manufacturing	11) 100,000,000 - 250,000,000	11) West (not including State of Maine)
12) Consumer Services	12) 250,000,000 - 500,000,000	12) US (including State of Maine)
13) Energy (Oil & Gas, Alternative Fuels)	13) 500,000,000 - 1,000,000,000	13) US (not including State of Maine)
14) Environmental Technology	14) >1,000,000,000	14) International (including US)
15) Financial Services (Commercial)		15) International (not including US)
16) Food & Beverages		
17) Healthcare Providers & Services		
18) Healthcare Services		
19) Industrial Services		
20) Information Technology		
21) Insurance & Insurance Services		
22) Machinery, Equipment & Components		
23) Marine Construction & Services (All Types)		
24) Media & Publishing		
25) Medical Research		
26) Mineral Resources/Mining		
27) Paper & Forestry Products		
28) Personal Banking & Investment Services		
29) Pharmaceuticals		
30) Precision Manufacturing (All Materials)		
31) Renewable Energy		
32) Software & IT Services		
33) Technology & Communications Equipment		
34) Telecommunications Services		
35) Textiles & Apparel		
36) Trading & Distribution		
37) Transportation		
38) Utilities		
39) Hotel/Motel/Inn		
40) *Open Text Box for "Other" Response		

4. Please provide breakdown of the shareholder structure of your company by entering a percentage for each type of shareholder in the provided space. For example, "25%" should be entered as "25". Please note the total for all three types of shareholders should add up to 100%.	5. What is the corporate tax structure for your company?	6. What percentage of your annual sales comes from the following sources? For example, "10%" should be entered as "10".
a) Shareholders within Maine b) US Shareholders Outside of Maine c) Non-US Shareholders	a) Sole Proprietorship b) Partnership c) LLP d) LLC e) C-corp f) S-corp g) Non-Profit/Tax Exempt	a) In State of Maine b) In US (not including Maine) c) International Sales

7. What is the total annual revenue generated for the three (3) most recent fiscal years? For example, "$250,000" should be entered as "250000". Please note all amounts are in US dollars.	8. What are your total comanpy expenses of the last three (3) years? For example, "$250,000" should be entered as "250000".	9. Please estimate your company expenses under Question 8 as a percentage of your total company sales of the last three (3) years. For example, "10%" should be entered as "10".
a) year 2014 b) year 2015 c) year 2016	a) year 2014 b) year 2015 c) year 2016	a) year 2014 b) year 2015 c) year 2016
10. What is the net profit your company generated for the last three (3) most recent fiscal years. For example, "$250,000" should be entered as "250000". Please note all amounts are in USD.	11. What is the total amount of income tax your company has paid to the State of Maine in the three (3) most recent fiscal years? For example, "$250,000" should be entered as "250000". Please note all amounts are in USD.	
a) year 2014 b) year 2015 c) year 2016	a) year 2014 b) year 2015 c) year 2016	

12. For **2014**, please identify the five (5) most important incentive programs to which your company applied and amount of funding received. Please note the list below does not include all of the State of Maine's incentive programs.

a) Incentive Program 1

1) Pine Tree Development Zones (DECD/MRS)	15) Maine New Markets Capital Investment Program (FAME)	29) Development Loans (MTI)
2) Brunswick NAS Job Tax Increment Financing (DECD)	16) Maine Seed Capital Investment Tax Credit (FAME)	30) Equity Capital Fund (MTI)
3) Certified Media Production Tax Credit (DECD)	17) Potato Marketing Improvement Fund (FAME)	31) Phase 0 and Phase II SBIR Application Awards plus TAP Support (MTI)
4) Maine Made – Maine Products Marketing Program (DECD)	18) Major Business Expansion Bond Program (FAME)	32) Maine Biomedical Research Bond (MTI)
5) Maine Manufacturing Extension Partnership (DECD)	19) Regional Economic Development Revolving Loan Fund (FAME)	33) Maine Cancer and Aging Research Bond (MTI)
6) Maine Small Business Development Centers (DECD)	20) Revenue Obligations Securities Program (FAME)	34) Marine Jobs Bond (MTI)
7) Maine Tourism Marketing Promotion Fund (DECD)	21) Business Equipment Tax Reimbursement/Exemption (MRS)	35) Maine Technology Asset Fund MTI)
8) Maine Venture Fund (DECD)	22) Credit for Rehabilitation of Historic Properties (MRS)	36) Seed Grant Program (MTI)
9) Municipal Tax Increment Financing (DECD)	23) High Technology Investment Tax Credit (MRS)	37) TechStart Program (MTI)
10) Agricultural Marketing Loan Fund (FAME)	24) Research Expense Tax Credit (MRS)	38) Commercial Facilities Development Program (RDA)
11) Commercial Loan Insurance Program (FAME)	25) Sales Tax Exemptions - non PTDZ (MRS)	39) Speculative Industrial Buildings Program (RDA)
12) Economic Recovery Loan Program (FAME)	26) Shipbuilding Facility Credit (MRS)	40) Maine Quality Centers In-Kind Training
13) Oil Storage Facility and Tank Replacement Program (FAME)	27) Cluster Initiative Program (MTI)	41) None
14) Maine Economic Development Venture Capital Revolving Investment Program (FAME)	28) Business Accelerator Grant Program (MTI)	42) "Other" Response Box

aa) Amount in USD for 2014
b) Incentive Program 2
Options #1-42 are analogous to A's options
bb) Amount in USD for 2014
c) Incentive Program 3
Options #1-42 are analogous to A's options
cc) Amount in USD for 2014
d) Incentive Program 4
Options #1-42 are analogous to A's options
dd) Amount in USD for 2014

e) Incentive Program 5
Options #1-42 are analogous to A's options
ee) Amount in USD for 2014

13. For **2015**, please identify the five (5) most important incentive programs to which your company applied and amount of funding received. Please note the list below does not include all of the State of Maine's incentive programs.

a) Incentive Program 1

1) Pine Tree Development Zones (DECD/MRS)	15) Maine New Markets Capital Investment Program (FAME)	29) Development Loans (MTI)
2) Brunswick NAS Job Tax Increment Financing (DECD)	16) Maine Seed Capital Investment Tax Credit (FAME)	30) Equity Capital Fund (MTI)
3) Certified Media Production Tax Credit (DECD)	17) Potato Marketing Improvement Fund (FAME)	31) Phase 0 and Phase II SBIR Application Awards plus TAP Support (MTI)
4) Maine Made – Maine Products Marketing Program (DECD)	18) Major Business Expansion Bond Program (FAME)	32) Maine Biomedical Research Bond (MTI)
5) Maine Manufacturing Extension Partnership (DECD)	19) Regional Economic Development Revolving Loan Fund (FAME)	33) Maine Cancer and Aging Research Bond (MTI)
6) Maine Small Business Development Centers (DECD)	20) Revenue Obligations Securities Program (FAME)	34) Marine Jobs Bond (MTI)
7) Maine Tourism Marketing Promotion Fund (DECD)	21) Business Equipment Tax Reimbursement/Exemption (MRS)	35) Maine Technology Asset Fund MTI)
8) Maine Venture Fund (DECD)	22) Credit for Rehabilitation of Historic Properties (MRS)	36) Seed Grant Program (MTI)
9) Municipal Tax Increment Financing (DECD)	23) High Technology Investment Tax Credit (MRS)	37) TechStart Program (MTI)
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aa) Amount in USD for 2015
b) Incentive Program 2
Options #1-42 are analogous to A's options
bb) Amount in USD for 2015
c) Incentive Program 3
Options #1-42 are analogous to A's options
cc) Amount in USD for 2015
d) Incentive Program 4
Options #1-42 are analogous to A's options
dd) Amount in USD for 2015
e) Incentive Program 5
Options #1-42 are analogous to A's options
ee) Amount in USD for 2015

14. For **2016**, please identify the five (5) most important incentive programs to which your company applied and amount of funding received. Please note the list below does not include all of the State of Maine's incentive programs.

a) Incentive Program 1

1) Pine Tree Development Zones (DECD/MRS)	15) Maine New Markets Capital Investment Program (FAME)	29) Development Loans (MTI)
2) Brunswick NAS Job Tax Increment Financing (DECD)	16) Maine Seed Capital Investment Tax Credit (FAME)	30) Equity Capital Fund (MTI)
3) Certified Media Production Tax Credit (DECD)	17) Potato Marketing Improvement Fund (FAME)	31) Phase 0 and Phase II SBIR Application Awards plus TAP Support (MTI)

4) Maine Made – Maine Products Marketing Program (DECD)	18) Major Business Expansion Bond Program (FAME)	32) Maine Biomedical Research Bond (MTI)
5) Maine Manufacturing Extension Partnership (DECD)	19) Regional Economic Development Revolving Loan Fund (FAME)	33) Maine Cancer and Aging Research Bond (MTI)
6) Maine Small Business Development Centers (DECD)	20) Revenue Obligations Securities Program (FAME)	34) Marine Jobs Bond (MTI)
7) Maine Tourism Marketing Promotion Fund (DECD)	21) Business Equipment Tax Reimbursement/Exemption (MRS)	35) Maine Technology Asset Fund MTI)
8) Maine Venture Fund (DECD)	22) Credit for Rehabilitation of Historic Properties (MRS)	36) Seed Grant Program (MTI)
9) Municipal Tax Increment Financing (DECD)	23) High Technology Investment Tax Credit (MRS)	37) TechStart Program (MTI)
10) Agricultural Marketing Loan Fund (FAME)	24) Research Expense Tax Credit (MRS)	38) Commercial Facilities Development Program (RDA)
11) Commercial Loan Insurance Program (FAME)	25) Sales Tax Exemptions - non PTDZ (MRS)	39) Speculative Industrial Buildings Program (RDA)
12) Economic Recovery Loan Program (FAME)	26) Shipbuilding Facility Credit (MRS)	40) Maine Quality Centers In-Kind Training
13) Oil Storage Facility and Tank Replacement Program (FAME)	27) Cluster Initiative Program (MTI)	41) None
14) Maine Economic Development Venture Capital Revolving Investment Program (FAME)	28) Business Accelerator Grant Program (MTI)	42) "Other" Response Box

aa) Amount in USD for 2016
b) Incentive Program 2
Options #1-42 are analogous to A's options
bb) Amount in USD for 2016
c) Incentive Program 3
Options #1-42 are analogous to A's options
cc) Amount in USD for 2016
d) Incentive Program 4
Options #1-42 are analogous to A's options
dd) Amount in USD for 2016
e) Incentive Program 5
Options #1-42 are analogous to A's options
ee) Amount in USD for 2016

15. What is the total amount of money or financial benefit received from ALL State of Maine incentive programs for each of the last three (3) years? For example, "$250,000" should be entered as "250000".

a) Year 2014
b) Year 2015
c) Year 2016

16. What were the direct results of the incentives?

a) Rows
aa) 2014
bb) 2015
cc) 2016

b) Columns
aa) Additional Jobs
1) 0
2) 1-10
3) 11-25
4) 51-100
5) 101-250
6) 251-500
7) 501-1000
8) >1000

bb) Retained Jobs
1) 0
2) 1-10
3) 11-25
4) 51-100
5) 101-250

6) 251-500
7) 501-1000
8) >1000

cc) Additional Payroll Taxes (in USD)
1) <50,000
2) 50,000 - 100,000
3) 100,000 - 250,000
4) 250,000 - 500,000
5) 0.5 - 1 million
6) 1 - 2 million
7) 2 - 5 million
8) 5 - 10 million
9) 10 - 25 million
10) 25 - 50 million
11) 50 - 100 million
12) >100 million

dd) Additional Capital Investment (in USD)
1) <50,000
2) 50,000 - 100,000
3) 100,000 - 250,000
4) 250,000 - 500,000
5) 0.5 - 1 million
6) 1 - 2 million
7) 2 - 5 million
8) 5 - 10 million
9) 10 - 25 million
10) 25 - 50 million
11) 50 - 100 million
12) >100 million

ee) Additional Exports (in USD)
1) <50,000
2) 50,000 - 100,000
3) 100,000 - 250,000
4) 250,000 - 500,000
5) 0.5 - 1 million
6) 1 - 2 million
7) 2 - 5 million
8) 5 - 10 million
9) 10 - 25 million
10) 25 - 50 million
11) 50 - 100 million
12) >100 million

ff) Number of Employees Trained
1) 0
2) 1-10
3) 11-25
4) 51-100
5) 101-250
6) 251-500
7) 501-1000
8) >1000

gg) Number of Certifications Issued
1) 0
2) 1-10
3) 11-25
4) 51-100
5) 101-250
6) 251-500
7) 501-1000
8) >1000

hh) Total Hours of Training
1) 0
2) 1-10
3) 11-25
4) 51-100
5) 101-250

	6) 251-500 7) 501-1000 8) >1000	
17. Please provide a breakdown of the total number of full-time (32 or more than 32 hours per week), part-time (less than 32 hours per week) employees within the State of Maine in 2016.	18. Please provide a breakdown of your full-time State of Maine employees per job function in 2016 by entering the absolute number of full-time State of Maine employees per job function.	19. Please provide the average annual salary in 2016 for each job function within the State of Maine that is listed below. For example, "$65,000" should be entered as "65000".
a) Total Full-Time State of Maine Employees b) Total Part-Time State of Maine Employees	a) Manufacturing/Operations b) Technical (engineers, researchers, scientists, etc.) c) Finance d) Marketing and Sales e) Administrative/Executive f) Other	a) Manufacturing/Operations b) Technical (engineers, researchers, scientists, etc.) c) Finance d) Marketing and Sales e) Administrative/Executive f) Other
20. Is there anything else you would like to share with us regarding the State of Maine's Incentive Programs?		
a) *Open Response Text Box*		

Part 2: Please complete Part Two. This is the final stage of the survey.

21. Was your business founded in the State of Maine?	22. When did you first establish operations in the State of Maine?	23. Please select the current number of business locations your company has in the State of Maine.
a) Yes b) No	a) 2016 b) 2015 c) 2014 d) 2013 e) 2012 f) 2011 g) 2010 h) 2009 i) 2008 j) 2007 k) 2006 l) 2005 m) 2004 n) 2003 o)2002 p) 2001 q) 2000 r) 1999 s) 1998 t) 1997 u) 1996 v) 1995 w) 1994 x) 1993 y) 1992 z) 1991 aa) 1990 bb) 1989 cc) 1988 dd) 1987 ee) 1986 ff) 1985 gg) 1984 hh) 1983 ii) 1982 jj) 1981	a) 1 b) 2 c) 3 d) 5 e) 5 f) >5

kk) 1980
ll) 1979
mm) 1978
nn) 1977
oo) 1976
pp) 1975
qq) 1974
rr) 1973
ss) 1972
tt) 1971
uu) 1970
vv) Prior to 1970

24. Does your company have an annual budget for R&D?	25. Please identify the stage your company is in at this time (select the stage that is closest).	26. Are you planning to invest in expanding your facilities or operations in the State of Maine in the next three (3) years?
a) Yes b) No c) Potentially in the Future d) R&D Budget Comments	a) Very early stage (idea and/or concept evaluation) b) Early stage (R&D and/or alpha/beta testing) c) Mid stage (product development and release) d) Growth stage (established product line with sales growth and diversification) e) Mature stage (multiple product lines, consistently growing sales and markets)	a) Yes b) Maybe c) No

27. Please select the appropriate business activity for each type of new investment your company plans to make in the State of Maine in the next three (3) years. Please select all that apply.

Type of Facility	a) Existing Facility	b) New Facility
aa) Manufacturing		
bb) R&D Center		
cc) Laboratory		
dd) Training Center		
ee) Shared Service Center		
ff) Headquarters		
gg) Repair Center		
hh) Customer Service Center		
ii) Call Center		

28. On a scale from 1 to 10 (where 1 represents "not at all important" and 10 represents "critically important"), please rate the importance of the State of Maine's existing funding or incentive assistance programs to realize your company's growth plans.

a) Scale 1 - 10

29. Which of the following Maine agencies or organizations are you aware of or have you engaged? Please mark those you have engaged with even if the interaction did not result in an application or incentive award. Please select all that apply.

Agency of Organization	a) Aware	b) Engaged
aa) MTI: Maine Technology Institute		
bb) MITC: Maine International Trade Center		
cc) DECD: Department of Economic & Community Development		
dd) FAME: Finance Authority of Maine		
ee) MCED: Maine Center for Entrepreneurial Development		
ff) SBA: Small Business Administration		
gg) REDC: Regional Economic Development Corp		
hh) MEP: Maine Manufacturing Extension Program		
ii) MPP: Maine Patent Program		
jj) PTAC: Maine Procurement Technical Assistance Center		
kk) DOD: Department of Defense		
ll) DOA: Department of Agriculture		
mm) EMDC: Easter Maine Development Corp		
nn) RDA: Rural Development Authority		
oo) None of the Above		

30. Based on your experience working with the State of Maine's incentive programs, on a scale from 1 to 10 (where 1 represents “very poor”

and 10 represents “exceptional”), how would you rate the following aspects:

a) Columns
- aa) 1
- bb) 2
- cc) 3
- dd) 4
- ee) 5
- ff) 6
- gg) 7
- hh) 8
- ii) 9
- jj) 10

b) Rows
- aa) Efficiency of Process
- bb) Knowledge of Staff
- cc) Reporting Requirements
- dd) Supporting Services
- ee) Responsiveness
- ff) Likelihood to Recommend State of Maine's Incentive Programs

31. Is there any change you can recommend or any form of funding assistance or service that would be helpful to a company like yours?

a) *Open Response Text Box*

32. On a scale from 1 to 10 (where 1 represents "very difficult" and 10 represents "very easy"), please rate how difficult it was for you to hire qualified staff per job function within the State of Maine to grow your business?

a) Rows
- aa) Manufacturing/ Operations
- bb) Technical (engineers, researchers, scientists, etc.)
- cc) Finance
- dd) Marketing and Sales
- ee) Administrative/ Executive
- ff) Other

b) Columns
- aa) 1
- bb) 2
- cc) 3
- dd) 4
- ee) 5
- ff) 6
- gg) 7
- hh) 8
- ii) 9
- jj) 10

33. How many additional full-time State of Maine employees do you expect to hire in the next three (3) years?

a) *Open Response Text Box*

34. Please identify the critical needs for the future success of your company.

a) *Open Response Text Box*

35. On a scale from 1 to 10 (where 1 represents "no success" and 10 represents "significant success"), how do you rate your company's accomplishments in the State of Maine in terms of the following elements:

a) Row
- aa) Developing products
- bb) Bringing products to market
- cc) Growing sales revenue
- dd) Manufacturing
- ee) Providing service
- ff) Building partnerships
- gg) Developing supplier relationships
- hh) Building staff
- ii) Raising capital
- jj) Expanding markets

b) Column
- aa) 1
- bb) 2
- cc) 3
- dd) 4
- ee) 5
- ff) 6
- gg) 7
- hh) 8
- ii) 9
- jj) 10

36. What barriers prevent you from further growth? Please select the top three concerns in order (where Business concern number 1 represents the most challenging barrier). If more than one "Other" concern is selected, please separate business concerns with a colon.

a) Business Concern #1
1) Finances - access to capital
2) Finances - managing expenses
3) Finding the right employees
4) Employee turnover
5) Technology obsolescence
6) Slow product development
7) In-State competition
8) Out-of-State competition
9) Government regulation
10) Price increases
11) Collective bargaining/Labor Unions
12) Other

b) Business Concern #2
1) Finances - access to capital
2) Finances - managing expenses
3) Finding the right employees
4) Employee turnover
5) Technology obsolescence
6) Slow product development
7) In-State competition
8) Out-of-State competition
9) Government regulation
10) Price increases
11) Collective bargaining/Labor Unions
12) Other

c) Business Concern #3
1) Finances - access to capital
2) Finances - managing expenses
3) Finding the right employees
4) Employee turnover
5) Technology obsolescence
6) Slow product development
7) In-State competition
8) Out-of-State competition
9) Government regulation
10) Price increases
11) Collective bargaining/Labor Unions
12) Other

37. Is your company profitable?	38. If your company is not yet profitable, please estimate the time in years to reach profitability.
a) Yes	a) 1
b) No	b) 2
	c) 3
	d) 4
	e) 5
	f) 6
	g) 7
	h) 8
	i) 9
	j) 10
	k) >10

Thank you very much for completing this survey. Please note that you cannot go back and modify your answers after you submit your responses at the end of the survey.

George C. Gervais
Commissioner
Maine Department of Economic and Community Development

Maine R&D Survey 2017

The State R&D Investments Survey is based on prior year surveys administered by the Maine Office of Innovation and Maine Department of Economic and Community Development. The Survey includes questions primarily based on R&D metrics, but also includes segments on student enrollment and degree attainment information.

To complete the survey, please have at hand your student and staff headcount data; data on publications as well as research proposals and research awards; intellectual property implications; and spin-off companies if applicable. If you have any questions, please do not hesitate to contact **John Endicott at Maine Department of Economic and Community Development (DECD)**.

As a past or current recipient of State R&D funding, providing this information is part of your responsibility **under Maine law**. Consequently, we need your help in completing this survey. All information is confidential, according to the contractual terms of your incentive program agreement.

We recognize that it may be time consuming and, perhaps, inconvenient, but please know that the information you provide will help us to develop and maintain R&D programs that are useful and effective for Maine's overall economic development goals. Thank you for taking the time to complete this survey.

Best Regards,
John Endicott
Maine Department of Economic and Community Development
(207) 624-9804
John.Endicott@maine.gov

1. Name of Institution	2. Please provide the total space of your R&D facilities in 2015 in square feet.	3. What was the current, depreciated value (also known as book value) of your R&D facilities in 2015? For example, "$250,000" should be entered as "250000".
a) *Open Text Response Box*	a) *Open Text Response Box*	a) *Open Text Response Box*

4. What was the total amount of your fixed assets on your organization's balance sheet in 2015? For example, "$250,000" should be entered as "250000".	5. Please provide the total amount of major (purchase price >$50,000) research equipment purchased in 2015. For example, "250,000" should be entered as "250000".	6. Please provide information on science and engineering undergraduate students at your institution in Fall semester 2015.
a) *Open Text Response Box*	a) Total Amount: (Text Box) b) Amount Purchased in State of Maine: (Text Box)	a) Total science and engineering undergraduate majors enrolled: (Text Box) b) Total science and engineering undergraduate degrees conferred: (Text Box)

7. Please provide information on science and engineering graduate students at your institution in Fall semester 2015.	8. Please provide information on science and engineering PHD candidates at your institution in Fall semester 2015.	9. How many science and engineering students came from outside of Maine during Fall semester 2015?
a) Total science and engineering graduate students enrolled: (Text Box)	a) Total science and engineering PHD candidates enrolled: (Text Box)	a) Total out-of-state undergraduate students: (Text Box)
b) Total science and engineering graduate degrees conferred: (Text Box)	b) Total science and engineering PHDs conferred: (Text Box)	b) Total out-of-state graduate students: (Text Box) C) Total out-of-state PHD Candidates: (Text Box)

10. How many science and engineering students came from out of country during Fall semester 2015?	11. Please provide the total number of faculty staff in 2015.	12. Please provide the total number of professional staff in 2015.
a) Total out-of-country undergraduate students: (Text Box) b) Total out-of-country graduate students: (Text Box)	a) Temporary staff (0-16 hours per week): (Text Box) b) Part time staff (16-32 hours per week): (Text Box)	a) Temporary staff (0-16 hours per week): (Text Box) b) Part time staff (16-32 hours per week): (Text Box)
c) Total out-of-country PHD candidates: (Text Box)	c) Full time staff (32-40 hours per week): (Text Box)	c) Full time staff (32-40 hours per week): (Text Box)

13. Please provide the total number of classified personnel (e.g. technicians, clerical) in 2015.	14. How many personnel (full-time, part-time, & temporary) came from outside of Maine?	15. How many personnel (full-time, part-time, & temporary) came from out of country?
a) Temporary staff (0-16 hours per week): (Text Box)	a) Number of out-of-state faculty: (Text Box)	a) Number of out-of-country faculty: (Text Box)
b) Part time staff (16-32 hours per week): (Text Box)	b) Number of out-of-state professionals: (Text Box)	b) Number of out-of-country professionals: (Text Box)
c) Full time staff (32-40 hours per week): (Text Box)		

16. Please provide the total number of scientific peer-reviewed works published in 2015.	17. Please provide the total number of other scientific papers not published (e.g. research reports for industry) in 2015.	18. Please provide information on extramural research proposals in 2015.
a) Number of journal articles: (Text Box)	a) Number of papers not published: (Text Box)	a) Number of extramural research proposals: (Text Box) b) Dollar value requested: (Text Box) c) Dollar value actually materialized (face-value): (Text Box)
b) Number of book chapters: (Text Box) c) Number of books: (Text Box)		
d) Number of other scientific papers: (Text Box)		

19. Please provide information on research proposals submitted jointly with other Maine institutions only in 2015.	20. Please provide information on research proposals submitted jointly with non-Maine institutions only in 2015.	21. Please provide information on research proposals submitted jointly with both Maine and Non-Maine institutions in 2015.
a) Number of research proposals with other Maine institutions: (Text Box) b) Dollar value requested (face-value): (Text Box) c) Dollar value actually materialized (face-value): (Text Box)	a) Number of research proposals with non-Maine institutions: (Text Box) b) Dollar value requested (face-value): (Text Box) c) Dollar value actually materialized (face-value): (Text Box)	a) Number of joint research proposals: (Text Box) b) Dollar value requested (face-value): (Text Box) c) Dollar value actually materialized (face-value): (Text Box)

22. Please provide information on new Federal research grants, contracts, and subcontracts awarded in 2015.	23. Please provide information on research grants, contracts, and subcontracts awarded under Experimental Program to Stimulate Competitive Research (EPSCOR) in 2015.	24. Please provide the total number of these awards that were earmarked.
a) Number of Federal grants and contracts: (Text Box) b) Dollar value actually materialized (face value): (Text Box)	a) Number of grants and contracts awarded under EPSCOR: (Text Box) b) Dollar value actually materialized (face value): (Text Box)	a) Number of earmarked awards: (Text Box)

25. Please provide the total amount of Dollars (face value) actually materialized as a result of these grants and contracts in 2015.	26. Please provide the total expenditures for R&D in 2015.	27. Please provide a breakdown of the funds in USD for R&D expenditures by type of source in 2015.
a) Dollar value materialized: (Text Box)	a) Total expenditures: (Text Box)	a) Federal: (Text Box) b) State: (Text Box) c) Industry (Text Box) d) Individuals and Foundations (Text Box)
28. Please provide information on industrial research grants, contracts and subcontracts awarded in 2015.	29. Please provide information on industrial research grants, contracts and subcontracts awarded by Maine companies in 2015.	30. Please provide information on new foundation grants and individual gifts for research in 2015.
a) Number of industrial grants and contracts: (Text Box) b) Dollar value actually materialized (face value) (Text Box)	a) Number of industrial grants and contracts by Maine companies: (Text Box) b) Dollar value actually materialized (face value): (Text Box)	a) Number of foundation grants: (Text Box) b) Materialized dollar value of foundation grants: (Text Box) c) Number of individual gifts: (Text Box) d) Materialized dollar value of individual gifts: (Text Box)
31. Please indicate adherence to deadlines of projects benefiting from state incentives in 2015.	32. Please indicate adherence to milestones of projects benefitting from state incentives in 2015:	33. When undergoing capital investment projects, what percentage of Maine workforce, services, and products were used when economically reasonable to do so?
a) Number of deadlines on-time: (Text Box) b) Number of deadlines delayed: (Text Box)	a) Number of Milestones met: (Text Box) b) Number of Milestones unmet: (Text Box)	a) Percent Maine Labor: (Text Box) b) Percent Maine Services: (Text Box) c) Percent Maine Products: (Text Box)
34. Please provide information on Intellectual Property advancements made in 2015.	35. Please provide the total number of licensing agreements signed in 2015.	36. Please provide the total revenues as a result of intellectual property contracts in 2015.
a) Number of disclosures: (Text Box) b) Number of patents applied for: (Text Box) c) Number of patents awarded: (Text Box) d) Number of copyrights obtained: (Text Box) e) Number of plant breeder rights obtained: (Text Box)	a) Total number of license agreements: (Text Box) b) Total number of license agreements with Maine companies: (Text Box)	a) License fee revenues: (Text Box) b) Royalty revenues: (Text Box) c) Other revenues: (Text Box)
37. Please provide the total revenues that belong to the State as a result of its investment in Intellectual Property in 2015:	38. Please provide the total number of new spinoff companies formed in 2015.	39. Please provide the total number of jobs created in these companies at spinoff in 2015.
a) License fee revenues: (Text Box) b) Royalty revenues: (Text Box) c) Other revenues: (Text Box)	a) *Open Response Text Box*	a) *Open Response Text Box*
40. Please provide any additional information that you feel we may need to fully appreciate the contributions of your institution to economic development in Maine:	41. Name of Company	42. What year was the company established?
a) *Open Response Text Box*	a) *Open Response Text Box*	a) *Open Response Text Box*
43. Is your company still in business?	44. Is the product, process or service funded by MTI available on the market?	45. What was the total annual sales revenue your company generated for the last five calendar years? Enter whole

		numbers in USD without commas or dollar signs ($).
a) Yes b) No	a) Yes b) No	a) 2012: (Text Box) b) 2013: (Text Box) c) 2014: (Text Box) d) 2015: (Text Box) e) 2016: (Text Box)
46. How many current employees do you have in the State of Maine?	47. Please provide a breakdown of the total number of full-time employees for the last five calendar years. Enter "0" if you have no employees in that category.	48. Please provide a breakdown of the total number of part-time employees (less than 32 hours per week) for the last five calendar years. Enter "0" if you have no employees in that category.
a) *Open Response Text Box*	a) 2012: (Text Box) b) 2013: (Text Box) c) 2014: (Text Box) d) 2015: (Text Box) e) 2016: (Text Box)	a) 2012: (Text Box) b) 2013: (Text Box) c) 2014: (Text Box) d) 2015: (Text Box) e) 2016: (Text Box)
49. How many full-time employees do you expect to add in the next three (3) calendar years?	50. On a scale of 1 to 10, with one being no impact and ten being high impact, please rate the impact of your engagement with MTI on your employment growth. A higher rating indicates that your MTI award and related engagements had a higher positive impact on your business employment growth.	51. Who are the 5 people and/or organizations (mentors, service providers, etc.) you connect with the most for advice, support, connections, etc.?
a) *Open Response Text Box*	a) 1 (No Impact) b) 2 c) 3 d) 4 e) 5 (Some Impact) f) 6 g) 7 h) 8 i) 9 j) 10 (High Impact)	a) Example 1 (Text Box) b) Example 2 (Text Box) c) Example 3 (Text Box) d) Example 4 (Text Box) e) Example 5 (Text Box)
52. How many personnel (full-time, part-time, & temporary) came from outside of Maine?	53. How many students working in your facility came from outside of Maine?	54. Please provide the total number of new spinoff companies formed in between 2014 - 2016.
a) Out-of-State with BS: (Text Box) b) Out-of-Country with BS: (Text Box) c) Out-of-State with MS: (Text Box) d) Out-of-Country with MS: (Text Box) e) Out-of-State with PhD: (Text Box) f) Out-of-Country with PhD: (Text Box)	a) Out-of-State BS candidate: (Text Box) b) Out-of-Country BS candidate: (Text Box) c) Out-of-State MS candidate: (Text Box) d) Out-of-Country MS candidate: (Text Box) e) Out-of-State PhD candidate: (Text Box) f) Out-of-Country PhD candidate: (Text Box) g) Out-of-State Post Doctoral: (Text Box) h) Out-of-Country Post Doctoral: (Text Box)	a) 2014: (Text Box) b) 2015: (Text Box) c) 2016: (Text Box)
55. Please provide the total number of jobs created in these companies at spinoff between 2014 - 2016.		

a) 2014: (Text Box)

b) 2015: (Text Box)

c) 2016: (Text Box)

This concludes the survey. Thank you for your participation. /This concludes the survey. Thank you for your participation. We appreciate your time and the feedback about your experience with MTI. We'll be using this input to fulfill our legislative mandate and to make the organization stronger and more responsive in the coming year.

Please click "Done" to conclude the survey.

Appendix F – Survey Results

Survey Responsiveness

While much of the question content from the surveys closely mirrored those of previous reporting periods, some changes were made. A total of four surveys were sent to beneficiaries of State of Maine incentives programs. Three of these four surveys were aimed at recipients of R&D-related incentives.

- **Economic Development Survey** – sent to all beneficiaries of economic development incentives programs provided by DECD, FAME, MTI, and MRS[17]
- **Private R&D Survey** – sent to private entities receiving R&D incentives through MTI
- **Non-Profit R&D Survey** – sent to non-profit entities receiving R&D incentives through MTI
- **University R&D Survey** – sent to Universities receiving R&D incentives through MTI

Instead of using one general R&D survey, the decision was made to tailor several R&D surveys to the different types of program participants. This was done based on previous feedback that the general R&D survey in years past often asked irrelevant questions depending on the type of entity. For instance, a private entity would likely be focused on development and commercialization, while a non-profit research laboratory would be more focused on pure research and discovery.

The Economic Development Survey consisted of two parts: Part 1 included questions on the actual incentive benefits and company characteristics required for the CBAs; Part 2 included addition questions on characteristics of the beneficiaries and the quality of incentive support and services provided by the State of Maine (e.g. DECD, FAME, MRS, and MTI).

Survey sample characteristics

Survey	Number of Respondents	Completion Rate
Economic Development Survey	311	96%
Private R&D Survey	134	100%
Non-Profit R&D Survey	4	100%
University R&D Survey	2	100%

Source: Own calculations and survey

324 companies and organizations opened and started the Economic Development Survey. Out of these respondents, 311 (or 96%) completed the survey. During the last reporting period, only 209 out of 251 completed the Economic Development Survey (an 85% completion rate). This means that the survey

[17] MRS program beneficiaries could not be contacted directly since MRS does not keep records of individual companies participating in BETR/BETE, for instance. MRS program beneficiaries could only be captured if they were participants of other programs through DECD, FAME, or MTI.

reached 29% more participants (324 compared to 251) and received 48% more completed responses in absolute terms (311 compared to 209).[18]

It should be noted that completion rate is not the same as response rate. Completion rate measures the share of those that completed the survey against those that started the survey, while response rate measures those that completed the survey against the total sample size. ICA distributed the survey through the program administrators in order to bolster response rate. However, due to this process, the total sample size for the Economic Development Survey was unknown. DECD did disclose that the sample size of PTDZ recipients was 268. ICA received a total of 155 responses from PTDZ recipients, making a response rate of almost 58%.

According to the 2015 report, the response rate was for the entire survey (Parts 1 and 2) was 67%. If we were to assume that the PTDZ response rate applied to the entire sample size, this would suggest lower participation rates. Still, the survey was a success in absolute terms and in terms of completion rates.

Responses by Program

Response by Program	Number of Responses (2017)	Number of Responses (2015)
PTDZ Responses	158	128
PTDZ Only Responses	90	61
BETR Responses	37	67
BETR Only Responses	5	12
FAME CLI Responses	32	4
FAME CLI Only Responses	22	N/A
MTI DL Responses	24	2
MTI DL Only Responses	2	N/A

Source: ICA calculations and survey

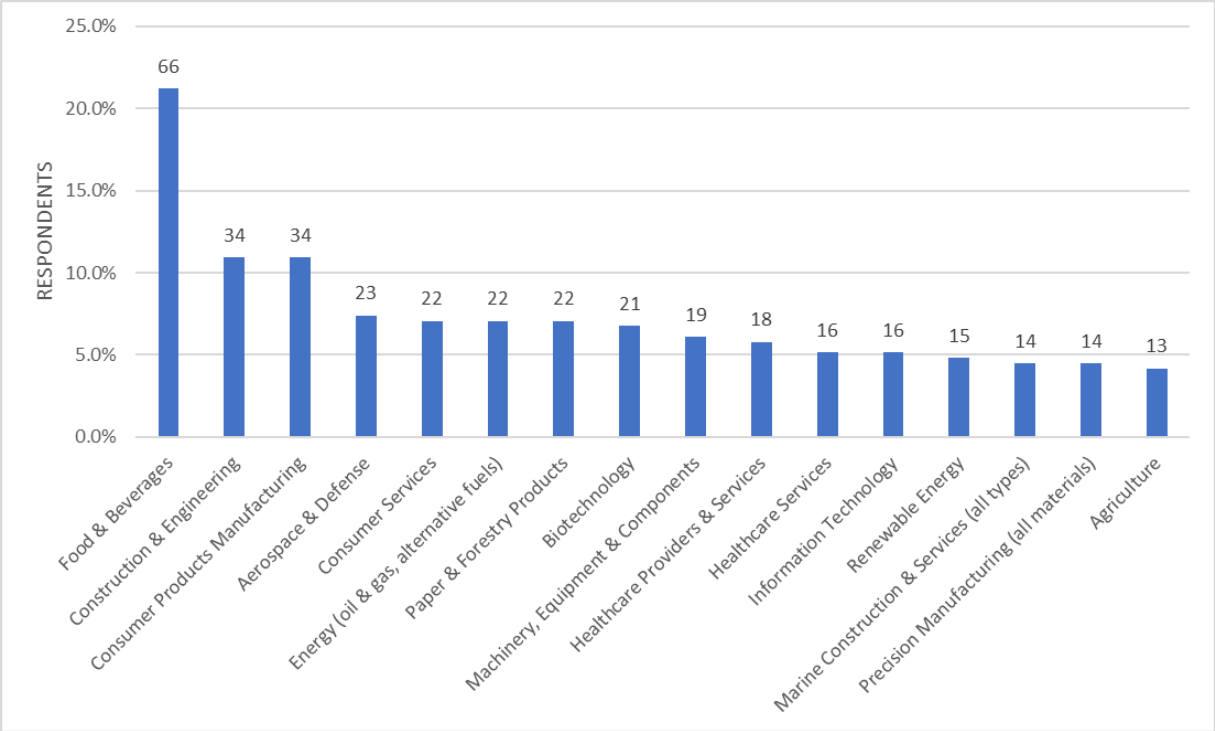
Although reaching less BETR program participants, the survey did receive significantly higher numbers of responses for PTDZ, FAME Commercial Loan Insurance, and MTI Development Loan program participants, which not only improves the relevancy of survey findings, but also improves the representativeness of the Cost Benefit Analysis models as well.

Economic Development Survey Findings

The largest group of respondents originates from the food & beverages industry (66 of the 311 or 14.7%), followed by the construction & engineering sector (34 or 10.9%), consumer products manufacturing (34 or 10.9%) and aerospace & defense (23 or 7.4%). Industries that represent between the 5.0% and 10.0% of the survey sample include consumer services, energy, paper & forestry products, biotechnology, machinery/equipment/components, healthcare providers, healthcare services, and information technology. It should be noted that the totals do not add up to 100% as recipients could identify as participating in up to three industries.

[18] The survey two years ago measured completion rate by Part 1 and Part 2. Part 1 had an 85% completion rate, while Part 2 had a 77% completion rate.

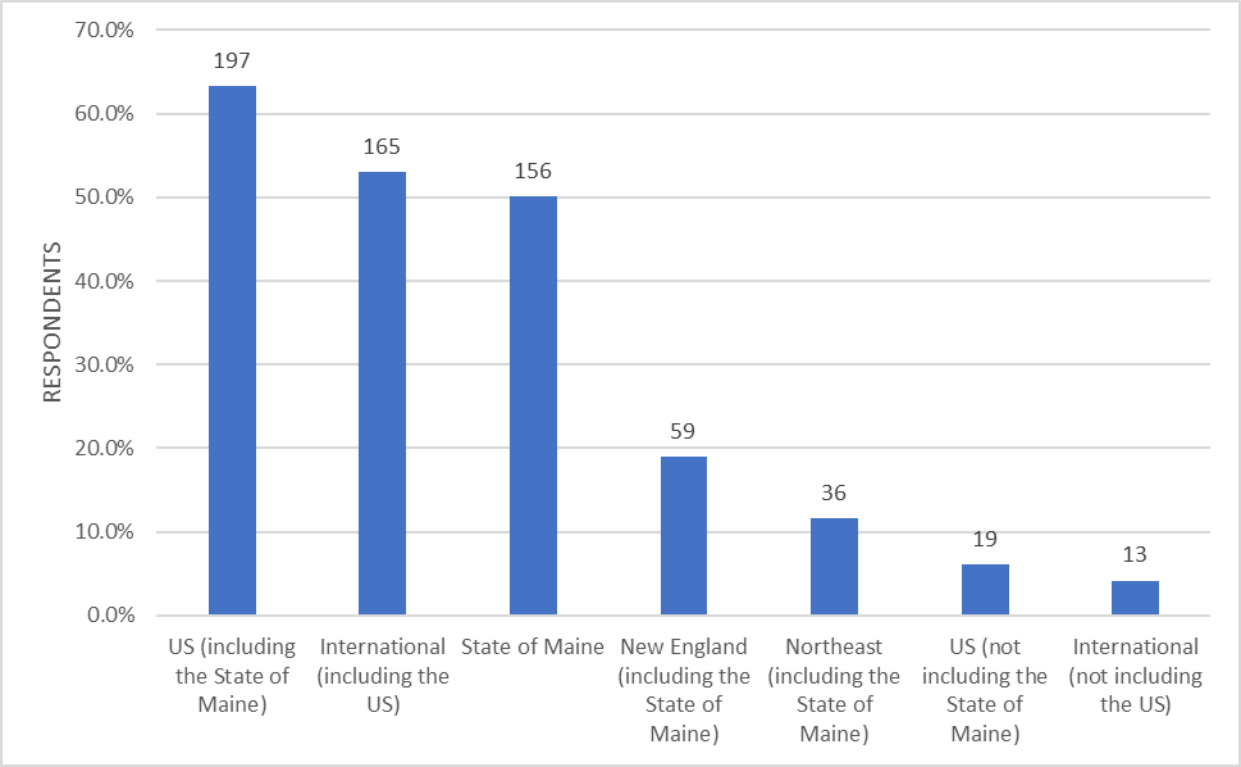
Largest industries of survey respondents



Source: ICA calculations and survey

The vast majority of the respondents operate within the entire US alone (197 of the 311 or 63.3%) or both internationally and within the US (165 of the 311 or 53.1%). Respondents exclusively operating in Maine represent a share of 50.2% (156 out of the 311), closely followed by respondents operating in New England and the Northeast (59 or 19.0% and 36 or 11.6%, respectively). Again, percentages will not necessarily add up to 100%.

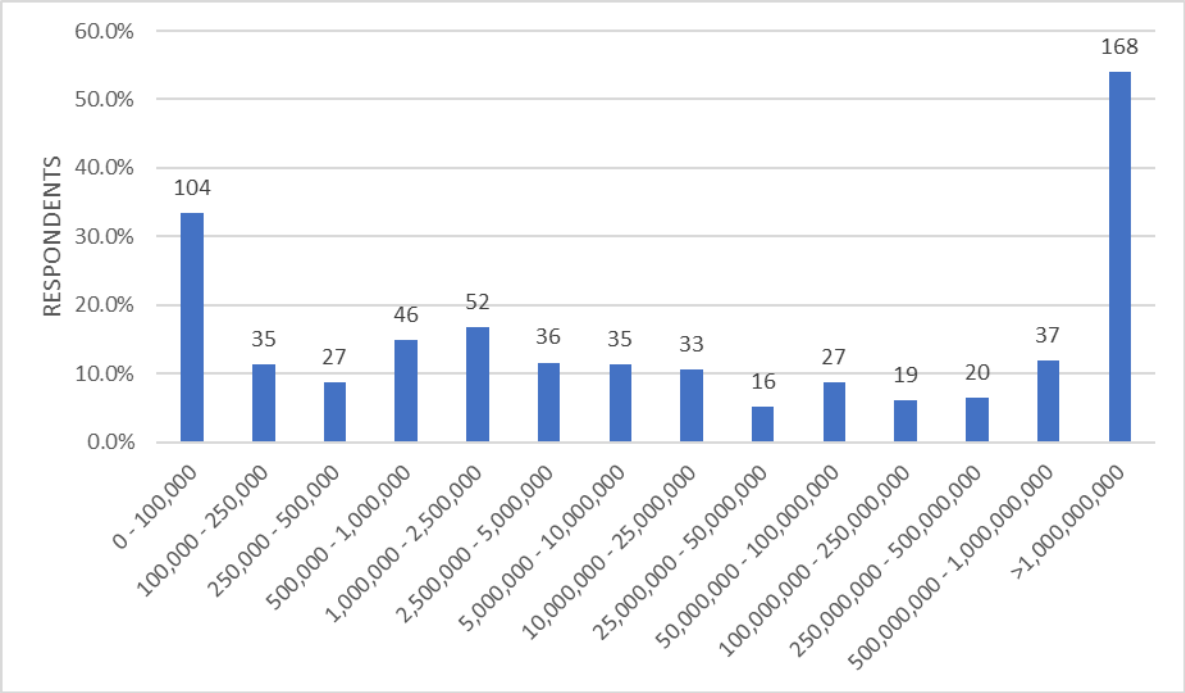
Largest geographical markets of survey respondents



Source: ICA calculations and survey

Most of the survey respondents operate in either very large marketplaces of over $1.0 billion (168 out of the 311 or 54.0%), in small markets of between $1.0 million and $2.5 million (52 out of the 311 or 16.7%) or in very small markets of less than $100,000 (104 out of the 311 or 33.4%).

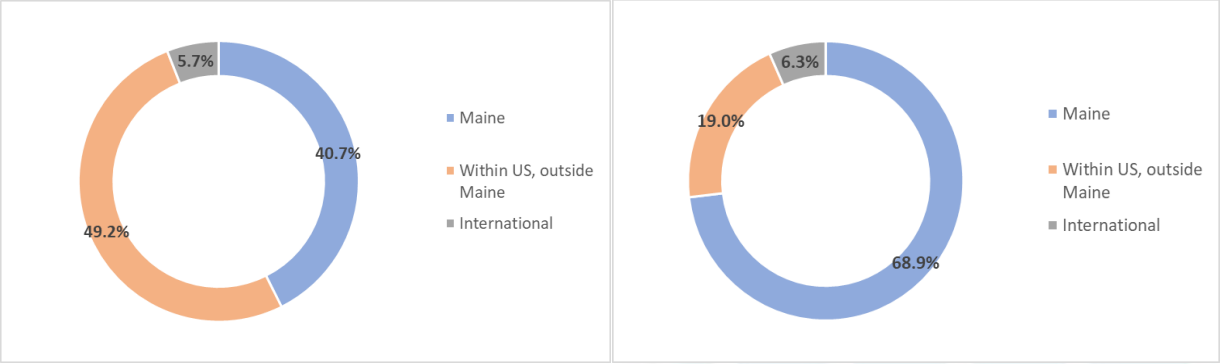
Size of markets of survey respondents



Source: ICA calculations and survey

The domestic US orientation of a great number of survey respondents is also reflected by the geographical distribution of respondents' sales. Roughly half (49.2%) of the sales of the survey respondents is located within the US (excluding Maine) while 40.7% of the sales is located in Maine. In terms of shareholders, the vast majority resides within Maine (68.9%) and the rest reside in other US locations (19.0%). The international portion of sales and shareholders is relatively minor, representing only 5.7% and 6.3% of the total survey sample, respectively.

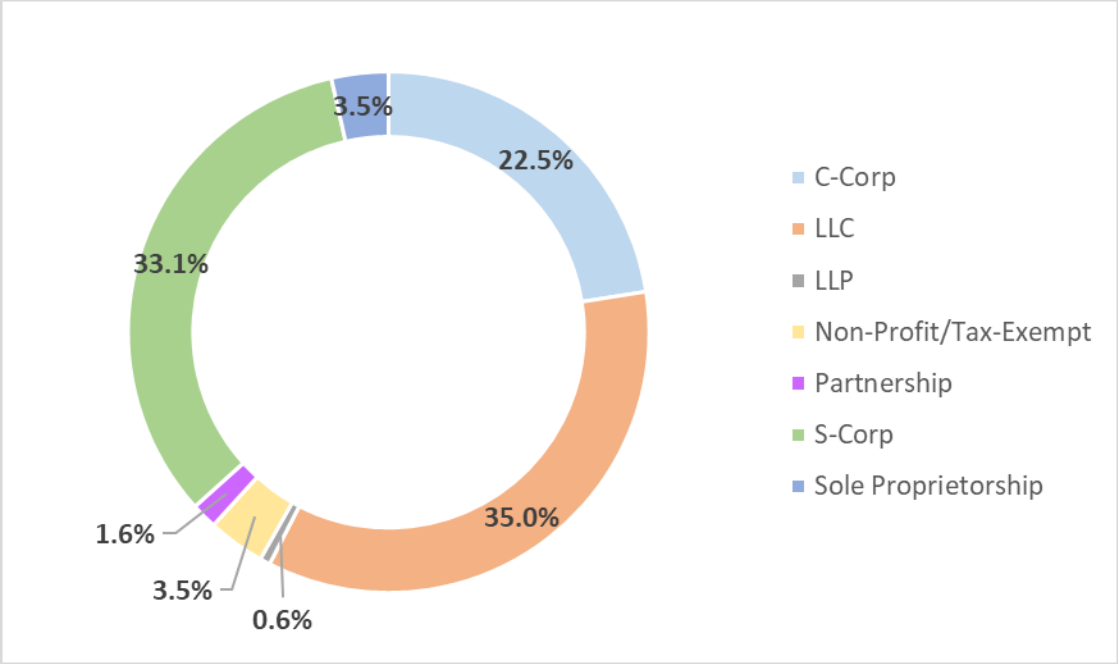
Geographical distribution of sales (left) and shareholders (right) of survey respondents



Source: ICA calculations and survey

The survey also included a question regarding the corporate tax structure of the respondent company, unlike the surveys in previous rounds. Only 22.5% are eligible for state corporate income tax since they are structured as C-Corporations. The remaining respondents are structured to pass the tax liability on

to the personal income level, with 35.0% structured as Limited Liability Companies (LLCs) and 33.1% structured as S-Corporations.



Tax structure of survey respondents
Source: ICA calculations and survey

Out of the 311 survey respondents, 263 companies (or 84.57%) were founded in Maine, as opposed to 41 (or 13.18%) respondents whose business had not been founded within the state.

Number of Maine-founded businesses among survey respondents

Maine-founded Businesses	No. of Answers	Relative
No	41	13.18%
Yes	263	84.57%
Unanswered	7	2.25%
Total	311	

Source: ICA calculations and survey

Most survey respondents operate their businesses with one location in Maine rather than multiple locations. A total of 235 (or 75.56%) respondents had just one business location overall as contrasted with 35 (or 11.25%) with two locations, fifteen (or 4.82%) with three locations and seventeen (or 5.47%) operating four or more locations.

Number of business locations among survey respondents

Number of business locations	No. of Answers	Relative
1	235	75.56%

Number of business locations	No. of Answers	Relative
2	35	11.25%
3	15	4.82%
4	2	0.64%
5	6	1.93%
>5	9	2.89%
Unanswered	9	2.89%
Total	311	

Source: ICA calculations and survey

In order to understand the nature of the incentive beneficiaries, respondents were asked about the current business stage of their company. The majority of companies are in growth stage (131 respondents or 42.12%) or mature stage (82 respondents or 26.37%), followed - by a distance – by the mid stage (47 respondents or 15.11%) and early stage (27 respondents or 8.68%). Very few respondents were in a very early stage in which they evaluate potential ideas and concepts (14 respondents or 4.50%).

Company stage of survey respondents

Company Stage	No. of Answers	Relative
Very early stage (idea and/or concept evaluation)	14	4.50%
Early stage (R&D and/or alpha/beta testing)	27	8.68%
Mid stage (product development and release)	47	15.11%
Growth stage (established product line with sales growth and diversification)	131	42.12%
Mature stage (multiple product lines, consistently growing sales and markets)	82	26.37%
Unanswered	10	3.22%
Total	311	

Source: ICA calculations and survey

Survey respondents have good future expectations, based on the expansion intensions of the survey. Roughly 51% of respondents expect to invest in expansion in Maine within the next three years (160 respondents of 311) while 91 (or 29.26%) respondents are seriously considering expansion. Fifty-one (or 16.40%) respondents indicated having no expansion plans for Maine in the next three years.

Investment expansion in Maine in the next three years

Expanding in Maine in the next three years?	No. of Answers	Relative
Maybe	91	29.26%
No	51	16.40%
Yes	160	51.45%
Unanswered	9	2.89%
Total	311	

Source: ICA calculations and survey

Respondents were also asked about their experience in working with the economic development and R&D programs provided by the State of Maine, and whether they would recommend Maine's incentive programs. Each respondent was asked to rate six different elements of the quality of Maine's incentive programs from 1 (which is extremely poor), to 10 (excellent).

Experience with the incentive programs provided by the State of Maine

Experience with State of Maine	Rate
Efficiency of process	6.78
Knowledge of staff	7.79
Reporting requirements	6.42
Supporting services	7.24
Responsiveness	7.86
Likelihood to recommend	7.98

Source: ICA calculations and survey

Respondents tended to appreciate both the responsiveness and knowledge of staff. These elements rated at 7.86 and 7.79, respectively. The supporting services element rated at 7.24, while efficiency of the process was rated at 6.79. The weakest element of Maine's incentive program is the reporting requirements, which follows with a rate of 6.42.[19]

Overall, the likelihood of respondents recommending Maine's incentive programs is modestly, given the average rate of 7.98. Respondents also gave the incentives programs a rate of 7 out of 10 for their importance in helping their companies realize growth plans.

In addition to the experience with the State of Maine, respondents were asked to rate their own accomplishments within Maine. Respondents indicated they have been most successful within Maine at providing service (7.28), developing products (7.14), developing supplier relationships (7.11), and building partnerships (7.09). Raising capital (5.95) and expanding markets (5.98) seems to be more difficult to achieve within Maine.

Accomplishments in the State of Maine

Accomplishments in the State of Maine	Rate
Developing products	7.14
Bringing products to market	6.7
Growing sales revenue	6.23
Manufacturing	6.26
Providing service	7.28
Building partnerships	7.09
Developing supplier relationships	7.11
Building staff	6.16
Raising capital	5.95
Expanding markets	5.98

Source: ICA calculations and survey

In terms of major business concerns that the respondents cope with, finding the right employees is the foremost concern for businesses, and one that is critical for future success. A total of 179 (or 57.56%) respondents indicated this as a concern which may seriously limit their growth. In addition, access to capital is also a major concern for these businesses' ability to position themselves for future growth (121 or 38.91%). Furthermore, respondents indicate roughly the same level of concern for out of state competition (82 or 26.37%) and managing growth of expenses (78 or 25.08%). More than 109 respondents (35.05%) highlighted any "other" business concern not mentioned in the survey.

These findings reiterate the findings in the previous table, where respondents indicated that raising capital (i.e. access to capital) and expanding markets (i.e. access to customer markets) are difficult to

[19] Given the close association with the question and the survey process itself, it is likely that the survey process influenced this answer.

accomplish in Maine. Maine could further tailor its future incentive programs to address some of these concerns as well as other precarious business concerns (i.e. finding the right employees, out of state competition and access to capital). Since these same concerns were indicated in the previous survey of two years ago, these issues clearly have longevity and continued relevance for Maine businesses.

Major business concerns in the State of Maine

Business Concern	No. of Responses	Relative
Finding the right employees	179	57.56%
Out of State Competition	82	26.37%
Finances - access to capital	121	38.91%
Other	109	35.05%
Finances - managing expense growth	78	25.08%
Government regulation	56	18.01%
Employee turnover	50	16.08%
Price increases	49	15.76%
Slow product development	59	18.97%
Technology obsolescence	24	7.72%
Collective Bargaining/Labor Unions	4	1.29%
In State Competition	22	7.07%

Source: ICA calculations and survey

Like the previous round of survey analysis, the total sample of the survey has been classified into two groups based on the type of incentive programs from which respondents have benefited. Respondents that enjoyed the exclusive benefits of one or more MTI incentive program in 2014 (i.e. the "base year") have been classified under the "R&D" sample. Respondents that benefited from other incentive programs in 2014 have been grouped under the "Economic Development" ("EconDev") sample (e.g. PTDZ and BETR recipients). The former reflects actual R&D investment program recipients whilst the latter rather reflects Economic Development incentive program beneficiaries.

Respondents benefiting from a combination of MTI and non-MTI incentive programs have been categorized under the "EconDev" sample. Such respondents usually involve PTDZ recipients, which received considerable amounts of PTDZ incentives rather than the typically smaller sized MTI incentive benefits. Distinguishing between these two groups of incentive recipients results in the sample distribution as summarized in the table below.

Survey sample characteristics – per cluster group[20]

Total Sample Size	Completed Survey
EconDev	215
R&D exclusive	96
Total	311

Source: ICA calculations and survey

Out of the 311 respondents who completed the survey, 215 enjoyed economic development (and R&D, in some cases) programs, while 96 respondents were exclusive beneficiaries of MTI R&D incentives.

The tables below provide summaries for both the Economic Development respondents as well as the R&D respondents for which programs are being used. For 2016, the majority either utilized the PTDZ program (133 or 43.89%) together with the BETR program (35 or 11.55%) and Commercial Loan Insurance program (26 or 8.58%).

Programs registered by MTI are also listed under the Economic Development respondents as these enjoy at least one Economic Development investment program (i.e. not registered by MTI) together with an MTI incentive program. Again, respondents that only applied for MTI programs are included in the R&D sample. It would appear however that a very limited number of the Economic Development respondents combine both investment programs along with MTI's incentive programs (e.g. Development Loans, Seed Grant Program, and Business Accelerator Grant Program).

Economic Development respondents per type of program (2016)

Type of Program	Total	Share
Pine Tree Development Zones (DECD/MRS)	133	43.89%
Business Equipment Tax Reimbursement/Exemption (MRS)	35	11.55%
Commercial Loan Insurance Program (FAME)	26	8.58%
Maine Manufacturing Extension Partnership (DECD)	12	3.96%
Sales Tax Exemptions - non PTDZ (MRS)	12	3.96%
Maine Seed Capital Investment Tax Credit (FAME)	8	2.64%
Economic Recovery Loan Program (FAME)	7	2.31%
Maine Quality Centers In-Kind Training	7	2.31%
Maine Made – Maine Products Marketing Program (DECD)	6	1.98%
Municipal Tax Increment Financing (DECD)	6	1.98%
Business Accelerator Grant Program (MTI)	5	1.65%
Seed Grant Program (MTI)	5	1.65%
Brunswick NAS Job Tax Increment Financing (DECD)	4	1.32%
Maine Venture Fund (DECD)	4	1.32%
Development Loans (MTI)	4	1.32%
Certified Media Production Tax Credit (DECD)	3	0.99%

[20] This table includes self reported data extracted from the survey results.

Type of Program	Total	Share
Maine Small Business Development Centers (DECD)	3	0.99%
Research Expense Tax Credit (MRS)	3	0.99%
Maine Technology Asset Fund MTI)	3	0.99%
TechStart Program (MTI)	3	0.99%
Oil Storage Facility and Tank Replacement Program (FAME)	2	0.66%
Maine Economic Development Venture Capital Revolving Investment Program (FAME)	2	0.66%
Regional Economic Development Revolving Loan Fund (FAME)	2	0.66%
Equity Capital Fund (MTI)	2	0.66%
Agricultural Marketing Loan Fund (FAME)	1	0.33%
Revenue Obligations Securities Program (FAME)	1	0.33%
Shipbuilding Facility Credit (MRS)	1	0.33%
Cluster Initiative Program (MTI)	1	0.33%
Phase 0 and Phase II SBIR Application Awards plus TAP Support (MTI)	1	0.33%
Commercial Facilities Development Program (RDA)	1	0.33%

Source: ICA calculations and survey

The majority of R&D respondents utilize the Seed Grant Program (22 or 39.29%), TechStart Program (11 or 19.64%), Development Loans (6 or 10.71%), or the Cluster Initiative Program (6 or 10.71%). These are the respondents that have exclusively registered for MTI incentive programs.

R&D respondents per type of program (2016)

Type of Program	Total	Share
Seed Grant Program	22	39.29%
TechStart Program	11	19.64%
Development Loans	6	10.71%
Cluster Initiative Program	6	10.71%
Phase 0 and Phase II SBIR Application awards plus TAP support	4	7.14%
Business Accelerator Grant Program	3	5.36%
Maine Technology Asset Fund	3	5.36%
Marine Jobs Bond	1	1.79%

Source: ICA calculations and survey

Comparing the total and average amount of awards, it seems that a total of $123.1 million has been awarded over the last three years (i.e. 2014 to 2016) to Economic Development respondents. This results in an average award of $191,127 per respondent per year. On the other hand, a total of $6.3 million has been awarded to the R&D respondents during the same period, resulting in an average of $35,373 per respondent per year. According to these statistics, R&D respondents receive much less incentives per deal than those of Economic Development beneficiaries.

Total and average amount of incentives per respondent group (2014-2016)

	EconDev	R&D
Total amount of incentives	$123,085,955	$6,331,726
Average amount of incentives	$191,127	$35,373

Source: ICA calculations and survey

Before examining the benefits created by these programs, a quick glance at the employment statistics suggests that currently Economic Development respondents employ a total of 37, 122 Maine employees, of which just over 31,500 are full-time employees and the remaining 5,524 jobs are part-time jobs. R&D respondents employ just 327 Maine workers full-time and 207 part-time.

On average, companies in the Economic Development sample employ 152 full-time employees and 28 part-time employees as contrasted with 9 and 3 for the R&D respondents, respectively. Thus, companies benefiting from MTI's R&D programs are considerably smaller than companies enjoying the advantages of investment programs such as PTDZ and BETR, which would explain the smaller incentive benefit profile. When considering incentives per FTE capita, R&D beneficiaries receive more incentive dollars per employee.

Total and average full-time and part-time jobs per respondent group

	EconDev	R&D
Total Full-Time Jobs	31,598	327
Average Full-Time Jobs	152	9
Part-Time Jobs	5,524	207
Average Part-Time Jobs	28	3
Total Jobs	37,122	534

Source: ICA calculations and survey

The fact that R&D beneficiaries are typically smaller-sized companies than Economic Development companies is also reflected in terms of the average salaries. The average salaries for Economic Development respondents - $65,580 – is considerably larger than the average salary of R&D respondents, which equals $56,063. Technical employees have average lower salaries within the R&D respondent group as compared to the Economic Development sample ($70,196 against $74,924, respectively). This may be linked with the fact that larger companies can pay higher wages, however, surprisingly manufacturing and operations employees in the R&D sample earned more than those in the Economic Development sample. On the other hand, those in finance, marketing & sales, and administration consistently earn more in the Economic Development sample compared to the R&D sample.

Average salaries per job function per respondent group

Job Function	EconDev	R&D
Manufacturing & Operations	$42,944	$43,722
Technical (engineers, researchers, scientists, etc.)	$74,924	$70,196
Finance	$67,273	$51,314
Marketing & Sales	$72,329	$44,851
Administrative & Executive	$91,887	$85,969
Other	$44,123	$40,323
Overall Average	***$65,580***	***$56,063***

Source: ICA calculations and survey

The next series of tables show the number of companies that created specific benefits per year (i.e. 2014, 2015 and 2016) per respondent group (i.e. Economic Development and R&D) as a result of Maine's programs.

Job Creation

Much like the findings of the survey two years prior, the majority of both the Economic Development and R&D beneficiaries have created either no new jobs or between one and ten new jobs. In addition, 11 to 24 companies within the Economic Development group created between 11 and 25 new jobs during the 2014-2016 time period, while 18 respondent companies created between 26 and 50 new jobs in during the same time frame. While R&D beneficiaries typically created less jobs, one company created between 51 and 100 new jobs in 2016.

Incentive benefits: new jobs created per respondent group (2014-2016)

New Jobs	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
501-1,000	1	1	0	0	0	0
251 - 500	2	3	4	0	0	0
101 - 250	5	6	6	0	0	0
51 - 100	1	2	4	0	0	1
26 - 50	7	5	6	0	0	0
11 - 25	11	16	24	0	1	0
1 - 10	65	72	69	6	10	14
0	117	104	97	50	47	41

Source: ICA calculations and survey

Job Retention

While incentive programs support the creation of new jobs, they can also support maintaining existing jobs. A similar picture as with the newly created jobs is noticeable, where the focus for both respondent groups is mainly on zero retained jobs or between one and ten retained jobs. This is particularly the case for the R&D beneficiaries, which could be explained in part by the typically smaller size of R&D respondents with which to begin. The Economic Development beneficiaries also indicate a sharp drop-off of job retention between the 101-250 job tier and 251-500 job tier.

Incentive benefits: jobs retained per respondent group (2014-2016)

Retained Jobs	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
More than 1,000	0	2	2	0	0	0
501 – 1,000	2	3	4	0	0	0
251 - 500	4	4	3	0	0	0
101 - 250	15	16	16	0	0	0
51 - 100	9	10	13	0	0	0
26 - 50	12	13	12	1	1	0
11 - 25	15	24	28	0	1	2
1 - 10	53	56	58	15	19	21
0	95	78	73	39	35	32

Source: ICA calculations and survey

Capital Investment

Most beneficiaries – both for Economic Development and R&D – indicated that they have invested an additional amount of less than $50.000 as a result of the investment and incentive programs. Not a single R&D beneficiary increased its capital investment by more than $500,000. Economic Development beneficiaries demonstrate a wide mix of capital investment levels. Surprisingly, more Economic Development beneficiary companies increased their capital investment between $500,000 and $1 million than the lower tier of $250,000 to $500,000. Higher level investment begins to taper off considerable when reaching the $25-50 million investment tier.

Incentive benefits: additional capital investment per respondent group (2014-2016)

Capital Investment (USD)	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
>100 million	1	1	0	0	0	0
50 - 100 million	1	0	0	0	0	0
25 - 50 million	1	0	1	0	0	0
10 - 25 million	4	4	4	0	0	0
5 - 10 million	1	2	8	0	0	0
2 - 5 million	4	5	2	0	0	0
1 - 2 million	4	3	8	0	0	0
0.5 - 1 million	5	11	14	0	0	0
250,000 – 500,000	7	5	7	2	2	2
100,000 – 250,000	7	15	13	1	1	0
50,000 – 100,000	19	18	13	0	1	5
< 50,000	152	140	137	50	51	48

Source: Own calculations and survey

Exports

The figures indicate that Maine's Economic Development and R&D programs do not stimulate exports as much as job creation, job retention, and capital investment. The vast majority of beneficiaries – for both programs – indicated to have generated less than $50,000 of additional exports. In fact, not a single R&D beneficiary indicated increasing exports by greater than $50,0000. Still, a handful of Economic Development beneficiaries indicated that the program did allow them to export more, sometimes considerably so.

Incentive benefits: additional exports per respondent group (2014-2016)

Exports (USD)	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
>100 million	0	1	0	0	0	0
50 - 100 million	1	0	0	0	0	0
25 - 50 million	0	0	0	0	0	0
10 - 25 million	2	3	3	0	0	0
2 - 5 million	2	2	4	0	0	0
1 - 2 million	1	1	2	0	0	0
0.5 - 1 million	4	3	2	0	0	0
250,000 – 500,000	3	2	3	0	0	0
100,000 – 250,000	1	2	4	0	0	0
50,000 – 100,000	4	8	6	0	0	0
< 50,000	186	182	182	53	55	55

Source: ICA calculations and survey

Payroll

The distribution of the additional payroll more or less reflects the distribution for newly created jobs with a handful of Economic Development respondents indicating to have generated substantial additional benefits (i.e. $10.0-$25.0 million, $5.0-$10.0 million and $1.0-$2.0 million). The majority of beneficiaries has created very limited additional benefits (i.e. between $0 and $50,000) for both Economic Development and R&D categories. However, unlike the R&D subset, the Economic Development group did have several companies report adding between $50,000 and $1 million in payroll benefits. This drops off sharply at the $1 million mark. Given that R&D beneficiary respondents tended to be smaller and typically added fewer jobs, a smaller amount of additional payroll is expected.

Incentive benefits: additional payroll per respondent group (2014-2016)

Payroll (USD)	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
10 - 25 million	1	1	1	0	0	0
5 - 10 million	1	1	1	0	0	0
2 - 5 million	0	0	0	0	0	0
1 - 2 million	1	2	2	0	0	0

Payroll (USD)	EconDev			R&D		
0.5 - 1 million	5	5	7	0	0	0
250,000 – 500,000	11	7	4	0	0	0
100,000 – 250,000	0	10	13	0	0	0
50,000 – 100,000	9	13	19	1	1	0
< 50,000	179	167	162	52	54	55

Source: ICA calculations and survey

Training and Certifications

Unlike previous rounds of surveys, this survey also attempted to capture the impact that incentives have had on training and certification acquirement. While the largest amount of companies reported training zero additional employees (for both Economic Development and R&D beneficiaries), a sizeable amount of Economic Development beneficiaries indicated training between 1 and 10 additional employees. The number of companies indicating additional training gradually tapers off by tier, with no companies training over 1,000 additional employees.

Incentive benefits: additional employees trained per respondent group (2014-2016)

Employees Trained	EconDev			R&D		
	2014	**2015**	**2016**	**2014**	**2015**	**2016**
More than 1,000	0	0	0	0	0	0
501 – 1,000	1	1	0	0	0	0
251 - 500	2	2	4	0	0	0
101 - 250	2	3	4	0	0	0
51 - 100	3	6	4	0	0	0
26 - 50	9	7	12	0	1	1
11 - 25	10	14	18	1	1	0
1 - 10	62	71	73	2	9	16
0	116	100	91	51	44	39

Source: ICA calculations and survey

The intensity of training, measured in additional hours of training, demonstrates a more equitable distribution for Economic Development beneficiaries. While the majority of companies report no increase in training hours, roughly the same amount of companies reports additional training hours across multiple tiers (1-10 hours, 11-25 hours, 26-50 hours, 51-100 hours, and 101-250 hours). Surprisingly, more companies added over 1,000 hours of training than those that provided between 501 to 1,000 hours or 251 to 500 hours of training. R&D beneficiaries did not increase hours of training in a notable way, though of companies that did provide additional training, the largest tier was between the 51 to 100-hour range.

Incentive benefits: additional hours trained per respondent group (2014-2016)

Hours Trained	EconDev	R&D

Hours Trained	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
More than 1,000	8	10	13	0	0	0
501 – 1,000	5	7	6	0	0	0
251 - 500	5	4	6	0	0	1
101 - 250	7	14	22	0	0	1
51 - 100	17	20	18	1	5	5
26 - 50	14	14	14	0	2	1
11 - 25	16	16	16	1	2	1
1 - 10	15	16	18	0	1	4
0	116	102	91	52	45	42

Source: ICA calculations and survey

While most companies across both the R&D and Economic Development subsets did not achieve additional certifications through incentives benefits, some companies reported adding 1 to 10 certifications. R&D beneficiaries seemed to utilize incentives to achieve certifications to a much lesser degree than Economic Development beneficiaries.

Incentive benefits: additional certifications per respondent group (2014-2016)

Certifications	EconDev			R&D		
	2014	2015	2016	2014	2015	2016
More than 1,000	0	0	0	0	0	0
501 – 1,000	0	0	0	0	0	0
251 - 500	0	0	1	0	0	0
101 - 250	1	2	0	0	0	0
51 - 100	0	2	4	0	0	0
26 - 50	3	2	2	0	0	0
11 - 25	3	4	3	0	1	0
1 - 10	30	41	40	1	2	2
0	166	150	154	53	52	53

Source: ICA calculations and survey

R&D Survey Findings

Three separate R&D surveys were distributed to relevant participants: private companies receiving R&D benefits, non-profit R&D institutions, and academic institutions involved in R&D (universities). Separate surveys were created based on the recommendation of the R&D subcommittee, which noted that in previous years the general economic development survey and the all-encompassing R&D survey asked questions that were often irrelevant. Indeed, the R&D activity of non-profits, universities, and private companies differ considerably, warranting more individualized questioning.

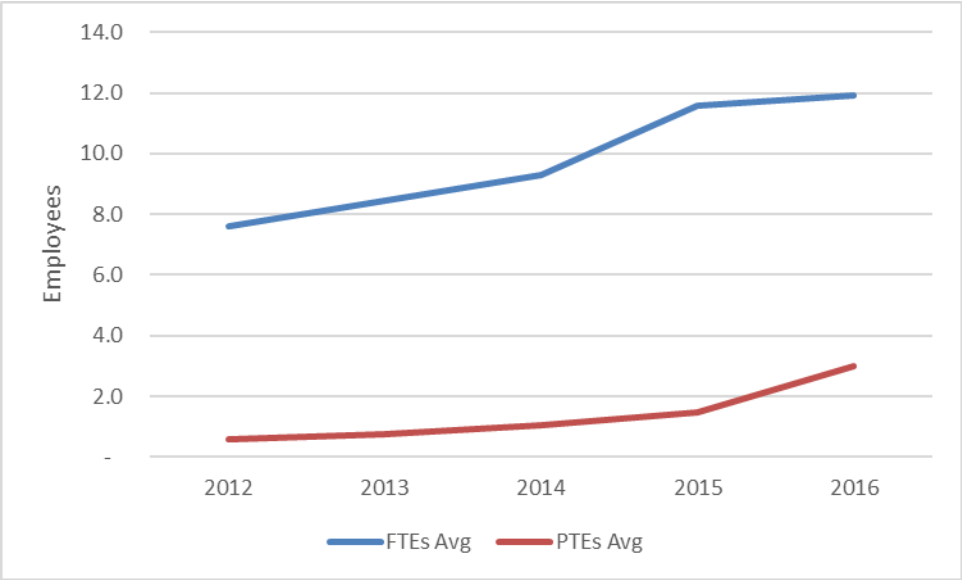
Private R&D Survey

A total of 134 companies responded to the private R&D survey, of which 7 are currently not in business. As many as 58 companies acknowledged that the MTI funding helps develop a product, process, or service not currently available on the market. The remaining 76 MTI beneficiaries have products, processes, or services that are available on the market. The respondents have earned nearly $5 million in annual sales revenue during the past 5 years, on average. In general, respondents rated MTI a 6.1 out of 10 (10 being high) in terms of the level of the organization's impact on employment growth.

Employment

The respondents employ 1,736 individuals, averaging just over 13 people in size. During the 2014-2016 period, these respondents steadily grew in size, from 7.6 full-time employees in 2012 to 11.9 full-time employees in 2016. They also added more part-time workers as well.

Average Employment Growth – Private R&D Respondents



Source: ICA calculations and survey

The respondents expect to add over 1,300 jobs within the next 3 years, averaging about ten new employees per respondent. This indicates that private recipients of R&D benefits are ambitious when it comes to growth plans.

Research Funding & Expenditures

Private R&D respondents demonstrate low engagement with the Federal government when it comes to applying for grants, contracts, and subcontracts. In fact, just over one in five respondents received Federal awards in 2015, a total of 27 awards valued at $8.2 million. That said, respondents indicated that Federal funding accounts for 23.4% of R&D expenditures, behind the 43.9% funded by the companies themselves. Another 12.9% is funded by the State of Maine, followed by individuals & foundations, bank loans, and venture capital, respectively.

2015 Funding for R&D Expenditures by Source – Private R&D Respondents

Source	Share of Funding
Company-Funded	43.9%
Federal	23.4%
State	12.9%
Individuals & Foundations	6.4%
Bank Loans	5.0%
Venture Capital	4.8%
Other	3.6%

Source: ICA calculations and survey

In all, respondents spent roughly $18.8 million on R&D in 2015, averaging $150,000 per respondent. When undergoing capital expenditure products, respondents tend to use Maine labor and services just over 60% of the time. About 38% of Maine products are used when economically reasonable to do so.

Intellectual Property

In terms of MTI program benefits helping the advancement of Intellectual Property for companies, it is not very impactful. Among the 134 respondents, only 45 patents were applied for, with 17 awarded. Respondents obtained another 23 copyrights. However, some respondents were quite active in signing licensing agreements. A total of 537 licensing agreements were signed in 2015, 501 of which belonging to two respondents. Of these licensing agreements, only 45 were made with other Maine companies.

Non-Profit R&D Survey

Only four non-profit entities responded to the non-profit R&D survey, making the sample too small to make any definitive conclusions based on data. Because of the small sample size, one of the larger respondents tends to skew the data. Still, it could be useful to examine the results of the survey. To limit the survey burden, respondents were asked to provide information on activity related to 2015, rather than the full 2014-2016 period.

The non-profit respondents account for a total of 1.44 million square feet of R&D facility space holding a depreciated value of over $370 million as of 2015. Only two of the four respondents indicated making major purchases of research equipment during that year, totaling almost $12 million (of which 79.5% was purchased in the State of Maine).

The State of Maine is the most important source for funding R&D expenditures, accounting for 46% of funding. The Federal government accounts for 33% of funding, with individual gifts and foundations accounting for another 20%. Industry provides less than 1% of funding for non-profit R&D expenditures.

Employment

The respondents account for over 1,400 employees, of which 1,363 are full-time employees. However, 1,243 of these belong to one employer, meaning the other respondents are far smaller in size.

Non-Profit R&D Staff Count

Staff Type	Professional		Classified (Technicians, Clerical, etc.)	
	Total	Average	Total	Average
Temporary	17	4.3	26	6.5
Part-Time	9	2.3	24	6.0
Full-Time	760	190.0	603	150.8
TOTAL	**786**		**653**	

Source: ICA calculations and survey

These non-profit R&D organizations also have an important hand in the net import of talent from outside the state. A total of 502 employees (temporary, part-time, and full-time) of the 1,439 employed came from outside the state of Maine, accounting for almost 35% of the non-profit R&D workforce captured by the survey. Of these 502 employees that came from outside Maine, 46% hold a BS, 14% hold an MS, and the final 39% hold a PHD. Furthermore, 15% of these out-of-state PHDs came from another country.

Research

Respondents submitted a total of 296 extramural research proposals in 2015, requesting over $299 million in funding. They received over $147 million, accounting for 49% of the amount originally requested. The respondents were awarded 64 Federal research grants, contracts, and subcontracts in 2015, bringing in over 70 million federal dollars.

A large portion of research proposals are done jointly. For instance, in 2015, 259 proposals were submitted jointly with Maine and/or non-Maine institutions, resulting in $58 million in funding. From the figures provided, it seems that proposals submitted jointly with non-Maine institutions enjoy a higher success rate.

Non-Profit Joint Research Proposals

Research Proposal Type	Number of Proposals	Total Funding Requested	Total Funding Received	% Funding Materialized
Joint (Maine Institutions)	21	$3,628,484	$1,729,460	48%
Joint (Non-Maine Institutions)	117	$43,434,877	$27,774,523	64%

Research Proposal Type	Number of Proposals	Total Funding Requested	Total Funding Received	% Funding Materialized
Joint (Both Maine & Non-Maine Institutions)	121	$56,288,987	$28,686,983	51%
TOTAL	**259**	**$103,352,348**	**$58,190,966**	**56%**

Source: ICA calculations and survey

Only 2 respondents received industrial research grants, contracts, or subcontracts in 2015, a total of 10 grants or contracts worth under $200,000. Of these grants and contracts, only one was awarded by a company in Maine. It is clear from these figures, as well as the small share of industry funding for non-profit R&D expenditures, that engagement between the non-profit R&D sector and industry should improve.

Intellectual Property

The intellectual property (IP) portion of the survey was sparsely completed by respondents. Two of the four respondents indicated making IP advancements in 2015. Twenty patents were applied for, with 3 patents awarded. 93 licensing agreements were signed in 2015 (91 of which belonging to one respondent), though none of these agreements were made with Maine companies. The resulting revenues from these 2015 contracts were small for one respondent, but another indicated over $3 million in revenue from royalties as a result of its IP development. During the 2014 to 2016 period, only one respondent indicated having formed 2 new spinoff companies.

These survey findings of this portion should not be regarded as definitive or conclusive. IP advancements take considerable time and resources. Furthermore, the benefits of IP can also be slow to develop, so trying to capture progress in such a narrow window is ineffective.

University R&D Survey

The university R&D survey was very similar to the non-profit survey, but included additional academic-specific questions on publications and student population. Like the non-profit R&D survey, the university R&D survey went out to a limited audience of academic institutions that participate in R&D activities. Only two university respondents participated, making the data more descriptive at face value rather than being dependable enough to make broad inferences.

The university respondents encompass almost 700,000 square feet of R&D facilities valued at roughly $116 million in 2015. They purchased nearly $1 million in research equipment during that same year, though none of the equipment was sourced from within the state.

The Federal government was the largest source of funding for university R&D expenditures (64%), while the State of Maine provided 28% of funding for R&D expenditures, followed by 5% provided by industry and 2% sourced through individuals and foundations. While still a relatively small share, it seems that

the university respondent leverages a higher percentage of funding through industry than do non-profits.[21]

Student Population

University respondents were asked about the student population of science and engineering students, the category most likely to enter the R&D field in the future. Between the two respondents, almost 4,300 undergraduate students were enrolled in science and engineering during the Fall 2015 semester. Another 622 graduate students and 291 PHD candidates were enrolled in the field that same semester.

It should be noted that Maine's academic institutions, at least the ones represented in the survey, have a significant influence on attracting students from outside the state. In fact, 37% of undergraduate science and engineering students were out-of-state in Fall 2015. This point becomes even more pronounced at the graduate and PHD level, with well over half of students coming from out-of-state. Though only 3% of undergraduate science and engineering students come from outside the country, the percentage increases to a significant share at the graduate (24%) and PHD (32%) level.

Science and Engineering Student Numbers – Fall 2015

Level	Number Enrolled	% Out of State	% Out of Country	Number Degrees Conferred
Undergraduate	4292	37%	3%	897
Graduate	622	57%	24%	150
PHD	291	65%	32%	33

Source: ICA calculations and survey

Student populations no doubt have economic impact on the local economies in which they reside. However, the survey did not capture what percentage of science and engineering students go on to find work in Maine after graduation. This would be an interesting study in itself but rely upon the alumni association database capabilities of each academic institution to explore further. In order for Maine to capitalize on this importation of academic talent, its economy needs to provide opportunities for these students to remain in the state after graduation.

Employment

The two respondents account for over 3,000 employees, of which 2,383 are full-time workers. There is a relatively equal share of faculty, professional, and classified employees. Unfortunately, one of the two respondents did not indicate personnel numbers that came from out-of-state. However, the other respondent indicated that 96% of faculty came from out-of-state, while 6% came from out-of-country. Furthermore, 51% of this respondent's professional staff came from out-of-state, and 3% of the professional staff came from out-of-country.

University Staff Count

[21] Based on one respondent; the other declined to answer.

Staff Type	Faculty	Professional	Classified (Technicians, Clerical, etc.)
Temporary	310	163	154
Part-Time	67	60	60
Full-Time	710	792	881
TOTAL	**1087**	**1015**	**1095**

Source: ICA calculations and survey

Research & Publications

University respondents reported submitting 1,239 extramural research proposals in 2015, requesting over $170 million in funding. Of the amount requested, 28% (or just below $48 million) of funding actually materialized. That same year, respondents applied for 164 Federal research grants, contracts, and subcontracts, receiving almost $23 million in Federal funding. University respondents submitted a total of 83 joint research proposals and received just over $9 million in funding, or 61% of the amount originally requested.

University Joint Research Proposals

Research Proposal Type	Number of Proposals	Total Funding Requested	Total Funding Received	% Funding Materialized
Joint (Maine Institutions)	6	$769,073	$624,101	81%
Joint (Non-Maine Institutions)	70	$9,486,011	$4,102,579	43%
Joint (Both Maine & Non-Maine Institutions)	7	$4,750,000	$4,500,000	95%
TOTAL	**83**	**$15,005,084**	**$9,226,680**	**61%**

Source: ICA calculations and survey

As noted earlier, one respondent indicated engagement with industry. It received 631 industrial research grants and contracts valued at almost $5 million. 264 of these grants and contracts (or $2.6 million) were awarded by Maine companies.

Over 900 scientific peer-reviewed works were published in 2015 between the respondents, of which 546 were journal articles, 63 were book chapters, 18 were books, and 284 were scientific papers.

Publications – 2015

Type	Total

Type	Total
Journal Articles	546
Book Chapters	63
Books	18
Scientific Papers	284

Source: ICA calculations and survey

Intellectual Property

Intellectual property advancements were dominated by one respondent which skews the figures. However, during 2015, 19 disclosures were made, along with 16 patents awarded, and 16 licensing agreements signed (7 of which were with Maine companies). One respondent also indicated the creation of a new spinoff company in 2015.

Recommendations for Improvement

As with previous reporting periods, the survey implementation process was met with various difficulties. The economic development survey, in particular, was still too long. The amount of detail required was burdensome, which likely affected the response rate. Unfortunately, without a reliable database of information on program beneficiaries, the level of detail is required, especially when executing a financial model to reveal the cost-benefit analysis of a program.

Gaining access to program participants remained challenging. As with previous surveys, BETR program participants were not able to be contacted since MRS could not distribute the survey separately. MRS did share the lists of BETR participants between FY 2014 and 2016 but lacked the proper contact information. As before, the survey hoped to capture BETR participants that also participated in other programs, such as PTDZ. However, the participation of FAME and MTI was greatly improved. Each organization actively collaborated with ICA to distribute the survey to their respective program participants.

The platform used to execute the survey, Survey Monkey, proved to be problematic. An alternate survey platform should be investigated for future evaluation rounds. The website crashed on multiple occasions, causing confusion and frustration for both the respondents and staff. Furthermore, the web design caused further difficulties. For example, the survey web page would not automatically adjust to fit the size of the question. One question involved a series of matrices that did not fit on the page. Instead of autofitting, the survey question displayed a hard-to-see scroll bar, without a clear indication that further matrix options that were out of view needed to be completed.

Another example is the “formatting error” message or the “required response” error message. These messages would appear in a nebulous area between two questions without clearly indicating to which question the error message applied.

Since DECD staff and account representatives were heavily involved in the survey implementation process, the Department was solicited by ICA to provide frank feedback. The following items were noted:

- Respondents lamented the lack of ability to save progress during the survey.[22]
- Respondents complained about the lack of clear instructions. While an explanation for the purpose of the survey was provided at the beginning of the survey, the amount of difficulty experienced with certain questions was not anticipated. While it was assumed that most of the questions were straightforward, many respondents did not experience it that way.
- Inability to print out the survey prior and during the process. The ability to review the survey prior to commencing it on the Survey Monkey platform, as well as the ability to print and review responses before submission, was a drawback. While the ability to print is limited by the survey platform (Survey Monkey), ICA staff could send a PDF copy of the survey to all participants to review. This would enable participants to research and gather information prior to beginning the survey online. It would also help troubleshoot unclear questioning before survey implementation.
- Lack of receipt confirmation.[23]

The survey process still has room for improvement. First, extra investigation into which questions are essential needs to be made in order to pare down the length of the economic development survey, which still remains lengthy and is detrimental to response rates.

Second, the survey requires much more specific input and feedback from the Economic Development and R&D Steering Committees. Drafts of the survey were distributed to each, but sparse feedback was given. A working session should be organized prior to the implementation of the survey in which each Steering Committee sits down with ICA and DECD staff to go through each question. This effort would help intercept problematic questions and language, helping staff identify which questions should be altered, eliminated, or accompanied by further instruction.

Third, involving DECD's Director of Tax Incentive Programs in the survey design and implementation design process would also help identify potential pitfalls before they occur. Given this person's position within DECD to organize and involve account representatives of program participants, involving them should be a standard practice.

Finally, as mentioned above, PDFs of the survey should be distributed to program participants prior to opening survey. This would enable companies to coordinate and gather the required information before commencing the survey online.

[22] It should be noted that Survey Monkey does save progress as long as the user uses the same device and enables cookies on the web browser. Without cookies enabled, the responses are not saved and progress is lost if the web page is closed. Now that this is known, it should be communicated to each participant prior to beginning future surveys via Survey Monkey.

[23] Upon clicking "Done" the survey should have been automatically received on the Survey Monkey platform, but this did not occur on multiple occasions. It is still unclear why.

Appendix G – Annual Report Review

To evaluate the annual reports and traceability of incentive programs, annual reports were retrieved from State departments' (e.g. DECD and Revenue Services) and organizations' (e.g. FAME, DECD and MTI) websites. A separate data request was not submitted this year as concerns about violating confidentiality clauses in the various programs prohibited the analysis team from obtaining enough information for comparison purposes.

In order to consistently evaluate the extent to which annual reports are produced as well as the traceability of incentive programs, our team designed a template consisting of various elements that capture ease of access and quality of content. For each program, we evaluated the following questions:

5. **Availability of Annual Reports**
    - Does it (i.e. the program website) include annual reports in a location that you can readily find?
6. **Traceability**
    - Is there a program website you can find with an internet search?
7. **Content**
    - Does it include application process and forms online?
    - What are the target sectors of the program?
    - Are the benefits of the program clearly stated?
    - Are the eligibility requirements posted online and clear?
    - Are there any caps on benefits?
    - Open enrollment or periodic?
8. **Non-Compliance**
    - Does the program claim to purge non-compliant companies?

The results for each of the questions have been further analyzed and generalized below.

Availability of Annual Reports

Programs that produced annual reports in 2014 continued to do so for 2015 and 2016. Some of the reports included useful but basic data on incentive recipients, budgets allocated, jobs created and jobs retained (e.g. FAME) whilst some of them disclosed little information regarding the incentives that had been distributed. DECD, in particular, does not include specific numbers for many of their programs, other than for the MITC. For some incentive administrators, data is available through annual reports which include data on not only the incentive programs but also other expenditures. For instance, for incentive programs registered by the MRS, the Maine State Tax Expenditure Report published by the MRS Department of Administrative and Financial Services provides useful data on its incentive programs but is incorporated in a wider report that covers all tax expenditures on income tax reimbursements, property tax reimbursements and sales and excise tax exemptions.

Traceability

Given the data difficulties, we focused on reviewing the traceability, ease of access and program-related information. One of the main concerns is the fact that programs and organizations registering incentive programs are often difficult to trace online. This can be related to both the name of the incentive programs – which may be too specific and need to be generalized – as well as the abbreviation of the administrative authorities. For instance, the MTI website could not be found by googling the commonly recognized abbreviation MTI. The user instead must google Maine Technology Institute to reach the website. This could easily be remedied by changing the metadata keywords in the website.

Content

In terms of the content, most websites clearly listed targets, eligibility requirements and incentive benefits. These concepts are interrelated to a certain extent and should always be listed together. After all, even within incentive programs, the incentive benefits may be directly related with certain eligibility criteria. Such eligibility criteria usually relate to certain target industries as well as investment thresholds and are contingent upon the type of incentive. For instance, grants may have different structures where eligibility criteria are linked with certain benefits (i.e. amount of cash grant or tax credit) than loans (i.e. rates and loan amounts). Clearly, due to their specific nature, technical incentives usually do not impose strict eligibility criteria.

One element where incentive programs generally lack information relates to whether incentive benefits are capped. In certain cases, the potential incentive recipients need to look beyond the website information and comb through documents and laws to find out for which exact benefits its investment may qualify. This implies that, if potential investors do not look further than the website and/or have the resources and capability to study and understand the particular incentive legislation, incentive applicants may have different expectations of the incentive programs and benefits than they are actually eligible for. To solve this issue, exceptions, thresholds and caps that may apply to the incentive should be clearly listed on the website. This relates not only to the amount of incentives but also to the duration.

In addition, one element that is frequently overlooked is whether an (annual) application deadline applies. Some programs do explicitly mention application deadlines and whether the application to the incentive program is open year-round or only periodically accessible. Again, to avoid any confusion among potential incentive recipients, the website should clearly list whether applications can be submitted on a year-round or periodic basis.

In general, FAME had the best program traceability and content, listing all the critical details of the programs with applications in a structured, comprehensive, understandable and consistent manner (i.e. eligibility, benefits, types, terms, guarantees, fees, application process, application documents and application requirements). The FAME website and individual programs were easy to find with both a google search and from the homepage. MTI programs had the clearest information to accompany the online applications. For the most part, objectives, application procedures, and deadlines were clearly stated. The application review process was also clearly stated, however, their review process is in

practice very labor-intensive and complicated. Nevertheless, for potential investors, it is critical to understand the application review process to anticipate and comply with (future) requirements.

Non-Compliance

Specific attention should be paid to non-compliance of incentive recipients (i.e. recipients that do not meet certain requirements agreed on prior to awarding the incentive). In general, there is little to no information describing any purge practices for non-compliant incentive recipients. Being a financial institution, non-compliance for FAME by definition means expulsion from the program. However, it is not as straightforward for the other programs. For example, conversations with the PTDZ administrators found that PTDZ does purge non-compliant companies. However, this is not stated on the program website. It is important to describe purge circumstances and practices to purge non-compliant recipients so companies have the chance to comply with the requirements and are well informed regarding the consequences of not complying with requirements and eligibility criteria throughout the period in which the incentive is awarded. Please note that just posting the requirements is insufficient. For accountability purposes, there needs to be dedicated legislation behind the requirements to allow the program to purge non-compliant companies.

Suggested Improvements

Concluding, both FAME's and MTI's website include elements necessary for best practice incentive program websites which may thus function as guides to other Maine incentive administrators as they look to improve their own program's traceability, program descriptions, eligibility criteria and benefits. Many of the suggested changes below are easily implemented with the assistance of the entity's web designer. Some of the changes recommended would take more effort. For example, posting an annual report is simple, but generating a report for a program that has not historically published a report is more difficult.

- Make sure to refer to programs consistently by their correct name. In certain cases, the names for the same programs are similar but not identical. This can make finding the correct program information difficult, especially if the name has changed over time, which may confuse potential incentive applicants.
- Ensure programs are listed on one dedicated website and prevent from overlapping websites (i.e. same programs listed on the website of multiple administrators) or, in case of necessity, cross-link between incentive program websites, especially where programs need to be mentioned on two different agency's websites for certain application or regulatory purposes.
- Make sure all programs accurately use metadata keywords and not exclusively use abbreviations so internet search engines can find the program information.
- Make sure all programs have updated program information on their respective websites. This relates to the annual reports (update the most recent annual report as soon as it is available) as well as to the application procedure (e.g. update the status of the incentive program in case the program changes to inactive or when a submission deadline has passed).

- Make sure program requirement information is updated, consistent and comprehensive if the program is described on more than one website or webpage or if the website includes multiple incentive programs.

DECD

Program Name	Economic Development Program	Maine Tourism Marketing Promotion Fund (MTMPF)	Community Enterprise Grant Program	Maine International Trade Center	Downtown Revitalization Grant Program	Business Ombudsman	Communities for Maine's Future	Brunswick Naval Air Station Job Tax Increment Financing	Maine Made - Maine	Municipal Tax Increment Financing	Maine Micro-Enterprise Initiative Fund
Program Administrator	DECD	DECD	DECD	DECD	DECD	DECD	DECD	DECD	DECD	DECD	DECD
Type of program	Grant and Loan	Grant	Grants	Technical Assistance	Grants	Business Assistance	Grants	Tax	Business Assistance	Tax	Grants
Annual report = online	No	No	No	Yes	No	No	No	No	No	No	No
Is There a Program Website you can find with an Internet Search?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Does it Include Annual Reports in a Location That You Can Readily Find?	No	No	No	Yes	No	No	No	No	No	No	No
Does it Include Application Process and Forms Online?	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	No
What are the Target Sectors of the Program?	Maine communities	Tourism Industry	Micro-businesses	Maine companies	Maine communities	Small businesses	Municipalities	Unclear	Maine industries	Municipalities	Micro-businesses
Are the Benefits of the Program Clearly Stated?	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
Are the Eligibility Requirements Posted Online and Clear?	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
Does the Program Claim to Purge Non-Compliant Companies?	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	No	Unclear	Unclear
Are There any Caps on Benefits?	Yes	No	Yes	Yes	Yes	Unclear	Unclear	Yes	No	Yes	Unclear
Open enrollment or Periodic	Periodic	Periodic	Periodic	Open	Periodic	Unclear	Unclear	Unclear	Open	Periodic	Periodic

MTI[24]

Program Name	Cluster Initiative	Development Awards	Seed Grant	Equity Capital Fund (MTI)	TechStart Program (MTI)	Phase 0 Program	Pre phase II SBIR/STTR Matching Grants	Technical Assistance securing federal SBIR/STTR funding	Maine Technology Asset Fund
Program Administrator	MTI	MTI	MTI	MTI	MTI	MTI	MTI	MTI	MTI
Type of program	Grant	Grant (with payback)	Grant	Grant	Grants	Grant	Grant	Technical Assistance (and grant)	Grant (some require repayment)
Annual report = online	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is There a Program Website you can find with an Internet Search?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does it Include Annual Reports in a Location That You Can Readily Find?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does it Include Application Process and Forms Online?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
What are the Target Sectors of the Program?	R&D	R&D	R&D	Innovative businesses	Innovative businesses	Innovative businesses applying for SBIR/STTR grants	Innovative businesses applying for SBIR/STTR grants	Innovative businesses applying for SBIR/STTR grants	R&D
Are the Benefits of the Program Clearly Stated?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Are the Eligibility Requirements Posted Online and Clear?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Does the Program Claim to Purge Non-Compliant Companies?	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Are There any Caps on Benefits?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear
Open enrollment or Periodic	Periodic	Periodic	Periodic	Open	Periodic	Open	Periodic	Open	Periodic

[24] Please note that North Star Alliance Cluster Award Matching Fund (MTI), Maine Marine Research Fund, and Maine Biotechnology Research Fund are not included above as those programs are either inactive or terminated.

DECD and MRS

Program Name	ETIF	PTDZ
Program Administrator	DECD	DECD
Type of program	Tax	Tax
Annual report = online	Yes	Yes
Is There a Program Website you can find with an Internet Search?	Yes	Yes
Does it Include Annual Reports in a Location That You Can Readily Find?	Yes	Yes
Does it Include Application Process and Forms Online?	Yes	Yes
What are the Target Sectors of the Program?	No Specific Sector. Excludes Retail and Non-Profits	Biotech, Aquaculture/Marine Tech, Composites, Environmental Technology, Advanced Tech for Forestry and Agriculture, Precision Manufacturing, IT, Financial Services
Are the Benefits of the Program Clearly Stated?	Yes	Yes
Are the Eligibility Requirements Posted Online and Clear?	Yes	Yes
Does the Program Claim to Purge Non-Compliant Companies?	Unclear	Unclear
Are There any Caps on Benefits?	Yes	Yes
Open enrollment or Periodic	Periodic	Periodic

MRS[25]

Program Name	BETR	Sales Tax Exemptions (Manufacturing Machinery , Equipment and Tangible Personal Property)	Sales Tax Exemptions (Fuel and Electricity for Manufacturing)	Business Equipment Tax Exemption	Shipbuilding Credit	Sales Tax Exemptions (Products Used in Agricultural and Aquaculture Production, and Bait)	Sales Tax Exemptions (Commercial Agriculture, Commercial Fishing, and Commercial Wood Harvesting Machinery and Equipment)	Sales Tax Exemptions (Machinery and Equipment for Research)	Super Credit for Substantially Increased Research and Development	Research Expense Tax Credit
Program Administrator	MRS	MRS	MRS	MRS	MRS	MRS	MRS	MRS	MRS	MRS
Type of program	Tax	Tax	Tax	Tax	Tax	Tax	Tax	Tax	Tax	Tax
Annual report = online	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is There a Program Website you can find with an Internet Search?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes
Does it Include Annual Reports in a Location That You Can Readily Find?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does it Include Application Process and Forms Online?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes
What are the Target Sectors of the Program?	No Specific Sector	Agricultural Production	Manufacturing	No Specific Sector	Shipbuilding	Aquaculture Production	Commercial Agricultural Production	Research Activities	Research Activities	Research Activities
Are the Benefits of the Program Clearly Stated?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes
Are the Eligibility Requirements Posted Online and Clear?	Yes	Yes	Yes	Yes	No	No	No	Yes	No	Yes
Does the Program Claim to Purge Non-Compliant Companies?	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Are There any Caps on Benefits?	Yes	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Yes
Open enrollment or Periodic	Periodic	Periodic	Periodic	Closed	Unknown	Unknown	Unknown	Periodic	Unknown	Periodic

[25] Please note that the Jobs and Investment Tax Credit and the High-Technology Investment Tax Credit programs are not included above as those programs are either inactive or terminated.

FAME

Program Name	Commercial loan Insurance Program	Direct Loan (Formally: Economic Recovery Loan Program)	Maine Seed Capital Tax Credit Program	Regional Economic Development Revolving Loan Program	Maine Economic Development Venture Capital Revolving Loan Investment Program	Linked Investment for Commercial Enterprises	Maine New Markets Tax Credit Program	Linked Investment Programs for Agricultural Enterprises
Program Administrator	FAME	FAME	FAME	FAME	FAME	FAME	FAME	FAME
Type of program	Loans	Loan	Tax	Grant	Equity	Loan	Tax	Loan
Annual report = online	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is There a Program Website you can find with an Internet Search?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does it Include Annual Reports in a Location That You Can Readily Find?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does it Include Application Process and Forms Online?	Yes	Yes	Yes	Yes	No	No	Yes	No
What are the Target Sectors of the Program?	No Specific Sector	No Specific Sector	No Specific Sector	Small technology businesses	Early growth business	No Specific Sector	No Specific Sector	Agriculture
Are the Benefits of the Program Clearly Stated?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Are the Eligibility Requirements Posted Online and Clear?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the Program Claim to Purge Non-Compliant Companies?	Yes	No	No	Unknown	Unknown	Unknown	Unknown	Unknown
Are There any Caps on Benefits?	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Open enrollment or Periodic	Open	Open	Periodic	Open	Open	Open	Open	Periodic

Other Programs[26]

Program Name	MEP	Small Business Development Centers	Commercial Facilities Development Program	Speculative Industrial Buildings Program	Maine Quality Centers	PTAC	Agricultural Marketing Loan Fund (ALMF)	Maine Farms for the Future	Potato Marketing Improvement Fund Program	Agricultural Development Grant Program	Maine Technology Centers
Program Administrator	SBA	SBA	RDA	RDA	MQC	Department of Defense	Department of Agriculture (FAME)	Department of Agriculture, Conservation and Forestry	Department of Agriculture (FAME)	Department of Agriculture	
Type of program	Technical Assistance	Business Assistance	Loan	Loan	Workforce Training	Technical Assistance	Loan	Grant AND Loan	Loan	Grant	Technical Assistance
Annual report = online	No	Yes	No	No	Yes	No	Yes	No	Yes	No	No
Is There a Program Website you can find with an Internet Search?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Does it Include Annual Reports in a Location That You Can Readily Find?	No	Yes	No	No	Yes	No	Yes	No	No	No	No
Does it Include Application Process and Forms Online?	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
What are the Target Sectors of the Program?	Manufacturing	Small Businesses	Real Estate	Municipality	Education	Military	Agriculture	Agriculture	Potato Farming	Farming	Unclear
Are the Benefits of the Program Clearly Stated?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Are the Eligibility Requirements Posted Online and Clear?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Does the Program Claim to Purge Non-Compliant Companies?	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unclear
Are There any Caps on Benefits?	Unknown	Unknown	Yes	Yes	Unknown	Unknown	Yes	Unknown	Yes	Unknown	Unclear
Open enrollment or Periodic	Unknown	Open	Open	Open	Open	Unknown	Open	Periodic	Open	Unknown	Unclear

[26] Please note that the Maine Patent Program is not included above as the program is either inactive or terminated.

Appendix H – Cost Benefit Findings

Based on program classifications, and in close collaboration with DECD and associated stakeholders, the review team conducted full scale CBA for four comprehensive programs:

- BETR program,
- DECD's Pine Tree Development Zone (PTDZ) program,
- MTI's Development Loans (DL) and
- The programs offered by FAME, the Commercial Loan Insurance (CLI) and the Economic Recovery Loan Program (ERLP).

The methodology for computing the CBA involves aggregating the average individual firm characteristics in terms of, amongst others, headcount, salary costs, sales revenues, cost of sales, job creation, retained jobs, and geographical distribution of sales and shareholders. This aggregated level simulates the total number of certified companies that are actually making use of the program. For all four CBAs, this forms the point of departure for further analysis.

In an ideal world, all required statistics are available. However, evaluating rather complex incentive programs per definition requires a mixture of primary data gathering, desk research, and the use of assumptions where data is missing, incomplete, or non-existing.

Since the model examines financial flows from 2014 – 2016, benefits and costs incurred in the past. It is therefore important to discount the cash flows to the current value. The CBA uses general cash flow analysis practices to discount cash flows to current values, and below is the formula used:

$$\text{Current Value} = \sum_{t=0}^{T} \frac{X_t}{(1+r)^{-t}}$$

where (X_t) represents the specific amounts one specific year (t). This value is 'discounted', by dividing it by the 'discount rate' (r = 5%) for each year (t). This rate (1+r) is the yield (or return on investment) that normally should have been made on the investment, and $-t$ is the number of years in the past.

The model calculated two scenarios:

1. The incentive is provided; and
2. The incentive is not provided;

For both scenarios the direct tax revenues for the following taxes at the State level are calculated:

- Corporate income tax;
- Personal income tax;
- Dividends tax;

- Sales tax; and
- Payroll tax.

If the second scenario leads to lower tax revenues (i.e. as a result of less employment) than this can be considered a cost in the form of revenues foregone. If the revenues foregone are larger than the cost of providing and monitoring the incentive program than the model shows a positive rate of return.

It might also be possible that a specific aspect of an incentive program results in a lower tax revenue in one field but compensated by higher tax revenues in other fields. For instance, a corporate income tax reduction (as a form of incentive) results in lower corporate income tax revenues, but this loss is compensated by companies being able to hire more personnel, resulting in higher personal income tax revenues and higher sales tax revenues. If this is the case, the model also shows a positive rate of return.

There will be a negative IRR if the tax revenue stream in the first scenario, as a result of the benefits provided to companies, is lower compared to the revenue stream in the second scenario.

Important Indicators

Corporate Income Taxes

The revenue generated from the corporate income tax is based on the corporate tax liability. The tax liability is calculated as the aggregated taxable income after (tax) incentives, depreciation, cost of sales, and debt financing. The corporate income tax revenue is then derived by applying the effective corporate income tax rate against the tax liability. There are progressive corporate income tax brackets depending on the amount of taxable income. Below is an overview of Maine's Corporate Income Tax brackets as well as the federal Corporate Income Tax brackets.

State of Maine Corporate Income Tax brackets

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	State of Maine CIT Rate	Of the amount over
-	$25,000.00	$0.00	3.50%	$0.00
$25,000.00	$75,000.00	$875.00	7.93%	$25,000.00
$75,000.00	$250,000.00	$4,840.00	8.33%	$75,000.00
$250,000.00	…	$19,417.50	8.93%	$250,000.00

Source: Tax Foundation's 2014 State Business Tax Climate Index

Federal Corporate Income Tax brackets

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	Federal CIT Rate	Of the amount over
$0.00	$50,000.00	$0.00	15%	$0.00
$50,000.00	$75,000.00	$7,500.00	25%	$50,000.00
$75,000.00	$100,000.00	$13,750.00	34%	$75,000.00
$100,000.00	$335,000.00	$22,250.00	39%	$100,000.00
$335,000.00	$10,000,000.00	$113,900.00	34%	$335,000.00
$10,000,000.00	$15,000,000.00	$3,400,000.00	35%	$10,000,000.00

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	Federal CIT Rate	Of the amount over
$15,000,000.00	$18,333,333.00	$5,150,000.00	38%	$15,000,000.00
$18,333,333.00	…	$6,416,666.54	35%	$18,333,333.00

Source: Tax Foundation's 2014 State Business Tax Climate Index

In order to customize the effective tax rate to the actual sample of incentive recipients (i.e. BETR, PTDZ, DL and CLI/ERLP beneficiaries), the average tax liability and tax amount have been calculated for each CBA. Based on these numbers, the state as well as the federal effective corporate income tax rates have been calculated and integrated into the model. Using these numbers provides a more realistic picture of the corporate income tax revenues for Maine and the federal government as the effective rates have been based on the actual survey of incentive recipients rather than on an aggregated sum. The effective corporate income tax rates have therefore been adjusted to the characteristics (e.g. size and profitability) of the incentive recipients. The table below provides an overview of the effective corporate income tax rates per CBA.

As an example: A BETR recipient has an average tax liability of $980,362.88. This implies the BETR recipient pays a state corporate income tax amount of $84,638.91, which equals an effective state corporate income tax rate of 8.63%. The formula is as follows:

- Fixed amount of $19,417.50 plus 8.93% x ($980,362.88 – $250,000) = $84,638.91.
- Effective State of Maine corporate income tax rate: $84,638.91 expressed as a percentage of $980,362.88 = 8.63%.

Similarly, the effective federal corporate income tax rates have been derived using the same principle. Again, the example for the effective BETR federal corporate income tax rate:

- Fixed amount of $113,900.00 plus 34% x ($980,362.88 – $335,000) = $333,323.38.
- Effective State of Maine corporate income tax rate: $333,323.38 expressed as a percentage of $980,362.88= 34.00%.

Average tax liability, average tax amount, and effective corporate income tax rates per incentive program

Incentive Program	Average Tax Liability	Average Tax Amount (State)	Effective State of Maine CIT Rate	Average Tax Amount (Federal)	Effective Federal CIT Rate
BETR	$980.362.88	$84,638.91	8.63%	$333,323.38	34.00%
PTDZ	$22,738,037.59	$2,027,599.26	8.92%	$7,958,313.15	35.00%
DL	$0.00	$0.00	0.00%	$0.00	0.00%
CLI/ERLP	$360,152.45	$29,254.11	8.12%	$123,709.45	34.35%

Source: Own calculations

It should be noted the CBA assumes similar corporate income tax rates in both scenarios (with and without incentive program). However, the model is designed in such a way that it allows for easy adjustments should this be necessary to represent a reduced corporate income tax rate under a specific incentive program, which is for instance the case in the PTDZ program.

The effective corporate income tax rates for MTI's DL program stood at 0.00%. DL beneficiaries reported in the survey that their cost of sales often exceeded revenues, meaning that these companies had a tax liability of $0.00. Given that the preponderance of DL beneficiaries are start-ups, it is not surprising that expenses exceed revenues during the development phase.

Salary Costs

The salary costs in the state of Maine are a critical component of each of the four CBAs. This indicator is – amongst others - used to calculate the gross income effects and total annual salary costs of the incentive programs, which, in turn, are critical inputs for calculating the additional personal income tax and payroll tax.

In order to calculate the average annual salary costs per Maine employee for each of the incentive programs, we calculated the distribution of employees in the sample that has been used per incentive program. The survey asked for the job distribution of 6 different job functions, which have been matched BLS occupations across 19 different profiles. As such, this relative distribution of job functions has then been used to calculate the average salary cost per person employed using BLS annual mean wage statistics. The result is a weighted annual salary cost per employee per incentive program which, just as with the effective corporate income tax rates, is typical for the incentive recipients and reflects the characteristics of the actual incentive recipients.

Occupational distribution, annual mean wage and average salary cost per person employed per incentive program

Occupation	Annual mean wage	BETR	PTDZ	CLI/ERLP	DL
		% in survey sample	% in survey sample	% in survey sample	% in survey sample
First-Line Supervisors of Production and Operating Workers	$57,900	12.3%	13.3%	3.5%	6.6%
Team Assemblers	$34,650	12.3%	13.3%	3.5%	6.6%
Assemblers and Fabricators All Other	$30,310	12.3%	13.3%	3.5%	6.6%
Logisticians	$65,840	12.3%	13.3%	3.5%	6.6%
Welders, Cutters, Solderers, and Brazers	$46,390	12.3%	13.3%	3.5%	6.6%
Manufacturing/operations		**61.5%**	**66.4%**	**17.5%**	**33.1%**
Life, Physical, and Social Science Occupations	$61,230	1.6%	4.1%	2.1%	10.5%
Architecture and Engineering Occupations	$73,560	1.6%	4.1%	2.1%	10.5%
Computer and Mathematical Occupations	$72,920	1.6%	4.1%	2.1%	10.5%
Technical (engineers, researchers, scientists, etc.)		**4.7%**	**12.2%**	**6.2%**	**31.5%**
Business and Financial Operations Occupations	$62,750	3.6%	2.8%	1.0%	3.1%
Finance		**3.6%**	**2.8%**	**1.0%**	**3.1%**

Occupation	Annual mean wage	BETR	PTDZ	CLI/ERLP	DL
		% in survey sample	% in survey sample	% in survey sample	% in survey sample
Marketing & Sales Managers	$108,805	8.3%	3.9%	1.3%	10.0%
Sales Representatives, Services	$52,320	8.3%	3.9%	1.3%	10.0%
Marketing and sales		**16.7%**	**7.9%**	**2.6%**	**20.1%**
General and Operations Managers	$92,740	4.8%	3.2%	8.1%	5.9%
Administrative Services Managers	$72,050	4.8%	3.2%	8.1%	5.9%
Administrative/executive		**9.7%**	**6.4%**	**16.2%**	**11.8%**
All Occupations	$44,180	3.8%	4.3%	56.6%	0.4%
Other		**3.8%**	**4.3%**	**56.6%**	**0.4%**
Average salary cost per person employed		**$57,537.81**	**$54,930.94**	**$53,531.79**	**$65,414.03**

Source: Bureau of Labor Statistics (2014) and own calculations

Personal Income Tax

The average salary cost per person employed as calculated in the previous section are critical for calculating the effective personal income tax rates at state and federal level. Similar to the corporate income tax rates, different personal income tax rate brackets apply at state and federal level depending on the type of household (i.e. married or single).

State of Maine Personal Income Tax brackets – single taxpayers

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	State of Maine PIT Rate	Of the amount over
$0.00	$5,199.00	$0.00	0.00%	$0.00
$5,200.00	$20,899.00	$0.00	6.50%	$5,200.00
$20,900	…	$1,020.44	8.00%	$20,900.00

Source: Bankrate.com (2017)

State of Maine Personal Income Tax brackets – married taxpayers

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	State of Maine PIT Rate	Of the amount over
$0.00	$10,449.00	$0.00	0.00%	$0.00
$10,450.00	$41,849.00	$0.00	6.50%	$10,450.00
$41,850.00	…	$2,040.94	7.95%	$41,850.00

Source: Bankrate.com (2017)

Federal Personal Income Tax brackets – single taxpayers

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	Tax Rate	Of the amount over
$0.00	$9,275.00	$0.00	10.00%	$0.00
$9,275.00	$37,650.00	$927.50	15.00%	$9,275.00

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	Tax Rate	Of the amount over
$37,650.00	$91,150.00	$5,183.75	25.00%	$37,650.00
$91,150.00	$190,150.00	$18,558.75	28.00%	$91,150.00
$190,150.00	$413,350.00	$46,278.75	33.00%	$190,150.00
$413,350.00	$415,050.00	$119,934.75	35.00%	$413,350.00
$415,050.00	…	$120,529.75	39.60%	$415,050.00

Source: Bankrate.com (2017)

Federal Personal Income Tax brackets – married taxpayers

Taxable Income ($) Minimum	Taxable Income ($) Maximum	Fixed amount	Tax Rate	Of the amount over
$0.00	$18,550.00	$0.00	10.00%	$0.00
$18,550.00	$75,300.00	$1,855.00	15.00%	$18,550.00
$75,300.00	$151,900.00	$10,367.50	25.00%	$75,300.00
$151,900.00	$231,450.00	$29,517.50	28.00%	$151,900.00
$231,450.00	$413,350.00	$51,791.50	33.00%	$231,450.00
$413,350.00	$466,950.00	$111,818.50	35.00%	$413,350.00
$466,950.00	…	$130,578.50	39.60%	$466,950.00

Source: Bankrate.com (2017)

The first step to calculate the effective personal income tax rates is to integrate the average salary cost per person employed as calculated before. This average salary cost is applied against the respective tax brackets and rates. This yields both an average personal income tax amount for single taxpayers as well as for married taxpayers. These amounts are averaged and weighted according to the distribution of single taxpayers and married taxpayers (50.2% against 49.8%, respectively). Based on the New York Times (2014), the single adults now outnumber married adults. Single Americans account for 50.2% of the 16-and-over US population according to BLS statistics. The final step is to express this average personal income tax amount as percentage of the average salary cost which results in the effective personal income tax rate. This process is carried out at state and federal level.

To illustrate, the average salary cost per person employed of a DL recipient equals $64,139.78. This implies an employee of a DL recipient pays a state personal income tax amount of $4,479.62 (single) or $3,812.97 (married), which equals an effective state personal income tax rate of 6.47%. The formula is as follows:

- Fixed amount of $1,020.44 plus 8.00% x ($64,139.78 – $20,900.00) = $4,479.62 (single taxpayer);
- Fixed amount of $2,040.94 plus 7.95% x ($64,139.78 – $41,850.00) = $3,812.97 (married taxpayer);
- Average tax amount (State) is $4,479.62 x 50.2% plus $3,812.97 x 49.8% = $4,147.63; and

- Effective State of Maine personal income tax rate: $4,147.63 expressed as a percentage of $64,139.78 = 6.47%.

The same principle has been repeated for the other three incentive programs as well as the effective Federal PIT rate.

It should be noted here that the models incorporated an important change from previous evaluation rounds. Before, all respondents were assumed to have the same corporate tax structure as C-corporations. However, this is an incorrect assumption given that many companies are LLCs or S-corps, and therefore pass their tax liability on to the personal income tax level instead of as corporate income tax. The effect of not accounting for this important distinction is an overestimation of corporate income tax revenues and an underestimation of personal income tax revenues. To account for this, the survey asked respondents for their tax structure and the models were modified to reflect the personal income tax pass-through effect.

Average salary cost, average tax amount and effective state personal income tax rates per incentive program

	BETR	PTDZ	DL	CLI/ERLP
Average salary cost per person employed	$57,537.81	$54,930.94	$64,139.78	$53,531.79
Average tax amount – single taxpayers	$3,933.14	$3,725.89	$4,479.62	$3,630.98
Average tax amount – married taxpayers	$3,288.12	$3,080.87	$3,812.97	$2,969.64
Average tax amount (State)	$3,611.92	$3,404.67	$4,147.63	$3,301.63
Effective State of Maine PIT rate	6.28%	6.20%	6.47%	6.17%

Source: Own calculations

Average salary cost, average tax amount and effective federal personal income tax rates per incentive program

	BETR	PTDZ	DL	CLI/ERLP
Average salary cost per person employed	$57,537.81	$54,930.94	$64,139.78	$53,531.79
Average tax amount – single taxpayers	$10,155.70	$9,503.98	$11,806.20	$9,154.20
Average tax amount – married taxpayers	$7,703.17	$7,312.14	$8,693.47	$7,102.27
Average tax amount (Federal)	$8,934.34	$8,412.45	$10,256.06	$8,132.34
Effective Federal PIT rate	15.53%	15.31%	15.99%	15.19%

Source: Own calculations

Dividends Tax

The Maine Revenue Service describes that in the State of Maine dividends is considered the same as any other type of individual income and therefore taxed according the personal income tax scheme as presented above and the effective PIT rates calculated per incentive program. Therefore, the effective dividends tax rate is the same as the effective PIT rates (ranging from 6.17% for Commercial Loan Insurance recipients to 6.47% for Development Loan recipients). For the Federal dividends tax rate, the assumption is that a 15.00% dividends tax rate on qualified dividends and long-term capital gains applies[27].

A first assumption is that, of the net profit, 50% of the earnings is retained (the other 50% is saved or invested). This means half of the net profit is allocated as dividend.

For calculating the effective dividends tax rate, it is important to know the distribution of the shareholders and which portion is located in Maine. The State of Maine dividends tax can only be applied against this portion of the 50% of the net profit (i.e. share of earnings which is not retained) while the remaining portion is only taxed at Federal level. For instance, for the BETR program, 66.8% of the shareholders are resident within Maine. Thus, a State dividends tax of 6.28% applies to this portion.

Geographical distribution of shareholders per incentive program

Incentive Program	Within Maine	Within US (excl. Maine)	International
BETR	66.8%	23.8%	9.4%
PTDZ	65.6%	25.9%	8.5%
DL	73.6%	14.8%	10.5%
CLI/ERLP	83.6%	13.2%	3.3%

Source: ICA calculations and survey

[27] Taxes: What's New for 2015?

Sales Tax

The sales tax is important from two perspectives:

1. Sales tax paid by consumers; and
2. Sales tax paid by companies.

Sales tax paid by consumers

End consumers pay sales tax on top of the cost of the final product. The exact amount of sales tax generated by incentive beneficiaries has been calculated by aggregating the percentage of sales within the state of Maine. The sales tax is only applicable to this portion of the sales of the incentive beneficiaries. For instance, for the DL recipients, only 28.7% of their annual sales were allocated in Maine which implies the sales tax applies to this portion.

Geographical distribution of annual sales per incentive program

Incentive Program	Within Maine	Within US (excl. Maine)	International
BETR	27.1%	59.9%	13.2%
PTDZ	32.4%	59.7%	7.9%
DL	28.7%	60.5%	6.7%
CLI/ERLP	69.1%	27.2%	3.8%

Source: Own calculations

Sales tax paid by companies

As has already been indicated, the reason why the Federal corporate and personal income taxes are included is to calculate the portion of the disposable income which is allocated by companies and consumers to purchase local goods and services from Maine suppliers. This, in turn, leads to additional sales tax revenues for the State of Maine. The following two assumptions apply:

- Local Purchases by corporates from local Maine suppliers: 25%; and
- Local Purchases by local residents from local Maine suppliers: 40%.

Payroll Taxes for employers

The following Federal and State of Maine payroll taxes have been applied for the CBAs of the four incentive programs. The rate of the FUTA of 0.60% applies after a credit of 5.4% has been awarded in case employers paid wages subject to state unemployment tax that file Form 940. Maine's SUTA rate of 2.04% is the basic new employer rate and has fallen from 3.12% in 2015.

Payroll taxes for employers

Level	Type of Tax	Rate
Federal	Social Security taxes (up to the annual maximum)	6.20%
Federal	Medicare taxes (of wages)	1.45%
Federal	Federal unemployment taxes (FUTA)	0.60%
State	State unemployment taxes (SUTA)	2.04%

Source: Own calculations

Administrative Costs

The administrative costs portion of the model has been updated since the last evaluation round. This time, instead of making general assumptions, each program administrator (DECD, FAME, MRS, and MTI) was asked to fill out an administrative cost template which calculated cost based on number of employees, average salary, and time spent administering the program. Furthermore, instead of assuming an overhead rate of 20% for each program, the program administrator provided the actual overhead rate. Additionally, administrative cost was calculated for each year instead of applying an average across the evaluation period. Yearly consultant evaluation fees were also included in the calculations.

Annual administrative costs example: MTI Development Loans

	2014			2015			2016		
	Number	% Time Spent	Average Salary	Number	% Time Spent	Average Salary	Number	% Time Spent	Average Salary
Senior managers	2	40%	$80,000	2	50%	$82,500	2	40%	$85,000
Middle managers	2	100%	$63,000	2	100%	$66,000	2	100%	$75,000
Assistants	0	0%	0	1	100%	$35,205	2	100%	$39,475
Support staff	0	0%	0	0	0%	0	0	0%	0
Total Wage Cost	**$190,000**			**$249,705**			**$296,950**		
Overhead Rate as % of Total Wages	34.77%			42.31%			44.90%		
Average Overhead Rate (2014-2016)	40.66%			40.66%			40.66%		
Overhead Cost (Avg rate * Yearly Wage Cost)	**$77,253**			**$101,528**			**$120,738**		
Yearly Consultant Fee	$212,299			$138,747			$160,656		
% Time Spent Evaluating Program	25%			25%			25%		

	2014			2015			2016		
Annual Program Evaluation Fee	**$53,075**			**$34,687**			**$40,164**		
Total Administrative Cost	**$320,327**			**$385,920**			**$457,852**		

Source: ICA Template & MTI

Improvements to Cost-Benefit Models

Several changes were made to the Cost-Benefit Analysis models of the four programs evaluated, some of which were applied universally, while other changes were made for individual programs. The most substantive universal change heeded the critique of previous evaluation periods by addressing the corporate tax structure problem.

Previously, all program recipients were evaluated as C-Corporations, meaning that the state corporate income tax rate was applied to the model. However, this was problematic in that the majority of companies are actually S-Corps, LLCs, or LLPs and therefore pass through their tax liability to the personal income tax level. This meant that previous analyses overestimated corporate income tax costs/benefits and underestimated personal income tax costs/benefits. By incorporating a question in the survey asking participants their corporate tax structure, the model evaluates corporate and personal income tax implications based on the share of C-Corps versus non-C-corps survey participants.

Another general improvement to all models incorporated more accurate administrative cost assumptions. The new administrative cost calculations used administrator feedback rather than ICA assumptions. We asked DECD, MRS, FAME, and MTI to provide an estimate of individual staff wages, time spent per staff person on the program, and overhead rates as a percentage of salary costs. Furthermore, these costs were estimated on a yearly basis, rather than assuming the same cost for each year of the evaluation period.

Since the evaluation of programs is legislatively mandated, we can assume that evaluation costs are also an administrative cost of the program. We also included the costs of evaluating each program each year based on ICA's consulting fees for the evaluation period. This led to much more accurate administrative cost assumptions that had meaningful impact on the final IRRs.

PTDZ Model Changes

- The exact ratio of active companies *per year* was used as opposed to one average number of active companies all three years.
- The exact ratio between Tier 1 and Tier 2 companies *per year* was used as opposed to one general ratio between Tier 1 and Tier 2 companies applied to the three-year period.
- The updated model incorporates the expiration of new Tier 2 certifications for Cumberland County and York County municipalities showing a more accurate reflection of Tier 1 versus Tier 2 recipients (where Tier 2 is gradually phasing out as no new certifications are permitted).

BETR Model Changes

- The exact ratio of active companies *per year* was used as opposed to one average number of active companies all three years.

DL Model Changes

- The exact ratio of active Development Loan projects and loan amounts for each year was used as opposed to using an average ratio across the three-year period
- The exact number of Business Accelerator Grants applications and award amounts were used as opposed to assuming the number as a share of awarded Development Loan recipients. These figures were obtained from MTI's Annual Reports.
- Error correction: Previously, the model erroneously over-estimated new job creation by assuming expected hiring numbers over the three-year period to be a yearly figure, essentially tripling the job creation estimate. This error was corrected, and the resulting IRR became more realistic.

CLI Model Changes

- The previous model assumed the same ratio of leveraged vs pro rata loans for the entire evaluation period. Instead, the new model accounts for changes in the ratio on a yearly basis.

Findings

BETR CBA

Year of operation		-3	-2	-1	
Category\Year		2014	2015	2016	TOTAL - Value in 2017 US$
General Information					
Number of active firms in the program (Average over 1 year)		367	319	335	
Number of persons employed		41471	36047	37855	
Total annual salary cost		$ 2,091,841,144	$ 2,134,531,780	$ 2,178,093,653	$ 7,061,887,227
Total Annual Sales Revenues		$ 2,944,260,513	$ 3,134,089,823	$ 3,372,924,314	$ 10,405,254,136
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	89.5%	$ 2,634,064,464	$ 2,803,894,083	$ 3,017,565,883	$ 9,308,996,279
Tax liability amount		$ 310,196,049	$ 330,195,740	$ 355,358,431	$ 1,096,257,857
Total tax liability amount - C corporation		$ 37,599,521	$ 40,023,726	$ 43,073,749	$ 132,879,740
Total tax liability amount - non-C corporation		$ 272,596,528	$ 290,172,014	$ 312,284,681	$ 963,378,117
Incentive type					
Business Equipment Tax Reimbursement (actual results)		$ 37,485,734	$ 32,454,514	$ 33,104,402	$ 113,935,147
With Incentive status					
Corporate income tax Maine State Level:	8.63%	$ 3,246,127	$ 3,455,419	$ 3,718,740	$ 11,472,074
Corporate income tax US Federal Level:	34.0%	$ 12,783,837	$ 13,608,067	$ 14,645,075	$ 45,179,112
Net profit under incentive program		$ 331,651,819	$ 345,586,768	$ 370,099,018	$ 1,153,541,818
Retained earnings	50%	$ 165,825,909	$ 172,793,384	$ 185,049,509	$ 576,770,909
Dividends payable to Maine residents	67%	$ 110,740,615	$ 115,393,582	$ 123,578,375	$ 385,174,823
Dividends payable to non-residents	33%	$ 55,085,294	$ 57,399,802	$ 61,471,134	$ 191,596,086
Benefits					
Additional job creation					
New Jobs Created		3092	2881	2944	
Gross Income Effects		$ 177,889,461	$ 165,747,240	$ 169,387,814	$ 566,522,825
Additional payroll taxes	2.04%	$ 3,628,945	$ 3,381,244	$ 3,455,511	$ 11,557,066
Federal level personal income tax	15.53%	$ 27,622,276	$ 25,736,859	$ 26,302,159	$ 87,968,392
State level personal income tax	6.28%	$ 11,166,956	$ 10,404,732	$ 10,633,268	$ 35,563,297
Net income after personal income taxes for Maine residents		$ 139,100,229	$ 129,605,649	$ 132,452,387	$ 442,991,136
Personal income from employment and dividend					
Total tax liability amount - non-C corporation		$ 272,596,528	$ 290,172,014	$ 312,284,681	$ 963,378,117
Gross income effects for Maine residents		$ 2,091,841,144	$ 2,134,531,780	$ 2,178,093,653	$ 7,061,887,227
Total tax liability amount - taxed as PIT		$ 2,364,437,672	$ 2,424,703,794	$ 2,490,378,334	$ 8,025,265,344
Personal income tax for State of Maine	6.28%	$ 148,426,850	$ 152,210,037	$ 156,332,736	$ 503,783,571
Federal level personal income tax	15.53%	$ 367,144,570	$ 376,502,559	$ 386,700,354	$ 1,246,145,176
Net income after personal income tax for Maine residents		$ 1,848,866,252	$ 1,895,991,198	$ 1,947,345,244	$ 6,275,336,597
Net income after dividends tax for Maine residents		$ 78,039,832	$ 81,318,817	$ 87,086,708	$ 271,435,900
Total net income benefits Maine residents		$ 2,066,006,312	$ 2,106,915,664	$ 2,166,884,340	$ 6,989,763,633
Total Annual Sales in the State of Maine	27.1%	$ 797,626,939	$ 849,053,425	$ 913,755,860	$ 2,818,877,939
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 43,869,482	$ 46,697,938	$ 50,256,572	$ 155,038,287
Total sales tax benefits for Maine		$ 43,869,482	$ 46,697,938	$ 50,256,572	$ 155,038,287
Average additional capital expenditures		$ 372,282,576	$ 467,625,000	$ 435,753,788	$ 1,404,061,657
Average additional exports		$ 80,628,788	$ 61,383,333	$ 56,848,485	$ 220,703,935
Total Capital and Exports benefits for Maine		$ 452,911,364	$ 529,008,333	$ 492,602,273	$ 1,624,765,591
Indirect goods and services purchased in the State of Maine					
Local Purchases by BETR corporates from local Maine suppliers	25.0%	$ 658,516,116	$ 700,973,521	$ 754,391,471	$ 2,327,249,070
Local Purchases by local residents from local Maine suppliers	40.0%	$ 826,402,525	$ 842,766,266	$ 866,753,736	$ 2,795,905,453
Benefit of use of local suppliers		$ 1,484,918,641	$ 1,543,739,786	$ 1,621,145,207	$ 5,123,154,523
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	8.63%	$ 3,246,127	$ 3,455,419	$ 3,718,740	$ 11,472,074
Sales Tax revenues		$ 43,869,482	$ 46,697,938	$ 50,256,572	$ 155,038,287
Personal income taxes for the State of Maine		$ 159,593,806	$ 162,614,769	$ 166,966,004	$ 539,346,868
Residents dividends tax	6.28%	$ 6,951,708	$ 7,243,797	$ 7,757,595	$ 24,179,231
Payroll taxes employer State of Maine	2.04%	$ 46,302,504	$ 46,925,692	$ 47,888,622	$ 155,619,565
Property tax (BETR)		$ -	$ -	$ -	$ -
Direct tax benefits for Maine		$ 259,963,627	$ 266,937,615	$ 276,587,534	$ 885,656,025
Tax benefits at Federal Level					
Corporate income tax at federal level	34.00%	$ 12,783,837	$ 13,608,067	$ 14,645,075	$ 45,179,112
Personal income tax at federal level	15.53%	$ 352,438,670	$ 357,182,159	$ 364,511,649	$ 1,184,522,377
Dividends tax at federal level	15.53%	$ 25,749,075	$ 26,830,969	$ 28,734,072	$ 89,559,691
Total other benefits		$ 390,971,582	$ 397,621,195	$ 407,890,796	$ 1,319,261,180
Total Dirct Benefits		$ 259,963,627	$ 266,937,615	$ 276,587,534	$ 885,656,025
Total Inrect Benefits		$ 4,394,807,899	$ 4,577,284,978	$ 4,688,522,615	$ 15,056,944,928
Costs					
Costs incentive program		$ 37,485,734	$ 32,454,514	$ 33,104,402	$ 113,935,147
Number of persons employed - minus retained jobs		17483	15138	15654	
Total annual salary cost		$ 865,009,130	$ 882,662,377	$ 900,675,895	$ 2,920,201,154
Total Annual Sales Revenues		$ 1,241,184,641	$ 1,316,166,442	$ 1,394,757,118	$ 4,352,394,846
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	89.5%	$ 1,110,418,165	$ 1,177,500,170	$ 1,247,810,832	$ 3,893,843,139
Tax liability amount		$ 130,766,476	$ 138,666,272	$ 146,946,286	$ 458,551,707
Total tax liability amount - C corporation		$ 15,850,482	$ 16,808,033	$ 17,811,671	$ 55,582,025
Total tax liability amount - non-C corporation		$ 114,915,994	$ 121,858,239	$ 129,134,615	$ 402,969,682
No Incentive status					
Corporate income tax Maine State Level:	8.63%	$ 1,368,440	$ 1,451,109	$ 1,537,757	$ 4,798,633
Corporate income tax US Federal Level:	34.00%	$ 5,389,164	$ 5,714,731	$ 6,055,968	$ 18,897,889
Net profit - no incentive		$ 303,438,445	$ 323,029,900	$ 347,764,705	$ 1,072,561,335
Retained earnings	50%	$ 151,719,223	$ 161,514,950	$ 173,882,352	$ 536,280,668
Dividends payable to Maine residents	67%	$ 101,319,993	$ 107,861,703	$ 116,120,809	$ 358,134,933
Dividends payable to non-residents	33%	$ 50,399,229	$ 53,653,247	$ 57,761,544	$ 178,145,734
Opportunity cost Net income (salary and dividends)		$ 777,711,766	$ 798,057,388	$ 820,402,121	$ 2,641,579,080
Total Annual Sales in the State of Maine	27.09%	$ 336,248,203	$ 356,561,454	$ 377,852,383	$ 1,179,103,331
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 18,493,651	$ 19,610,880	$ 20,781,881	$ 64,850,683
Opportunity cost total sales tax benefits for Maine		$ 18,493,651	$ 19,610,880	$ 20,781,881	$ 64,850,683
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.0%	$ 277,604,541	$ 294,375,042	$ 311,952,708	$ 973,460,785
Local Purchases by local residents from local Maine suppliers	40.0%	$ 311,084,706	$ 319,222,955	$ 328,160,848	$ 1,056,631,632
Benefit of use of local suppliers		$ 588,689,247	$ 613,597,998	$ 640,113,556	$ 2,030,092,417
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	8.63%	$ 1,368,440	$ 1,451,109	$ 1,537,757	$ 4,798,633
Sales Tax revenues	5.50%	$ 18,493,651	$ 19,610,880	$ 20,781,881	$ 64,850,683
Personal income taxes for the State of Maine	6.28%	$ 61,514,499	$ 63,058,474	$ 64,646,039	$ 208,611,030
Residents dividends tax	6.28%	$ 6,360,332	$ 6,770,985	$ 7,289,448	$ 22,481,811
Payroll taxes employer State of Maine	2.04%	$ 17,646,186	$ 18,006,312	$ 18,373,788	$ 59,572,104
Property tax (BETR)		$ 37,485,734	$ 32,454,514	$ 33,104,402	$ 113,935,147
Direct tax benefits for Maine		$ 142,868,842	$ 141,352,274	$ 145,733,316	$ 474,249,407
Admimistrative costs					
Annual Program Evaluation Fee (Consultant)		$ 53,075	$ 34,687	$ 40,164	$ 141,855
Total wage costsadministrative support staff		$ 40,811	$ 40,811	$ 45,368	$ 139,875
Overhead costs (% of total wage bill)	20%	$ 8,162	$ 8,162	$ 9,074	$ 27,975
Total administrative costs		$ 102,048	$ 83,660	$ 94,605	$ 309,704
Opportunity costs of taxes at Federal Level					
Corporate income tax at federal level	34.00%	$ 5,389,164	$ 5,714,731	$ 6,055,968	$ 18,897,889
Personal income tax at federal level	15.53%	$ 152,160,572	$ 155,979,705	$ 159,906,663	$ 516,014,503
Dividends tax at federal level	15.53%	$ 23,558,620	$ 25,079,679	$ 27,000,061	$ 83,272,457
Total opportunity cost federal taxes		$ 181,108,356	$ 186,774,115	$ 192,962,692	$ 618,184,849
Total direct costs		$ 180,456,624	$ 173,890,448	$ 178,932,324	$ 588,494,259
Total indirect costs		$ 1,547,509,369	$ 1,598,429,501	$ 1,653,478,369	$ 5,289,856,345

PTDZ CBA

Year of operation		-3	-2	-1	
Category\Year		2014	2015	2016	TOTAL - Value in 2017 US$
General Information					
Number of active firms in the program (Average over 1 year)		268	268	204	
Number of persons employed		31186	31186	23739	
Total annual salary cost		$ 1,252,342,588	$ 1,277,900,600	$ 1,303,980,204	$ 4,227,807,715
Total Annual Sales Revenues		$ 30,325,161,614	$ 33,719,899,181	$ 27,920,592,470	$ 101,597,976,154
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	81.85%	$ 24,821,209,578	$ 27,599,809,531	$ 22,853,064,596	$ 83,158,160,572
Total tax liability amount		$ 5,503,952,036	$ 6,120,089,650	$ 5,067,527,874	$ 18,439,815,582
Tax liability amount - Tier 1 companies		$ 3,532,387,127	$ 4,224,688,751	$ 3,800,645,905	$ 12,737,577,197
Tax liability amount - Tier 2 companies		$ 1,971,564,908	$ 1,895,400,899	$ 1,266,881,968	$ 5,702,238,385
Tax liability amount - Tier 1 companies C corporation	25.64%	$ 905,740,289	$ 1,083,253,526	$ 974,524,591	$ 3,266,045,435
Tax liability amount - Tier 1 companies non-C corporation	74.36%	$ 2,626,646,838	$ 3,141,435,225	$ 2,826,121,314	$ 9,471,531,762
Tax liability amount - Tier 2 companies C corporation	25.64%	$ 505,529,464	$ 486,000,231	$ 324,841,530	$ 1,462,112,406
Tax liability amount - Tier 2 companies non-C corporation	74.36%	$ 1,466,035,445	$ 1,409,400,669	$ 942,040,438	$ 4,240,125,979
Total tax liability amount - C corporation		$ 1,411,269,753	$ 1,569,253,756	$ 1,299,366,122	$ 4,728,157,842
Total tax liability amount - non-C corporation		$ 4,092,682,283	$ 4,550,835,894	$ 3,768,161,752	$ 13,711,657,741
With Incentive status					
Corporate income tax Maine State Level - Tier 1:	2.23%	$ 20,191,698	$ 24,149,006	$ 21,725,109	$ 72,810,057
Corporate income tax Maine State Level - Tier 2:	0.00%	$ -	$ -	$ -	$ -
Corporate income tax Maine State Level - Total		$ 20,191,698	$ 24,149,006	$ 21,725,109	$ 72,810,057
Corporate income tax US Federal Level:	35.00%	$ 493,944,413	$ 549,238,814	$ 454,778,142	$ 1,654,855,242
Net profit under incentive program		$ 4,989,815,925	$ 5,546,701,830	$ 4,591,024,623	$ 16,712,150,282
Retained earnings	50.00%	$ 2,494,907,962	$ 2,773,350,915	$ 2,295,512,312	$ 8,356,075,141
Dividends payable to Maine residents	65.58%	$ 1,636,203,039	$ 1,818,810,659	$ 1,505,435,983	$ 5,480,056,076
Dividends payable to non-residents	34.42%	$ 858,704,924	$ 954,540,256	$ 790,076,329	$ 2,876,019,065
Benefits					
Additional job creation					
New Jobs Created		3444	4219	3277	
Gross Income Effects		$ 189,196,332	$ 231,762,833	$ 180,017,701	$ 663,555,513
Additional payroll taxes paid by employers at reduced rate	0.41%	$ 771,921	$ 945,592	$ 734,472	$ 2,707,306
Federal level personal income tax paid by employees	15.31%	$ 28,974,637	$ 35,493,521	$ 27,568,968	$ 101,620,787
State level personal income tax paid by employees	6.20%	$ 11,726,570	$ 14,364,882	$ 11,157,669	$ 41,127,806
Net income after personal income taxes for Maine residents		$ 148,495,125	$ 181,904,430	$ 141,291,064	$ 520,806,920
Personal income from employment and dividend					
Total tax liability amount - non-C corporation		$ 4,092,682,283	$ 4,550,835,894	$ 3,768,161,752	$ 13,711,657,741
Gross income effects for Maine residents		$ 1,252,342,588	$ 1,277,900,600	$ 1,303,980,204	$ 4,227,807,715
Total tax liability amount - taxed as PIT		$ 5,345,024,871	$ 5,828,736,494	$ 5,072,141,957	$ 17,939,465,456
State level personal income tax	6.20%	$ 331,289,760	$ 361,270,669	$ 314,376,215	$ 1,111,905,247
Federal level personal income tax	15.31%	$ 818,568,488	$ 892,646,925	$ 776,777,596	$ 2,747,355,057
Net income after personal income tax for Maine residents		$ 4,195,166,624	$ 4,574,818,900	$ 3,980,988,145	$ 14,080,205,152
Net income after dividends tax for Maine residents		$ 1,152,704,756	$ 1,281,351,792	$ 1,060,579,387	$ 3,860,698,550
Total net income benefits Maine residents		$ 5,496,366,505	$ 6,038,075,122	$ 5,182,858,597	$ 18,461,710,623
Total Annual Sales in the State of Maine	32.42%	$ 9,832,884,102	$ 10,933,622,212	$ 9,053,206,487	$ 32,942,977,758
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 540,808,626	$ 601,349,222	$ 497,926,357	$ 1,811,863,777
Total sales tax benefits for Maine		$ 540,808,626	$ 601,349,222	$ 497,926,357	$ 1,811,863,777
Average additional capital expenditures		$ 68,316,349.57	$ 90,103,547.01	$ 138,655,879.49	$ 324,012,548
Average additional exports		$ 17,724,935.90	$ 16,927,521.37	$ 37,516,646.15	$ 78,573,900
Total Capital and Exports benefits for Maine		$ 86,041,285	$ 107,031,068	$ 176,172,526	$ 402,586,448
Indirect goods and services purchased in the State of Maine					
Local Purchases by PTZD corporates from Maine suppliers	25.00%	$ 6,205,302,395	$ 6,899,952,383	$ 5,713,266,149	$ 20,789,540,143
Sales tax revenues (buy side paid by companies)	0.0%	$ -	$ -	$ -	$ -
Local Purchases by local residents from local Maine suppliers	40.00%	$ 2,198,546,602	$ 2,415,230,049	$ 2,073,143,439	$ 7,384,684,249
Benefit of use of local suppliers		$ 8,403,848,996	$ 9,315,182,431	$ 7,786,409,588	$ 28,174,224,392
Tax income revenues for State of Maine					
Corporate income tax Maine State Level - Tier 1:	2.23%	$ 20,191,698	$ 24,149,006	$ 21,725,109	$ 72,810,057
Corporate income tax Maine State Level - Tier 2:	0.00%	$ -	$ -	$ -	$ -
Corporate income tax Maine State Level - Total		$ 20,191,698	$ 24,149,006	$ 21,725,109	$ 72,810,057
Sales Tax revenues		$ 540,808,626	$ 601,349,222	$ 497,926,357	$ 1,811,863,777
Personal income taxes for the State of Maine		$ 343,016,329	$ 375,635,551	$ 325,533,885	$ 1,153,033,053
Residents dividends tax	6.20%	$ 101,413,431	$ 112,731,626	$ 93,308,364	$ 339,659,123
Payroll taxes employer State of Maine	0.41%	$ 5,881,479	$ 6,159,427	$ 6,054,711	$ 19,956,762
Direct tax benefits for Maine		$ 1,011,311,563	$ 1,120,024,832	$ 944,548,425	$ 3,397,322,772
Tax benefits at Federal Level					
Corporate income tax at federal level	35.00%	$ 493,944,413	$ 549,238,814	$ 454,778,142	$ 1,654,855,242
Personal income tax at federal level	15.31%	$ 847,543,125	$ 928,140,446	$ 804,346,564	$ 2,848,975,844
Dividends tax at federal level	15.31%	$ 382,084,852	$ 424,727,241	$ 351,548,232	$ 1,279,698,403
Total other benefits		$ 1,723,572,390	$ 1,902,106,501	$ 1,610,672,937	$ 5,783,529,489
Total Dirct Benefits		$ 1,011,311,563	$ 1,120,024,832	$ 944,548,425	$ 3,397,322,772
Total Indirect Benefits		$ 15,709,829,176	$ 17,362,395,122	$ 14,756,113,647	$ 52,822,050,952
Costs					
Costs incentive program (would have been generated regardless of incentive)					
Number of persons employed - minus retained jobs		22038	20517	15431	
Total annual salary cost		$ 814,072,124	$ 830,685,841	$ 847,638,613	$ 2,748,241,925
Total Annual Sales Revenues		$ 21,429,970,201	$ 22,183,593,454	$ 18,149,487,389	$ 68,322,242,796
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	81.85%	$ 17,540,476,400	$ 18,157,318,643	$ 14,855,394,209	$ 55,921,901,716
Tax liability amount		$ 3,889,493,801	$ 4,026,274,811	$ 3,294,093,180	$ 12,400,341,080
Total tax liability amount - C corporation	25.64%	$ 997,306,103	$ 1,032,378,157	$ 844,639,277	$ 3,179,574,636
Total tax liability amount - non-C corporation	74.36%	$ 2,892,187,698	$ 2,993,896,654	$ 2,449,453,903	$ 9,220,766,444
No Incentive status					
Corporate income tax Maine State Level:	8.92%	$ 88,931,910	$ 92,059,360	$ 75,318,284	$ 283,529,445
Corporate income tax US Federal Level:	35.00%	$ 349,057,136	$ 361,332,354	$ 295,623,747	$ 1,112,851,121
Net profit - no incentive		$ 973,280,707	$ 1,115,862,042	$ 928,424,091	$ 3,331,777,276
Retained earnings	50.00%	$ 486,640,354	$ 557,931,021	$ 464,212,046	$ 1,665,888,638
Dividends payable to Maine residents	65.58%	$ 319,147,014	$ 365,900,645	$ 304,438,148	$ 1,092,518,078
Dividends payable to non-residents	34.42%	$ 167,493,340	$ 192,030,376	$ 159,773,898	$ 573,370,560
Opportunity cost Net income (salary and dividends)		$ -	$ -	$ -	$ -
Total Annual Sales in the State of Maine	32.42%	$ -	$ -	$ -	$ -
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ -	$ -	$ -	$ -
Opportunity cost total sales tax benefits for Maine		$ -	$ -	$ -	$ -
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.00%	$ -	$ -	$ -	$ -
Sales tax revenues (buy side paid by companies)	5.50%	$ -	$ -	$ -	$ -
Local Purchases by local residents from local Maine suppliers	40.00%	$ -	$ -	$ -	$ -
Benefit of use of local suppliers		$ -	$ -	$ -	$ -
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	8.92%	$ 88,931,910	$ 92,059,360	$ 75,318,284	$ 283,529,445
Sales Tax revenues		$ -	$ -	$ -	$ -
Personal income taxes for the State of Maine	6.20%	$ 179,260,563	$ 185,564,581	$ 151,819,498	$ 571,511,933
Residents dividends tax	6.20%	$ -	$ -	$ -	$ -
Payroll taxes employer State of Maine	2.04%	$ -	$ -	$ -	$ -
Direct tax benefits for Maine		$ 268,192,473	$ 277,623,941	$ 227,137,782	$ 855,041,378
Administrative costs					
Annual Program Evaluation Fee (Consultant)		$ 53,075	$ 34,687	$ 40,164	$ 141,855
Total wage costs administrative support staff		$ 174,350	$ 180,350	$ 202,950	$ 613,765
Overhead costs (% of total wage bill)	20.00%	$ 34,870	$ 36,070	$ 40,590	$ 122,753
Total administrative costs		$ 209,220	$ 216,420	$ 243,540	$ 736,518
Opportunity costs of taxes at Federal Level					
Corporate income tax at federal level	35.00%	$ -	$ -	$ -	$ -
Personal income tax at federal level	15.31%	$ -	$ -	$ -	$ -
Dividends tax at federal level	15.31%	$ -	$ -	$ -	$ -
Total opportunity cost federal taxes		$ -	$ -	$ -	$ -
Total direct costs		$ 268,401,693	$ 277,840,361	$ 227,381,322	$ 855,777,896
Total indirect costs		$ -	$ -	$ -	$ -

DL CBA

Year of operation		-3	-2	-1	
Category\Year		2014	2015	2016	TOTAL - Value in 2017 US$
General Information					
Number of "in progress" DL in the program		17	12	13	
Number of persons employed		246	173	188	
Total annual salary cost		$ 15,437,691	$ 11,115,137	$ 12,282,227	$ 43,021,834.23
Total Annual Sales Revenues		$ 22,351,414	$ 15,777,468	$ 17,092,258	$ 61,216,084.67
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	100.00%	$ 22,351,414	$ 15,777,468	$ 17,092,258	$ 61,216,085
Total Loan Amount		$ 5,222,637	$ 2,761,809	$ 3,523,396	$ 12,790,315
Financing costs	2.74%	$ 143,205	$ 75,729	$ 96,612	$ 350,710
Tax liability amount		$ -	$ -	$ -	$ -
Total tax liability amount - C corporation	20.83%	0	0	0	$ -
Total tax liability amount - non-C corporation	79.17%	0	0	0	$ -
With Incentive status					
Corporate income tax Maine State Level:	0.00%	$ -	$ -	$ -	$ -
Corporate income tax US Federal Level:	0.00%	$ -	$ -	$ -	$ -
Net profit under incentive program		$ -	$ -	$ -	$ -
Retained earnings	50%	$ -	$ -	$ -	$ -
Dividends payable to Maine residents	74%	$ -	$ -	$ -	$ -
Dividends payable to non-residents	26%	$ -	$ -	$ -	$ -
Benefits					
Additional job creation					
New Jobs Created		76	54	58	
Gross Income Effects		$ 4,780,164	$ 3,441,718	$ 3,803,099	$ 13,321,386
Additional payroll taxes paid by employers	2.04%	$ 97,515	$ 70,211	$ 77,583	$ 271,756
Federal level personal income tax paid by employees	15.99%	$ 764,356	$ 550,336	$ 608,122	$ 2,130,112
State level personal income tax paid by employees	6.47%	$ 309,112	$ 222,560	$ 245,929	$ 861,434
Net income after personal income taxes for Maine residents		$ 3,706,697	$ 2,668,822	$ 2,949,048	$ 10,329,841
Personal income from employment and dividend					
Gross income effects for Maine residents		$ 15,437,691	$ 11,115,137	$ 12,282,227	$ 43,021,834
Total tax liability amount - non-C corporation		$ -	$ -	$ -	$ -
Total tax liability amount - taxed as PIT		$ 15,437,691	$ 11,115,137	$ 12,282,227	$ 43,021,834
State level personal income tax	6.47%	$ 998,285	$ 718,765	$ 794,236	$ 2,782,027
Federal level personal income tax	15.99%	$ 2,468,512	$ 1,777,329	$ 1,963,948	$ 6,879,262
Net income after personal income tax for Maine residents		$ 11,970,893	$ 8,619,043	$ 9,524,043	$ 33,360,545
Net income after dividends tax for Maine residents		$ -	$ -	$ -	$ -
Total net income benefits Maine residents		$ 15,677,590	$ 11,287,865	$ 12,473,091	$ 43,690,386
Total Annual Sales in the State of Maine	28.67%	$ 6,407,405	$ 4,522,874	$ 4,899,780	$ 17,548,611
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 352,407	$ 248,758	$ 269,488	$ 965,174
Total sales tax benefits for Maine		$ 352,407	$ 248,758	$ 269,488	$ 965,174
Average additional capital expenditures		5,222,637	2,761,809	3,523,396	$ 12,790,315
Total Capital and Exports benefits for Maine		$ 5,222,637	$ 2,761,809	$ 3,523,396	$ 12,790,315
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.0%	$ 5,587,853	$ 3,944,367	$ 4,273,064	$ 15,304,021
Sales Tax Maine (sales side - paid by companies)	5.5%	$ 307,332	$ 216,940	$ 235,019	$ 841,721
Local Purchases by local residents from local Maine suppliers	40.0%	$ 6,271,036	$ 4,515,146	$ 4,989,236	$ 17,476,155
Benefit of use of local suppliers		$ 12,166,221	$ 8,676,453	$ 9,497,319	$ 33,621,897
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	0.00%	$ -	$ -	$ -	$ -
Sales Tax revenues		$ 659,739	$ 465,698	$ 504,506	$ 1,806,895
Personal income taxes for the State of Maine		$ 1,307,397	$ 941,326	$ 1,040,165	$ 3,643,460
Residents dividends tax	6.47%	$ -	$ -	$ -	$ -
Payroll taxes employer State of Maine	2.04%	$ 412,444	$ 296,960	$ 328,141	$ 1,149,402
Direct tax benefits for Maine		$ 2,379,580	$ 1,703,984	$ 1,872,812	$ 6,599,757
Tax benefits at Federal Level					
Corporate income tax at federal level	0.00%	$ -	$ -	$ -	$ -
Personal income tax at federal level	15.99%	$ 3,232,868.40	$ 2,327,665.25	$ 2,572,070.10	$ 9,009,374
Dividends tax at federal level	15.00%	$ -	$ -	$ -	$ -
Total other benefits		$ 3,232,868	$ 2,327,665	$ 2,572,070	$ 9,009,374
Total Direct Benefits		$ 2,379,580	$ 1,703,984	$ 1,872,812	$ 6,599,757
Total Indirect Benefits		$ 36,299,317	$ 25,053,792	$ 28,065,876	$ 99,111,973
Costs					
Cost of soft loan program		$ 170,153.51	$ 89,979.74	$ 114,792.24	$ 416,708
Cost of non-repayable grant		$ 213,000.00	$ 385,000.00	$ 413,000.00	$ 1,104,687
Costs incentive program		$ 383,154	$ 474,980	$ 527,792	$ 1,521,395
Number of persons employed - minus retained jobs		164	116	125	
Total annual salary cost		$ 10,301,241	$ 7,416,893	$ 8,195,667	$ 28,707,550
Total Annual Sales Revenues		$ 14,914,620	$ 10,527,967	$ 11,405,298	$ 40,848,184
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	100.00%	$ 14,914,620	$ 10,527,967	$ 11,405,298	$ 40,848,184
Tax liability amount		$ -	$ -	$ -	$ -
Total tax liability amount - C corporation	21%	$ -	$ -	$ -	$ -
Total tax liability amount - non-C corporation	79%	$ -	$ -	$ -	$ -
No Incentive status					
Corporate income tax MaineState Level:	0.00%	$ -	$ -	$ -	$ -
Corporate income tax US Federal Level:	0.00%	$ -	$ -	$ -	$ -
Net profit - no incentive		$ -	$ -	$ -	$ -
Retained earnings	50%	$ -	$ -	$ -	$ -
Dividends payable to Maine residents	74%	$ -	$ -	$ -	$ -
Dividends payable to non-residents	26%	$ -	$ -	$ -	$ -
Opportunity cost Net income (salary and dividends)		$ 7,987,921	$ 5,751,303	$ 6,355,190	$ 22,260,778
Total Annual Sales in the State of Maine	28.67%	$ 4,275,524	$ 3,018,017	$ 3,269,519	$ 11,709,813
Sales Tax Maine (sales side - paid by consumers) 2013-2014 new rate	5.50%	$ 235,154	$ 165,991	$ 179,824	$ 644,040
Opportunity cost total sales tax benefits for Maine		$ 235,154	$ 165,991	$ 179,824	$ 644,040
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.0%	$ 3,728,655	$ 2,631,992	$ 2,851,324	$ 10,212,046
Sales tax revenues (buy side paid by companies)	5.5%	$ 205,076	$ 144,760	$ 156,823	$ 561,663
Local Purchases by local residents from local Maine suppliers	40.0%	$ 3,195,168	$ 2,300,521	$ 2,542,076	$ 8,904,311
Benefit of use of local suppliers		$ 7,128,899	$ 5,077,273	$ 5,550,223	$ 19,678,020
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	0.00%	$ -	$ -	$ -	$ -
Personal income taxes for non-C Corp	6.47%	$ -	$ -	$ -	$ -
Sales Tax revenues		$ 440,230	$ 310,750	$ 336,646	$ 1,205,702
Personal income taxes for the State of Maine	6.47%	$ 666,134	$ 479,617	$ 529,977	$ 1,856,387
Residents dividends tax	6.47%	$ -	$ -	$ -	$ -
Payroll taxes employer State of Maine	2.04%	$ 210,145	$ 151,305	$ 167,192	$ 585,634
Direct tax benefits for Maine		$ 1,316,510	$ 941,672	$ 1,033,815	$ 3,647,723
Admimistrative and Evaluation costs					
Annual Program Evaluation Fee (Consultant)		$ 53,075	$ 34,687	$ 40,164	
Total wage costs administrative support staff		$ 190,000	$ 249,705	$ 296,950	$ 807,046.01
Overhead costs (% of total wage bill)	41%	$ 77,253	$ 101,528	$ 120,738	$ 328,140
Total administrative costs		$ 320,327	$ 385,920	$ 457,852	$ 1,277,041
Opportunity costs of taxes at Federal Level					
Corporate income tax at federal level	0.00%	$ -	$ -	$ -	$ -
Personal income tax for non-C Corp at federal level	15.99%	$ -	$ -	$ -	$ -
Personal income tax at federal level	15.99%	$ 1,647,185	$ 1,185,973	$ 1,310,501	$ 4,590,385
Dividends tax at federal level	15.00%	$ -	$ -	$ -	$ -
Total opportunity cost federal taxes		$ 1,647,185	$ 1,185,973	$ 1,310,501	$ 4,590,385
Total direct costs		$ 2,019,991	$ 1,802,572	$ 2,019,459	$ 6,446,159
Total indirect costs		$ 16,764,006	$ 12,014,549	$ 13,215,914	$ 46,529,183

CLI & ERLP CBA

Year of operation		-3	-2	-1	
Category\Year		2014	2015	2016	TOTAL - Value in 2017 US$
General Information					
Number of active projects in the program (Average over 1 year)		275	271	267	
Number of persons employed		7021	6919	6817	
Total annual salary cost		$ 375,851,683	$ 370,384,749	$ 364,917,815	$ 1,226,608,196
Total Annual Sales Revenues		$ 465,021,037	$ 458,257,095	$ 451,493,152	$ 1,517,616,235
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	77.69%	$ 361,271,215	$ 356,016,361	$ 350,761,507	$ 1,179,024,210
Total Finance costs based on outstanding leveraged debt	6.00%	$ 2,820,000	$ 4,320,000	$ 4,020,000	$ 12,248,303
Total Commercial Loan Insurance Amount		$ 26,000,000	$ 42,000,000	$ 37,000,000	$ 115,253,250
Total Cost for the Loan Insurance per company per year x total # of companies	$ 1,235	$ 339,509	$ 334,571	$ 329,633	$ 1,108,004
Total FAME Direct Loans amount		$ 4,000,000	$ 5,000,000	$ 5,100,000	$ 15,498,000
Total Cost for the FAME Direct Loans	$ 9,909	$ 218,000	$ 198,182	$ 297,273	$ 782,994
Tax liability amount		$ 100,372,313	$ 97,387,981	$ 96,084,740	$ 324,452,725
Total tax liability amount - C corporation	13%	$ 12,546,539	$ 12,173,498	$ 12,010,593	$ 40,556,591
Total tax liability amount - non-C corporation	88%	$ 87,825,774	$ 85,214,483	$ 84,074,148	$ 283,896,134
With Incentive status					
Corporate income tax Maine State Level*:	8.13%	$ 1,019,470	$ 989,158	$ 975,922	$ 3,295,429
Corporate income tax US Federal Level*:	34.37%	$ 4,311,662	$ 4,183,465	$ 4,127,482	$ 13,937,413
Net profit under incentive program		$ 7,215,408	$ 7,000,875	$ 6,907,189	$ 23,323,749
Retained earnings	50%	$ 3,607,704	$ 3,500,437	$ 3,453,595	$ 11,661,875
Dividends payable to Maine residents	84%	$ 3,014,178	$ 2,924,559	$ 2,885,423	$ 9,743,308
Dividends payable to non-residents	16%	$ 593,525	$ 575,878	$ 568,172	$ 1,918,566
Benefits					
Additional job creation					
New Jobs Created		463	467	566	
Gross Income Effects		$ 24,798,389	$ 24,982,384	$ 30,287,562	$ 88,052,253
Additional payroll taxes paid by employers at reduced rate	2.04%	$ 505,887	$ 509,641	$ 617,866	$ 1,796,266
Federal level personal income tax paid by employees	15.19%	$ 3,767,273	$ 3,795,224	$ 4,601,166	$ 13,376,548
State level personal income tax paid by employees	6.17%	$ 1,529,468	$ 1,540,816	$ 1,868,019	$ 5,430,721
Net income after personal income taxes for Maine residents		$ 19,501,648	$ 19,646,343	$ 23,818,377	$ 69,244,984
Personal income from employment and dividend					
Employment benefit					
Total tax liability amount - non-C corporation		$ 87,825,774	$ 85,214,483	$ 84,074,148	$ 283,896,134
Gross income effects for Maine residents		$ 375,851,683	$ 370,384,749	$ 364,917,815	$ 1,226,608,196
Total tax liability amount - taxed as PIT		$ 463,677,456	$ 455,599,232	$ 448,991,963	$ 1,510,504,330
Personal income tax for State of Maine	6.17%	$ 28,597,824	$ 28,099,591	$ 27,692,080	$ 93,162,039
Federal level personal income tax	15.19%	$ 70,440,035	$ 69,212,823	$ 68,209,073	$ 229,469,810
Net income after personal income tax for Maine residents		$ 364,639,597	$ 358,286,818	$ 353,090,810	$ 1,187,872,481
Net income after dividends tax for Maine residents		$ 2,280,208	$ 2,212,411	$ 2,182,805	$ 7,370,753
Total net income benefits Maine residents		$ 386,421,453	$ 380,145,572	$ 379,091,992	$ 1,264,488,219
Total Annual Sales in the State of Maine	69.09%	$ 321,300,473	$ 316,627,011	$ 311,953,550	$ 1,048,577,968
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 17,671,526	$ 17,414,486	$ 17,157,445	$ 57,671,788
Total sales tax benefits for Maine		$ 17,671,526	$ 17,414,486	$ 17,157,445	$ 57,671,788
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.0%	$ 90,317,804	$ 89,004,090	$ 87,690,377	$ 294,756,052
Sales Tax Maine (sales side - paid by companies) 2013-2014 new rate	5.50%	$ 4,967,479	$ 4,895,225	$ 4,822,971	$ 178,458,795
Local Purchases by local residents from local Maine suppliers	40.0%	$ 154,568,581	$ 152,058,224	$ 151,636,797	$ 505,795,288
Benefit of use of local suppliers		$ 244,886,385	$ 241,062,319	$ 239,327,173	$ 800,551,340
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	8.13%	$ 1,019,470	$ 989,158	$ 975,922	$ 3,295,429
Sales Tax revenues		$ 22,639,005	$ 22,309,711	$ 21,980,416	$ 73,883,371
Personal income taxes for the State of Maine		$ 30,127,292	$ 29,640,407	$ 29,560,099	$ 98,592,760
Residents dividends tax	6.17%	$ 185,903	$ 180,373	$ 177,962	$ 600,929
Payroll taxes employer State of Maine	2.04%	$ 8,173,261	$ 8,065,490	$ 8,062,190	$ 26,819,073
Direct tax benefits for Maine		$ 62,144,932	$ 61,185,141	$ 60,756,588	$ 203,191,562
Tax benefits at Federal Level					
Corporate income tax at federal level	34.37%	$ 4,311,662	$ 4,183,465	$ 4,127,482	$ 13,937,413
Personal income tax at federal level	15.19%	$ 74,207,308	$ 73,008,048	$ 72,810,239	$ 242,846,358
Dividends tax at federal level	15.19%	$ 548,068	$ 531,773	$ 524,656	$ 1,771,626
Total other benefits		$ 79,067,037	$ 77,723,285	$ 77,462,377	$ 258,555,397
Total Direct Benefits		$ 62,144,932	$ 61,185,141	$ 60,756,588	$ 203,191,562
Total Indirect Benefits		$ 710,374,875	$ 698,931,176	$ 695,881,542	$ 2,323,594,956
Costs					
Default rate and associates costs of the insurance	1.27%	$ 330,200	$ 533,400	$ 469,900	$ 1,463,716
Costs incentive program		$ 330,200	$ 533,400	$ 469,900	$ 1,463,716
Number of persons employed - minus retained jobs		4655	4140	3992	
Total annual salary cost		$ 249,208,651	$ 221,602,958	$ 213,679,094	$ 757,170,475
Total Annual Sales Revenues (Pro Rata number of employees)		$ 308,332,437.51	$ 274,177,400	$ 264,373,631	$ 936,806,234
Total Cost of Sales (including manufacturing, R&D and marketing, etc.)	77.69%	$ 239,541,064	$ 213,006,283	$ 205,389,811	$ 727,797,453
Financing costs	6.75%	$ 3,172,500	$ 4,860,000	$ 4,522,500	$ 13,779,340
Tax liability amount		$ 65,618,873	$ 56,311,118	$ 54,461,320	$ 195,229,441
Total tax liability amount - C corporation	12.50%	$ 8,202,359	$ 7,038,890	$ 6,807,665	$ 24,403,680
Total tax liability amount - non-C corporation	87.50%	$ 57,416,514	$ 49,272,228	$ 47,653,655	$ 170,825,761
No Incentive status					
Corporate income tax MaineState Level*:	8.13%	$ 666,483	$ 571,945	$ 553,157	$ 1,982,923
Corporate income tax US Federal Level*:	34.37%	$ 2,818,769	$ 2,418,939	$ 2,339,478	$ 8,386,409
Net profit - no incentive		$ 62,133,621	$ 94,397,097	$ 93,192,105	$ 273,851,942
Retained earnings	50%	$ 31,066,810.32	$ 47,198,548	$ 46,596,053	$ 136,925,971
Dividends payable to Maine residents	84%	$ 25,955,818.94	$ 39,433,626	$ 38,930,250	$ 114,399,440
Dividends payable to non-residents	16%	$ 5,110,991.37	$ 7,764,922	$ 7,665,802	$ 22,526,531
Opportunity cost Net income (salary and dividends)		$ 221,935,462	$ 213,703,934	$ 206,969,170	$ 709,844,255
Total Annual Sales in the State of Maine	69.09%	$ 213,038,444	$ 189,439,448	$ 182,665,656	$ 647,274,558
Sales Tax Maine (sales side - paid by consumers)	5.50%	$ 11,717,114	$ 10,419,170	$ 10,046,611	$ 35,600,100.67
Opportunity cost total sales tax benefits for Maine		$ 11,717,114	$ 10,419,170	$ 10,046,611	$ 35,600,101
Indirect goods and services purchased in the State of Maine					
Local Purchases by corporates from local Maine suppliers	25.0%	$ 59,885,266	$ 53,251,571	$ 51,347,453	$ 181,949,363
Sales Tax Maine (sales side - paid by companies)	5.50%	$ 3,293,690	$ 2,928,836	$ 2,824,110	$ 10,007,215
Local Purchases by local residents from local Maine suppliers	40.0%	$ 88,774,185	$ 85,481,574	$ 82,787,668	$ 283,937,702
Benefit of use of local suppliers		$ 151,953,140	$ 141,661,981	$ 136,959,231	$ 475,894,280
Tax income revenues for State of Maine					
Corporate income tax for the State of Maine	8.13%	$ 666,483	$ 571,945	$ 553,157	$ 1,982,923
Personal income taxes for the State of Maine	6.17%	$ 18,911,449	$ 16,706,529	$ 16,117,989	$ 57,235,202.59
Sales Tax revenues	34.37%	$ 11,717,114	$ 10,419,170	$ 10,046,611	$ 35,600,101
Residents dividends tax for the State of Maine	6.17%	$ 1,600,854	$ 2,432,113	$ 2,401,067	$ 7,055,713
Payroll taxes employer State of Maine	2.04%	$ 5,083,856	$ 4,520,700	$ 4,359,054	$ 15,446,278
Direct tax benefits for Maine		$ 37,979,757	$ 34,650,457	$ 33,477,877	$ 117,320,216.76
Admimistrative costs					
Annual Program Evaluation Fee (Consultant)		$ 53,075	$ 34,687	$ 40,164	$ 141,855
Total wage costs administrative support staff		$ 1,190,919	$ 1,260,833	$ 1,352,285	$ 4,188,605
Overhead costs	14.99%	$ 178,552	$ 189,035	$ 202,746	$ 627,990
Other FAME administrative costs		$ 999,110	$ 977,781	$ 1,091,251	$ 3,380,413
Total administrative costs		$ 2,421,657	$ 2,462,336	$ 2,686,446	$ 8,338,864
Opportunity costs of taxes at Federal Level					
Corporate income tax at federal level	34.37%	$ 2,818,769	$ 2,418,939	$ 2,339,478	$ 8,386,409
Personal income tax for non-C Corp at federal level	15.19%	$ 8,722,488	$ 7,485,241	$ 7,239,354	$ 25,951,170
Personal income tax at federal level	15.19%	$ 37,858,787	$ 33,665,040	$ 32,461,278	$ 115,026,327
Dividends tax at federal level	15.19%	$ 4,719,546	$ 7,170,216	$ 7,078,687	$ 20,801,249
Total opportunity cost federal taxes		$ 54,119,591	$ 50,739,435	$ 49,118,797	$ 170,165,155
Total Direct Costs		$ 40,731,614	$ 37,646,193	$ 36,634,223	$ 127,122,796.60
Total Indirect Costs		$ 428,008,193	$ 406,105,350	$ 393,047,197	$ 1,355,903,690

Appendix I – Benchmark 1 – State Investment Trends

Too determine Maine's general competitiveness and participation in attracting Foreign Direct Investment (FDI) we have reviewed historic data from the fDiMarkets.com database, which tracks new (i.e. Greenfield) investment projects as well as expansion (i.e. Brownfield) FDI projects. While this is important in evaluating the overall activity coming to the state, it does not include mergers and acquisitions (M&As) or other equity-based or non-equity investments.

The data presented includes FDI projects that have either been announced or opened by the investing company. This benchmark focuses not only on the actual number of investment projects that have been announced for and realized in US states, but also lays out the economic benefits these investment projects have generated in terms of capital expenditures and employment opportunities. As a result, this benchmark examines three key indicators for investment projects:

- Number of investment projects attracted to a particular location;
- Capital volume attracted to this location; and
- New jobs created in this location.

A total of 47,315 investment projects registered in the US from 2007-2017, of which 2,292 (or 4.8%) have located in New England. Out of these, 132 have chosen to locate in Maine.

The more than 47,000 investment projects in the US represent a capital investment of almost $1.8 trillion. The investment projects generated $63 billion and $6 billion of capital volume in New England and Maine, respectively. Over 4 million new jobs have been created as a direct result of these investment projects throughout the US. The New England investment projects resulted in 145,463 new jobs while the investment projects in Maine created over 11,000 new jobs.

Maine outperforms both the US and New England for both average capital volume and number of newly created jobs per investment project. An average investment project in Maine equaled a capital volume of $45.8 million and created 87 new jobs. For the US and New England, these numbers equal average capital investments of $38 million and $27.3 million and 85 and 63 new jobs, respectively.

Headline Investment Figures for the US, New England and Maine (2007-2017)

	U.S.	New England	Maine
No. of Investment Projects	47,315	2,292	132
Total Capital Investment	$1,796 billion	$62.6 billion	$6.0 billion
Average Capital Volume per Investment Project	$38 million	$27.3 million	$45.8 million
Total Job Creation	4,042,011	145,463	11,542
Average Job Creation per Investment Project	85	63	87

Source: fDiMarkets.com database

A ranking of the 50 states (and Washington DC) with regards to attracting investment into the state showing the top and bottommost five performers - as well as states that perform most similarly to Maine – is shown below. Not surprisingly, economically powerful states such as California, Texas, New

York, Florida and North Carolina make up the top five. California alone has attracted more than 10% of all inward investment activity. However, in terms of economic benefits, Texas has attracted the largest share of capital ($186.5 billion or 10.4%) and the greater number of jobs (356,012 or 7.5%).

On the other side of the spectrum, small-sized states in terms of population such as Rhode Island, Montana, Vermont, Wyoming, and Alaska only attracted a limited number of state investment (50-110 or 0.11-0.23% each). Apart from Wyoming, which attracted disproportionately more capital investment vis-à-vis number of investment projects, most of the investment in these states generated a proportionate amount of economic benefits.

Maine just performs above these bottommost five states, ranking 44th, between New Hampshire (43rd) and Hawaii (45th). Looking at Maine's peers and neighboring states, it appears Vermont, Rhode Island and New Hampshire perform more or less similarly to Maine.

Absolute State Investment Performance (2007-2017)

Rank	State	No. of Investment Projects		Total Capital Investment		Total Job Creation	
		Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
1	California	4,889	10.33%	$114.5 bln.	6.37%	301,990	7.47%
2	Texas	4,094	8.65%	$186.5 bln.	10.38%	356,012	8.81%
3	New York	3,290	6.95%	$96.1 bln.	5.35%	198,839	4.92%
4	Florida	2,730	5.77%	$64.9 bln.	3.61%	222,618	5.51%
5	North Carolina	1,900	4.02%	$59.5 bln.	3.31%	181,846	4.50%
42	Delaware	167	0.35%	$7.0 bln.	0.39%	14,047	2.88%
43	New Hampshire	154	0.33%	$5.1 bln.	0.28%	9,087	4.00%
44	**Maine**	**132**	**0.28%**	**$6.0 bln.**	**0.34%**	**11,542**	**3.94%**
45	Hawaii	129	0.27%	$7.3 bln.	0.40%	12,101	2.25%
46	South Dakota	128	0.27%	$3.8 bln.	0.21%	8,385	2.60%
47	Rhode Island	110	0.23%	$2.8 bln.	0.15%	7,652	0.19%
48	Montana	74	0.16%	$4.2 bln.	0.23%	3,860	0.10%
49	Vermont	72	0.15%	$3.6 bln.	0.20%	3,853	0.10%
50	Wyoming	58	0.12%	$10.5 bln.	0.59%	3,264	0.08%
51	Alaska	54	0.11%	$4.5 bln.	0.25%	4,004	0.10%

Source: fDiMarkets.com database

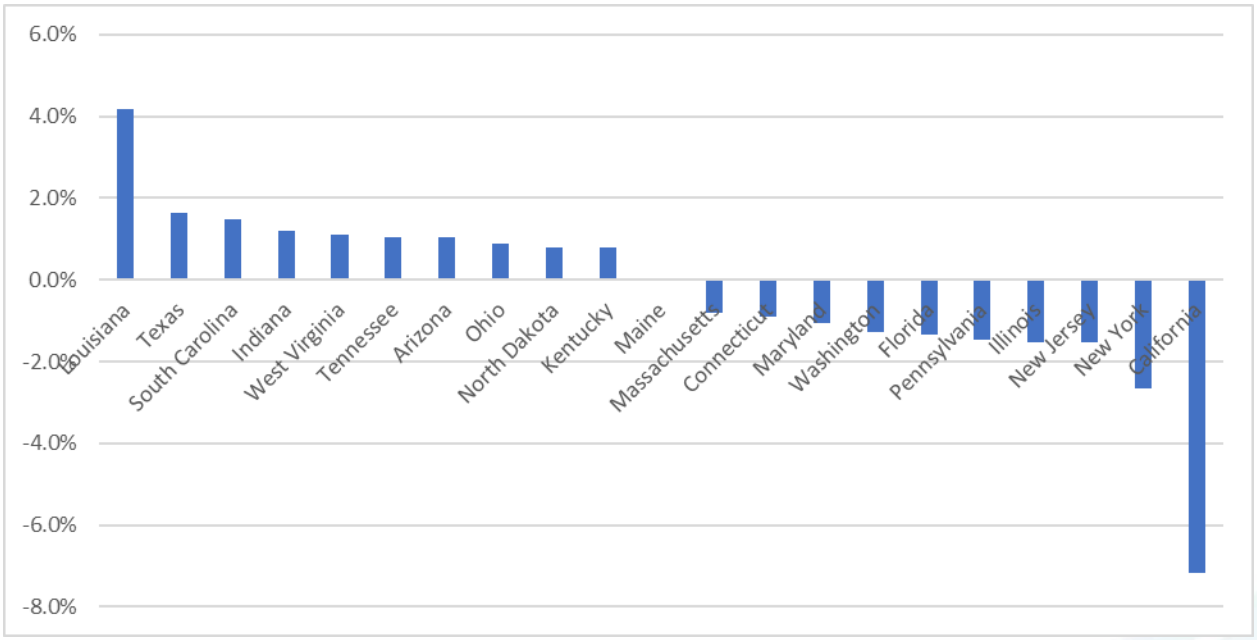
Interpreting the absolute state investment trends does not reveal much on the actual state investment performance as there is a direct relationship between the size of a state's economy and the number of attracted investment projects. Therefore, correcting the state investment performance with the actual size of the economy measured by its Gross State Product (GSP) provides a better understanding of the actual state investment performance of Maine and other states.

Comparing the share of a state's contribution to the national Gross Domestic Product (GDP) with the national share of state investment (i.e. in terms of number of projects, capital volume and job creation) results in a more comprehensive analysis of a state's investment performance. A positive differential indicates the state has attracted disproportionately more investment, capital or new jobs and thus

performed better than "expected" based on its share of the national GDP. On the contrary, a negative differential indicates the state has attracted disproportionately fewer investment projects, capital or new jobs compared with its share of the national GDP.

The figure below summarizes the ten top and bottommost performers, as well as Maine's performance for number of attracted investment projects. It demonstrates Maine almost exactly at its relative importance to the US economy, as the difference between its share of the national GDP and its share of national attracted investment projects is +0.1%. States with very large positive differentials – which thus attracted disproportionately more investment than its contribution to the US economy – include a wide range of eastern and southeastern states known for their strong attractiveness for large investors: Texas, Louisiana, South Carolina, and Indiana. On the other hand, states that attracted disproportionately fewer investment projects than their contribution to the national economy include California, New York, New Jersey, Illinois, Pennsylvania, Florida, Washington, Maryland, and the New England states of Connecticut and Massachusetts.

Relative State Investment Performance – Number of Investment Projects (2007-2017)

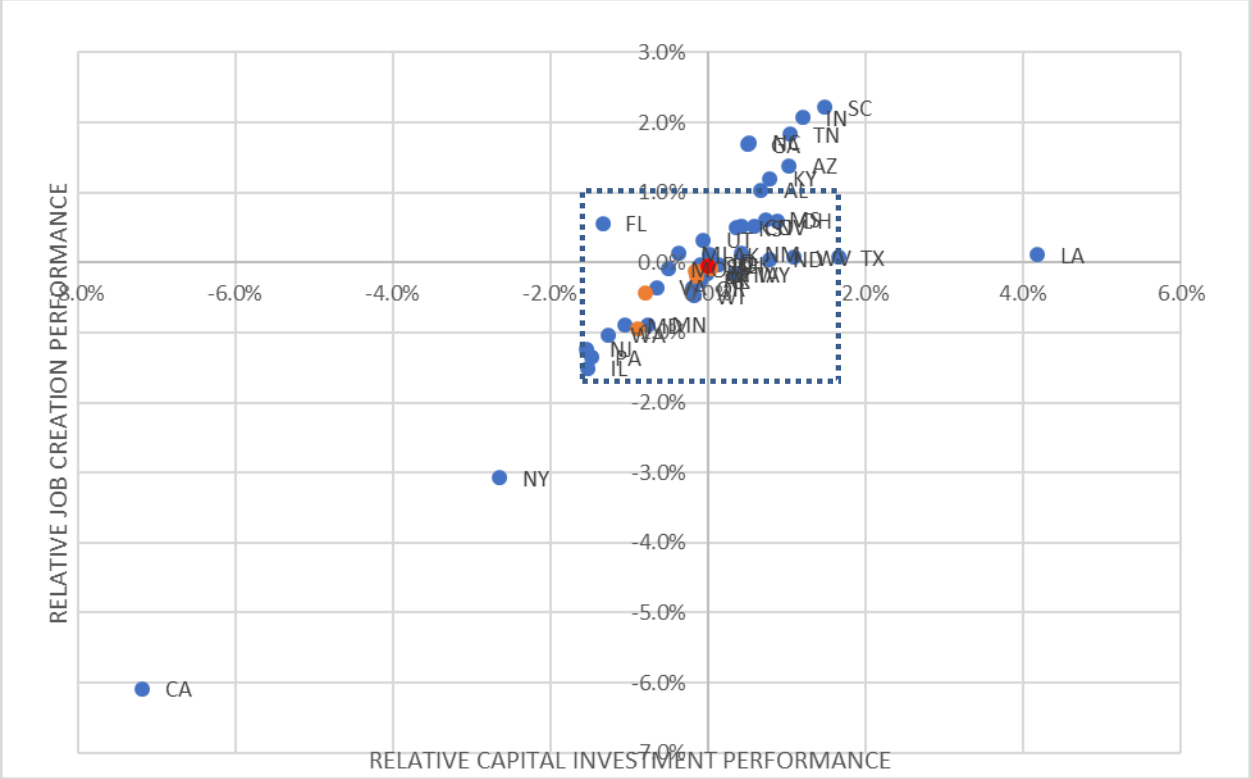


Source: fDiMarkets.com database and Bureau of Economic Analysis

The same analysis can be used to examine the benefits of state investment as compared to the relative size of the state's economy. The figure below plots the relative performance for capital investment and job creation using a similar calculation. Nominally the most competitive states will be located in the top right corner, as this indicates a state has attracted disproportionately more capital and new jobs compared to its share of the national GDP. Likewise, the bottom left corner indicates a state's investment performance for both capital and jobs is relatively poorer compared to its contribution to the national economy.

Numerous states that attracted disproportionately more state investment also generated disproportionately more benefits from this state investment. South Carolina, Indiana, and Tennessee score best. On the other side, California and New York generated disproportionately fewer benefits from their state investment compared to their contribution to the national economy. Texas and Louisiana are notable exceptions as they outperformed expectations for capital investment but remained relatively as expected for job creation. This is likely an artifact of the kinds of projects attracted.

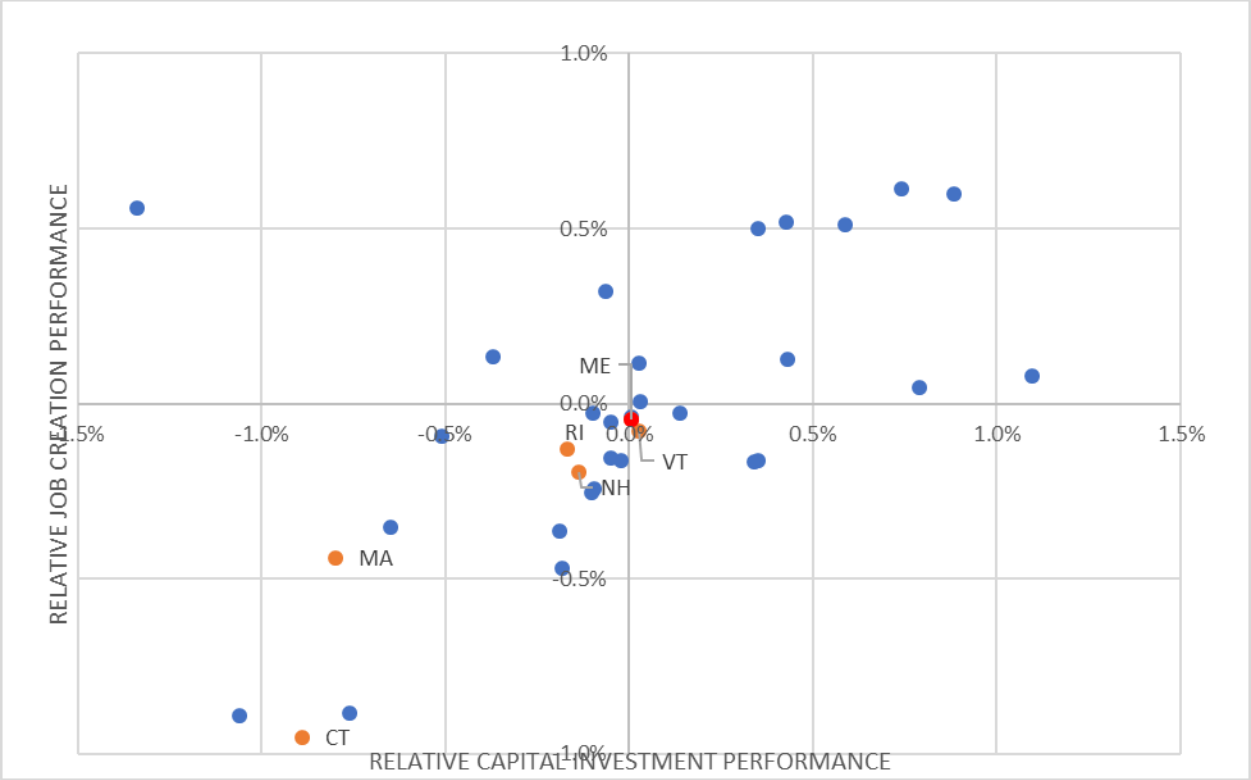
Relative State Investment Performance – Capital Investment and Job Creation (2007-2017)



Source: fDiMarkets.com database and Bureau of Economic Analysis

Since the performance of a large number of states, including Maine and other New England states, is clustered between a difference of +1.0% and -1.0%, this section of the figure has been enlarged in the figure on the next page. New England states Connecticut, Massachusetts, New Hampshire, and Rhode Island all display negative percentages for both indicators. While Maine generally outperforms its New England neighbors, it can be concluded Maine performs on par with its contribution to the US economy vis-à-vis its state investment performance.

Relative State Investment Performance of +1.0% to -1.0% – Capital Investment and Job Creation (2007-2017)



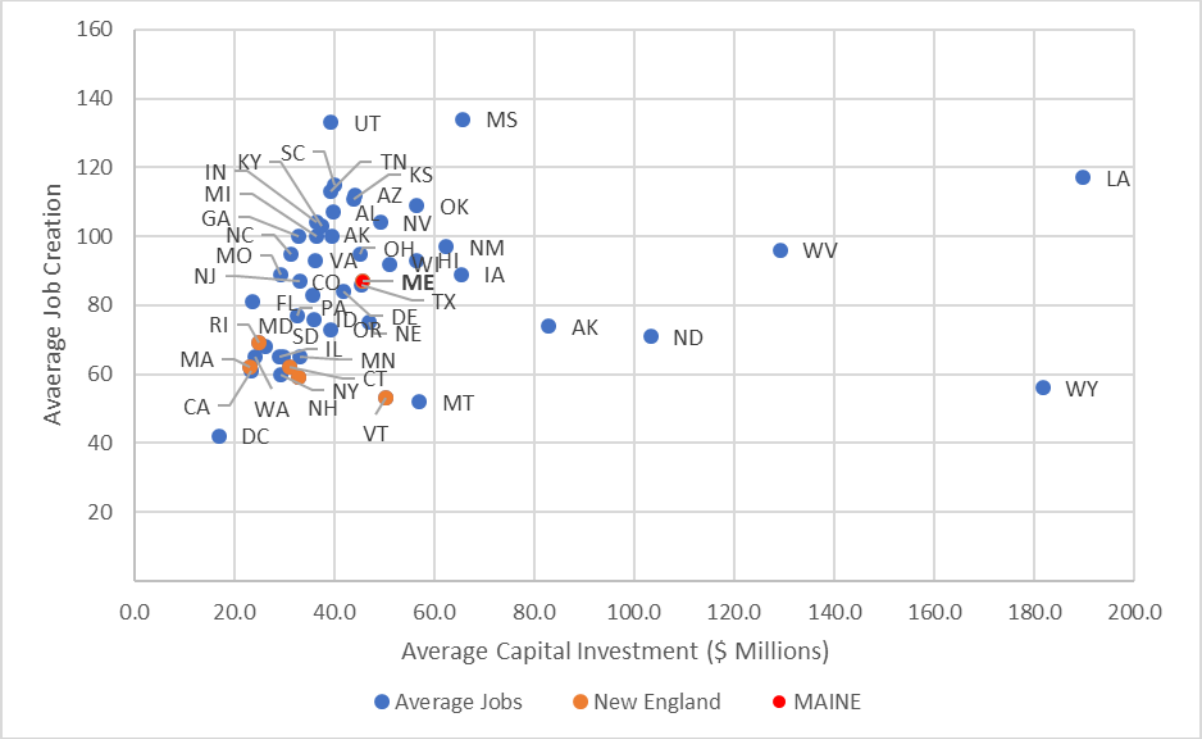
Source: fDiMarkets.com database and Bureau of Economic Analysis

Apart from the relative state investment performance, analyzing investment project averages and comparing these across states reveals which states have performed well. The figure below provides an overview of the average project size in terms of capital volume and job creation. The same principle applies: states located in the top right corner perform relatively well (i.e. high average capital volumes and newly created jobs) while states in the bottom left corner have a relatively weak performance (i.e. low average capital volumes and newly created jobs).

An average investment project in the US equals a capital volume of $38.0 million and 85 newly created jobs. Positive outliers include Louisiana (average of $189.8 capital investment with 117 new jobs), West Virginia ($129.2 million with 96 jobs), and Mississippi ($65.7 million with 134 jobs). On the other side, Washington DC scores weakest, with an average investment project equals $17.0 million and creates 42 new jobs.

Maine outperforms the US and the rest of the New England states, with an average investment project capital volume of $45.8 million accompanied by 87 new jobs. The other New England states perform slightly better than Washington DC but have relatively low average investment project values.

Average State Investment Performance - Capital Investment and Job Creation (2007-2017)



Source: fDiMarkets.com database

The table below lists states that perform similar to Maine.

Selected Average State Investment Performance - Capital Investment and Job Creation (2007-2015)

	Average Capital Investment per Investment Project	Average Job Creation per Investment Project
Vermont	$50.3 million	53
Nevada	$59.2 million	104
Nebraska	$47 million	75
Maine	**$45.8 million**	**87**
Texas	$45.5 million	86
Ohio	$45.3 million	95
Arizona	$44.1 million	112
Kansas	$44 million	111
Delaware	$42 million	84
South Carolina	$40.2 million	115
Alabama	$39.7 million	107
US Average	*$38.0 million*	*85*

Source: fDiMarkets.com database

The specific performance of the New England states are shown below. The region has attracted a total of 2,292 investment projects, equaling nearly $63 billion and creating over 145,000 new jobs.

Massachusetts has attracted by far the largest number of investment projects (1,464 or 64%), followed by Connecticut (360 or 16%). New Hampshire, Maine and Rhode Island attracted more or less similar

numbers of investment projects, each representing 4.8% to 6.7% of the New England total. Vermont follows on a distance. The same patterns apply for capital investment and job creation.

Just as on a national level, comparing the shares of the states of the New England GDP to the shares of their state investment reveals the actual performance. Maine's GDP equaled $59.2 billion or 6% of the New England GDP and garnered roughly the same proportion of investment projects. However, Maine generated disproportionately larger benefits, attracting almost 4% more capital investment (difference between 9.65% and 5.98%) and 2% more new jobs (difference between 7.93% and 5.98%).

New England State Foreign Investment Performance (2007-2017)

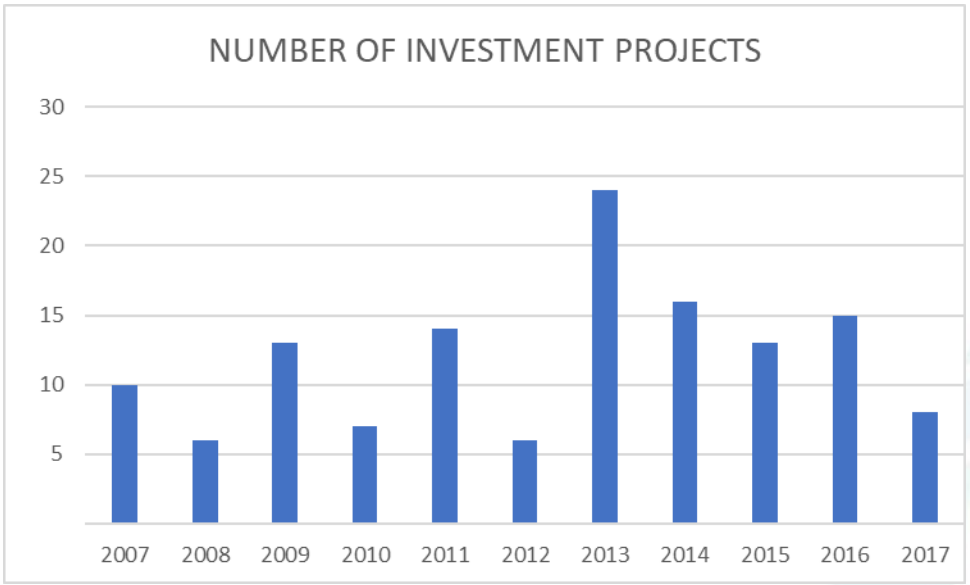
State	Gross Domestic Product*		No. of Investment Projects		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Connecticut	$259.9 bln.	26.23%	360	15.71%	$11.2 bln.	17.87%	22,525	15.49%
Maine	**$59.2 bln.**	**5.98%**	**132**	**5.76%**	**$6.0 bln.**	**9.65%**	**11,542**	**7.93%**
Massachusetts	$505.8 bln.	51.05%	1,464	63.87%	$33.9 bln.	54.18%	90,804	62.42%
New Hampshire	$77.2 bln.	7.79%	154	6.72%	$5.1 bln.	8.11%	9,087	6.25%
Rhode Island	$57.5 bln.	5.80%	110	4.80%	$2.8 bln.	4.40%	7,652	5.26%
Vermont	$31.1 bln.	3.14%	72	3.14%	$3.6 bln.	5.79%	3,853	2.65%
New England	*$990.7 bln.*	*100.00%*	2,292	100.00%	*$62.6 bln.*	*100.00%*	*145,463*	*100.00%*

* Gross State Product in 2016; derived from Bureau of Economic Analysis

Source: fDiMarkets.com database

2013 was the most successful year for Maine over the period in terms of new investment projects. So far, eight investment projects have announced for Maine in 2017. 2008 and 2012 were the most modest years for Maine with only 6 announced projects.

Maine State Investment Trends – Number of Investment Projects (2007-2017)

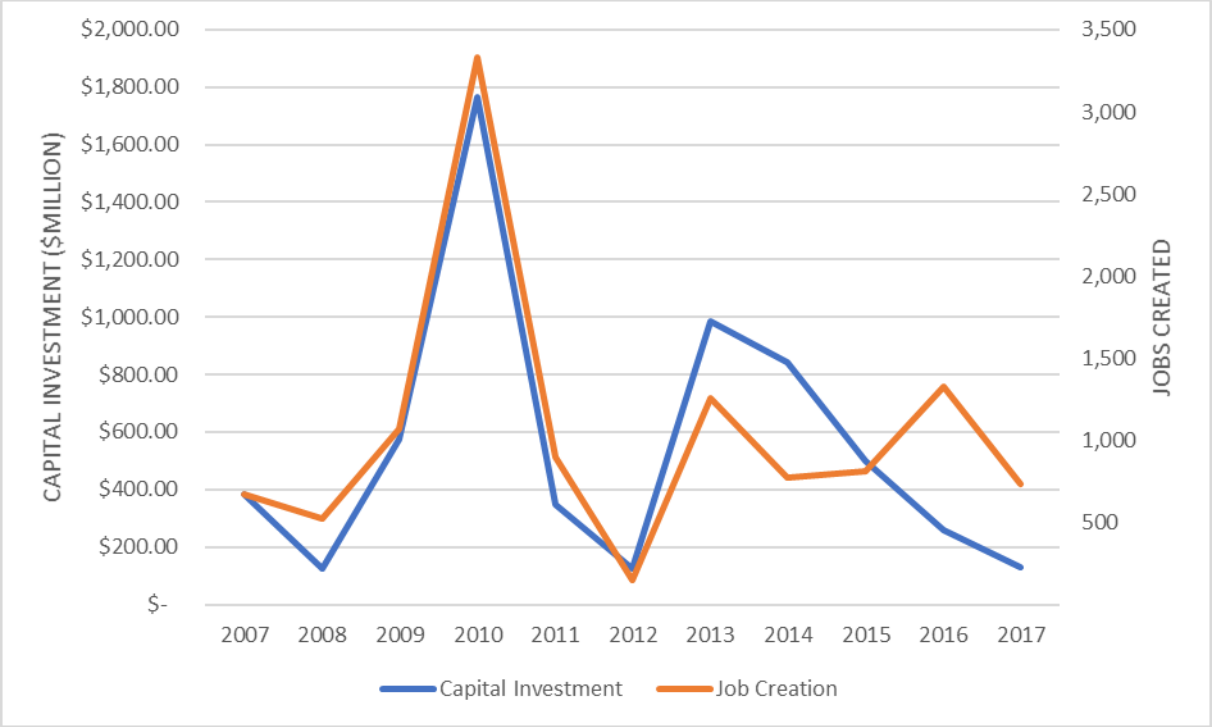


Source: fDiMarkets.com database

Despite the fact that 2010 was not a year in which the number of new investment projects peaked, both types of economic benefits peaked in this year, with capital investment adding up to nearly $1.8 billion with over 3,000 new jobs created. The low number of investment projects for 2010 implies very capital- and labor-intensive investment projects were announced in this year.

The figure below shows furthermore the annual capital volume and newly created jobs of investment projects run largely in parallel.

Maine State Investment Trends – Capital Investment and Job Creation (2007-2017)



Source: fDiMarkets.com database

Most investment projects that have been realized in Maine are in communications (22 or 16.67%), followed by business services; financial services; software & IT services; healthcare; and alternative/renewable energy. The table shows different numbers for the capital investment and jobs created in Maine as result of these investment projects. Combined, 14 alternative & renewable energy projects and transportation investment projects account for nearly $3.5 billion dollars (more than 57%). Clearly, this is related to the capital-intensive nature of these industries. Most jobs have been created by investment projects in transportation (3,157 or 27%), communications (1,411 or 12%), and financial services (1,318 or 111%).

Maine State Investment Trends – Industry (2007-2017)

Industry	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Communications	22	16.67%	$1,564.80	25.90%	1,411	12.22%

Industry	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Business Services	16	12.12%	$66.70	1.10%	660	5.72%
Financial Services	16	12.12%	$154.30	2.55%	1,318	11.42%
Software & IT services	13	9.85%	$60.90	1.01%	1,325	11.48%
Healthcare	12	9.09%	$49.00	0.81%	453	3.92%
Alternative/Renewable energy	10	7.58%	$2,002.20	33.15%	341	2.95%
Consumer Products	5	3.79%	$59.90	0.99%	1,068	9.25%
Aerospace	4	3.03%	$35.10	0.58%	417	3.61%
Industrial Machinery, Equipment & Tools	4	3.03%	$16.10	0.27%	74	0.64%
Plastics	4	3.03%	$66.80	1.11%	316	2.74%
Transportation	4	3.03%	$1,471.30	24.36%	3,157	27.35%
Medical Devices	3	2.27%	$32.40	0.54%	133	1.15%
Wood Products	3	2.27%	$65.10	1.08%	158	1.37%
Beverages	2	1.52%	$110.00	1.82%	120	1.04%
Chemicals	2	1.52%	$7.00	0.12%	12	0.10%
Electronic Components	2	1.52%	$41.00	0.68%	128	1.11%
Other Industries	10	7.58%	$238.10	3.94%	451	3.91%
Total	**132**	**100.00%**	**$6,040.70**	**100.00%**	**11,542**	**100.00%**

Source: fDiMarkets.com database

Comparing the industry-specific statistics of investment into the state of Maine with the national average annual growth rates per industry reveals whether Maine has actually attracted investment in the fastest growing industries. Several figures below show the GDP growth rates with Maine's relative number of state investment, total capital investment and total job creation, respectively.

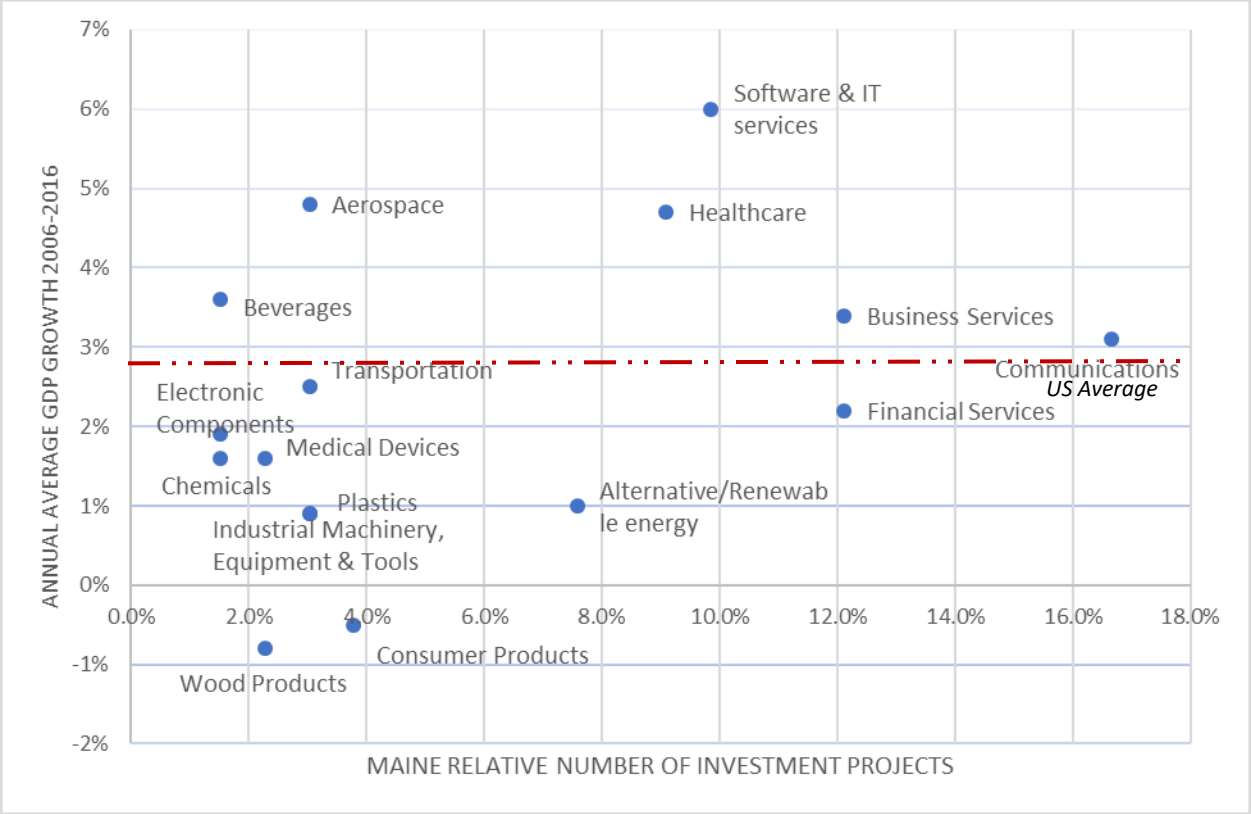
Software and IT is the fastest growing industry in which Maine has attracted investment. This industry has experienced an average national annual GDP growth of 6.0% compared to an average US growth rate of 2.9%. The graph below shows the number of projects in Maine, graphed according to their relative activity along with their contribution to the National GDP. Any industry positioned above the red bar (2.9%) has enjoyed an above national average growth rate over the last ten years and would thus constitute a potential target industry for attracting investment. Vice versa, industries that have performed below US average or industries that have even contracted (indicated by a negative growth rate) are no strategic target industries. This seems to be the case for wood products, which has contracted with an average .8% over the last ten years.

In terms of number of investment projects that Maine has attracted, it appears a number of industries in which Maine has been successful are also industries that have grown above the US average. This is the case for communications (22 projects or 16.7% of total Maine investment while the average national annual GDP growth rate was 3.1%), business services (16 projects or 12% against an annual GDP growth

rate of 3.4%), and healthcare (12 projects or 9.1% against an annual GDP growth rate of 4.7%), and alternative & renewable energy.

Industries which have experienced an above-average GDP growth over the last ten years and in which Maine has attracted a reasonable number of investment projects include software & IT services as well as business services.

Maine State Investment Trends – Relative Number of Investment Projects (2007-2017) and US Average Annual GDP Growth per Industry (2006-2016)

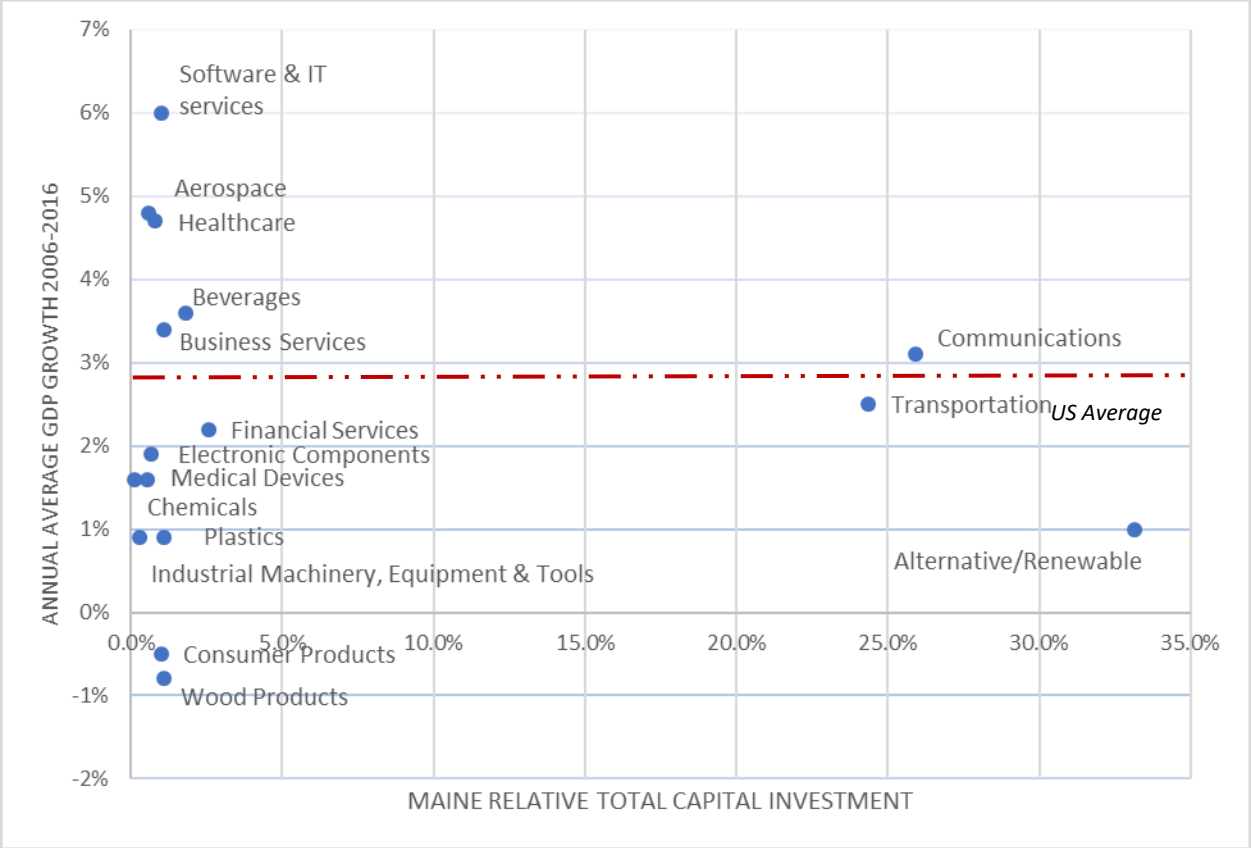


Source: fDiMarkets.com database and authors' calculations based on data derived from Bureau of Economic Analysis

When a similar analysis is conducted for the capital investment that has been attracted to Maine by the 132 investment projects – a total of over $6 billion – it becomes clear that over 33% (or $2 billion) has been attracted by the alternative & renewable energy industry. This is despite the fact that this industry has experienced an annual GDP growth which is less than the average annual national GDP growth. This is true for the communications industry to a lesser degree. Transportation has also generated a considerable amount of capital investment (24% or $1.47 billion).

Industries that have grown strong across the US over the last ten years in which Maine may have potential to tap into capital investment include aerospace, software & it services, healthcare and medical devices and business services.

Maine State Investment Trends – Relative Total Capital Investment (2007-2017) and US Average Annual GDP Growth per Industry (2006-2016)

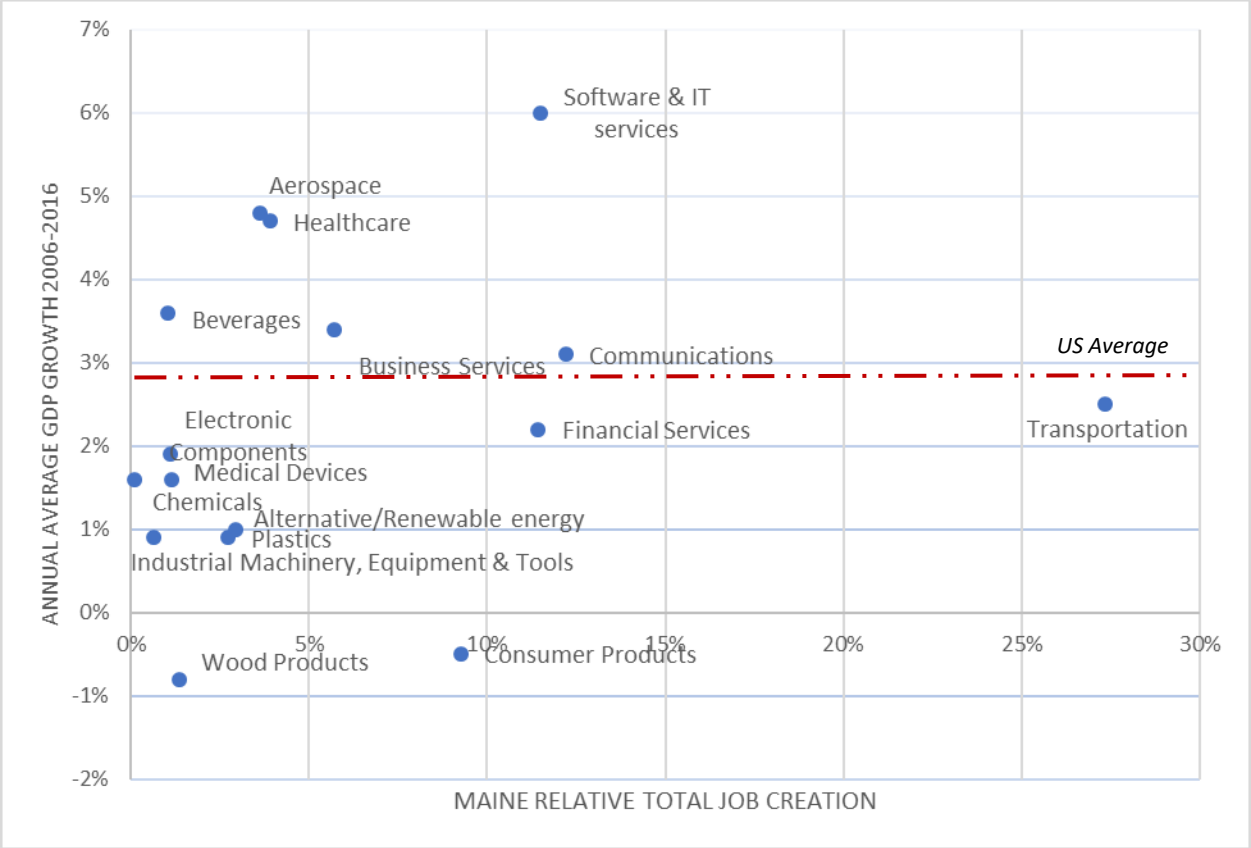


Source: fDiMarkets.com database and authors' calculations based on data derived from Bureau of Economic Analysis

Finally, when looking at the same comparison for total jobs created by the 132 projects (i.e. 11,542), it seems software & IT services (now 1,325 or 11.5%) is a prime industry from which Maine has already attracted a considerable number of new jobs.

Growing industries which offer potential to Maine to attract new jobs include aerospace (currently only 417 or 3.6%), and healthcare (now only 453 or 3.9%).

Maine State Investment Trends – Relative Total Job Creation (2007-2017) and US Average Annual GDP Growth per Industry (2006-2016)



Source: fDiMarkets.com database and authors' calculations based on data derived from Bureau of Economic Analysis

Similar to industry trends, the trends for Maine investment projects in the table show that investment projects in a limited number of business activities have generated the largest economic benefits. This is the case for logistics, distribution & transportation ($1.6 billion or 26.6% of the capital volume and 3,179 new jobs 27.5% of the total job creation) and electricity ($1.7 billion or 27.7% of the total capital investment). Other business activities that contribute relatively strongly to generating new jobs include customer contact centers (2,974 new jobs or 26% of total job creation).

Maine State Investment Trends – Business Activity (2007-2017)

Business Activity	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Business Services	38	28.79%	$234.30	3.88%	1180	10.22%
Manufacturing	24	18.18%	$419.10	6.94%	1,221	10.58%
ICT & Internet Infrastructure	18	13.64%	$1,540.80	25.51%	1073	9.30%
Sales, Marketing & Support	15	11.36%	$377.50	6.25%	561	4.86%
Customer Contact Centre	12	9.09%	$84.10	1.39%	2974	25.77%
Electricity	7	5.30%	$1,671.20	27.67%	228	1.98%
Headquarters	5	3.79%	$35.60	0.59%	678	5.87%
Logistics, Distribution & Transportation	5	3.79%	$1,605.60	26.58%	3179	27.54%
Design, Development & Testing	2	1.52%	$7.10	0.12%	30	0.26%
Maintenance & Servicing	2	1.52%	$18.00	0.30%	140	1.21%
Education & Training	1	0.76%	$7.70	0.13%	84	0.73%
Recycling	1	0.76%	$27.50	0.46%	52	0.45%
Shared Services Centre	1	0.76%	$0.50	0.01%	17	0.15%
Technical Support Centre	1	0.76%	$11.70	0.19%	125	1.08%
Total	**132**	**100.00%**	**$6,040.70**	**100.00%**	**11,542**	**100.00%**

Source: fDiMarkets.com database

The table below reveals that largest source of international investment into Maine is from Canada, followed by the UK and Germany (Domestic investment sources will be covered momentarily). In terms of benefits, Spain is strongly represented as a source country due to a $1.4 billion investment made by Bilbao-based Iberdrola. Aside from this, investment from Canada generated disproportionately higher volumes of capital (21.26%) and new jobs (15.85%).

Maine State Investment Trends – Source Country (2007-2017)

Source Country	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Canada	9	29.03%	$465.30	21.26%	835	15.85%
UK	6	19.35%	37.4	1.71%	343	6.51%
Germany	5	16.13%	$63.00	2.88%	389	7.38%
Switzerland	3	9.68%	$132.50	6.05%	178	3.38%
Sweden	2	6.45%	$32.00	1.46%	130	2.47%
Australia	1	3.23%	$27.50	1.26%	52	0.99%
Finland	1	3.23%	$14.80	0.68%	267	5.07%
France	1	3.23%	$4.00	0.18%	15	0.28%

Source Country	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Iceland	1	3.23%	$8.60	0.39%	30	0.57%
Norway	1	3.23%	$3.60	0.16%	30	0.57%
Spain	1	3.23%	$1,400.00	63.96%	3000	56.94%
Total	**31**	**100.00%**	**$2,188.70**	**100.00%**	**5,269**	**100.00%**

Source: fDiMarkets.com database

Looking at projects that came from within the US, most state investment into Maine is sourced from Massachusetts (23 investment projects or 22.8% of the total number of investment projects), followed by North Carolina (14 investment projects or 13.9%). Other New England states include Connecticut (4 or 5.6%) and New Hampshire (7 or 6.9%). Investment projects from North Carolina represented the largest shares of capital investment ($1.14 billion or 29.7%), followed closely by Massachusetts, who also created the highest number of jobs (over 2,200 or 36%).

Maine State Investment Trends – Source State (2007-2017)

Source State	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Massachusetts	23	22.77%	$1,113.00	28.89%	2,249	35.85%
North Carolina	14	13.86%	$1,145.40	29.74%	1043	16.63%
New York	13	12.87%	$556.00	14.43%	809	12.90%
New Hampshire	7	6.93%	$220.80	5.73%	197	3.14%
California	5	4.95%	$52.10	1.35%	234	3.73%
Wisconsin	5	4.95%	$51.50	1.34%	219	3.49%
Connecticut	4	3.96%	$9.60	0.25%	360	5.74%
Texas	4	3.96%	$17.00	0.44%	74	1.18%
Georgia	3	2.97%	$40.70	1.06%	112	1.79%
Arizona	2	1.98%	$6.20	0.16%	297	4.73%
Indiana	2	1.98%	$11.80	0.31%	31	0.49%
Missouri	2	1.98%	$425.70	11.05%	64	1.02%
Nevada	2	1.98%	$14.20	0.37%	40	0.64%
Ohio	2	1.98%	$21.50	0.56%	150	2.39%
Other States	13	12.87%	$166.50	4.32%	394	6.28%
Total	**101**	**100.00%**	**$3,852.00**	**100.00%**	**6,273**	**100.00%**

Source: fDiMarkets.com database

The location has been fully revealed or established for 89 out of the 132 investment projects in Maine. Portland has attracted by far the largest share of state investment with 25 investment projects (nearly 20%). Auburn has attracted six investment projects (4.6%) that have generated almost 900 new jobs (7.6%). Oakfield has attracted the largest share of capital investment: $525 million has been invested in Oakfield through two investment projects, only creating 82 new jobs (0.7%). Bangor has also secured a considerable share of the total capital investment ($167 million or 2.8%) while Belfast has attracted a relatively large number of new jobs (792 or 6.9%). The table below provides an overview of destination cities that attracted two or more investment projects.

Maine State Investment Trends – Destination City (2007-2015)

Destination City	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Portland	25	18.94%	$348.00	5.76%	711	6.16%
Auburn	6	4.55%	$62.00	1.03%	882	7.64%
Lewiston	5	3.79%	$59.40	0.98%	608	5.27%
Scarborough	5	3.79%	$26.00	0.43%	288	2.50%
Bangor	4	3.03%	$166.90	2.76%	545	4.72%
Belfast	3	2.27%	$24.10	0.40%	550	4.77%
Biddeford	3	2.27%	$10.90	0.18%	64	0.55%
Brunswick	3	2.27%	$43.40	0.72%	792	6.86%
Westbrook	3	2.27%	$15.60	0.26%	64	0.55%
Augusta	2	1.52%	$101.20	1.68%	100	0.87%
Fort Kent	2	1.52%	$4.80	0.08%	357	3.09%
Gorham	2	1.52%	$11.80	0.20%	31	0.27%
Oakfield	2	1.52%	$524.50	8.68%	82	0.71%
Other Cities	24	18.18%	$494.80	8.19%	1486	12.87%
Not Specified	43	32.58%	$4,147.30	68.66%	4,323	37.45%
Total	**132**	**100.00%**	**$6,040.70**	**100.00%**	**11,542**	**100.00%**

Source: fDiMarkets.com database

Finally, the table below reveals Maine's largest investors across the state. Large capital investors include First Wind Holdings, Inc. (five investment projects adding up to nearly $900 million), FairPoint Communications (twelve investment projects adding up to $1 billion) and Verizon Communications (four investment projects adding up to $360 million). Wayfair (two projects adding 950 jobs), Athena Health (three investment projects creating 584 new jobs), and Toronto-Dominion Bank (three investment projects creating 574 new jobs) are among the most labor-intensive investors.

Maine State Investment Trends – Significant Investors (2007-2017)

Investor	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	**Rel.**	**Abs.**	**Rel.**	**Abs.**	**Rel.**
FairPoint Communications	12	9.09%	$1,084.80	17.96%	756	6.55%
First Wind Holdings, Inc.	5	3.79%	$853.60	14.13%	151	1.31%
Verizon Communications	4	3.03%	$361.60	5.99%	252	2.18%
Athenahealth	3	2.27%	$30.10	0.50%	584	5.06%
ConvenientMD	3	2.27%	$8.40	0.14%	90	0.78%
Toronto-Dominion Bank (TD)	3	2.27%	$34.30	0.57%	574	4.97%
Aspen Dental	2	1.52%	$5.60	0.09%	60	0.52%
Barclays Bank	2	1.52%	$6.40	0.11%	250	2.17%
Deep Down	2	1.52%	$7.30	0.12%	34	0.29%
KAR Holdings	2	1.52%	$11.80	0.20%	31	0.27%
Molnlycke Health Care	2	1.52%	$32.00	0.53%	130	1.13%
Mortgage Network	2	1.52%	$21.60	0.36%	74	0.64%

Investor	No. of Investment Projects		Total Capital Investment ($million)		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Nestle	2	1.52%	$110.00	1.82%	120	1.04%
S.C. Johnson & Son	2	1.52%	$19.10	0.32%	108	0.94%
Wayfair (CSN Stores)	2	1.52%	$38.20	0.63%	950	8.23%
Amerco	1	0.76%	$8.50	0.14%	25	0.22%
America Online (AOL)	1	0.76%	$0.50	0.01%	17	0.15%
Ameridial	1	0.76%	$1.40	0.02%	90	0.78%
Arete Rehabilitation	1	0.76%	$2.80	0.05%	30	0.26%
Arrium (OneSteel)	1	0.76%	$27.50	0.46%	52	0.45%
AT&T	1	0.76%	$4.00	0.07%	2	0.02%
Atol Avion	1	0.76%	$14.80	0.25%	267	2.31%
Brady Risk Management	1	0.76%	$7.80	0.13%	61	0.53%
Burns & McDonnell	1	0.76%	$5.70	0.09%	15	0.13%
Carbonite	1	0.76%	$7.60	0.13%	150	1.30%
Caring Companion Home Care	1	0.76%	$2.80	0.05%	30	0.26%
Other Companies	73	55.30%	$3,332.50	55.17%	6,639	57.52%
Total	**132**	**100.00%**	**$6,040.70**	**100.00%**	**11,542**	**100.00%**

Source: fDiMarkets.com database

Appendix J – Benchmark 2 - Business Environment Competitiveness

A proper evaluation of Maine's incentive, credit, and other economic development tools must begin with an understanding of the State's natural advantages and disadvantages for attracting investment. Companies making expansion and relocation decisions typically go through a site selection process similar what is demonstrated on the image below. This process begins with the company identifying their business opportunities, constraints and needs for the new facility, and then progresses through an evaluation of location options. This evaluation process continues to narrow the list of options until the company prepares to negotiate with the last (and best-fit) handful of communities and sites remaining on the list.

This process usually starts with a regional, national, or even international long list of location options. Metropolitan areas are usually the units of geography being evaluated at this point, not towns or sites. Once an appropriate MSA is selected, the process advances to selecting a town and a site.

In the site selection process, three or four locations usually emerge from the screening model as the clear leaders. Local economic development agencies in those locations are typically contacted at this point. This then gives them the opportunity to present incentives, specific communities and sites within the broader region. It is important to note that the economic development agencies and incentive programs are not considered until this step and are rarely drivers of a project. Still, at the end of a site selection process, incentives can be what separates a project win or loss.

As with previous evaluation rounds, the Maine Competitive Analysis compares the Portland, Bangor, and Lewiston Auburn MSAs with 22 other MSAs with similar attributes likely to be considered when making a location decision.

Overall Findings

The findings from the competitive analysis model indicate that Portland is the most competitive location among the 3 Maine MSAs evaluated, achieving an overall rank of 11 among 25 MSAs. The other two Maine locations perform negatively, with Bangor MSA ranked 24th and Lewiston-Auburn MSA ranked 25th. Among the various evaluation categories, statewide weaknesses in Population and Demographics, Transportation and Market Access, and Tax Regime hamper the competitiveness of Portland, Bangor, and Lewiston-Auburn. A small population with stagnant (and sometimes negative) growth is a serious disadvantage to labor force availability and area market potential.

The Maine MSAs do have competitive wage rates (meaning low salary costs), which can be attractive to companies looking for skilled but affordable labor. Furthermore, Portland in particular ranks well in educational attainment, making it the most competitive among Maine locations for the knowledge-based economy.

Below is a chart describing the advantages and disadvantages of each factor for the three Maine MSAs.

	Advantage	Disadvantage
Population and Demographics		
Portland ME – Ranked 14 (T)[28]		• Average projected population growth • Projected loss of working age population
Lewiston ME – Ranked 18 (T)		• Smallest MSA in population included in the screening model • Mere 1.1% projected population growth to 2022 • Projected loss of working age population
Bangor ME – Ranked 18 (T)		• Second smallest MSA in population included in the screening model • Very low projected population growth of 1.3% to 2022 • Projected loss of working age population
Household Statistics		
Portland ME – Ranked 6 (T)	• Favorably low percentage of renter occupied housing units • Average housing unit growth • Strong median home value, household income, and disposable income	• High vacant housing rate • Relatively low owner occupied housing rate
Lewiston ME – Ranked 24 (T)	• Lowest vacant housing rate of the Maine MSAs (9.42%)	• Higher percentage of renter occupied units, lower percentage of owner occupied housing • Low housing unit growth • Low median home value, household income and disposable income

[28] T indicates a tie in ranking

	Advantage	Disadvantage
Bangor ME – Ranked 24 (T)	• Favorable (low) rate of renter occupied housing units	• Low median home value, household income and disposable income • High vacant housing rate • Low owner occupied housing rate
Labor Force Availability		
Portland ME – Ranked 25	• 3.4% drop in unemployment between 2012 and 2017	• Small labor force compared to other candidates • Relatively slow labor force growth between 2012 and 2017 (though some candidates experienced negative growth) • Tight labor market due to low unemployment rate
Lewiston ME – Ranked 11	• 4.6% drop in unemployment between 2012 and 2017	• Stagnant labor force growth between 2012 and 2017 • Smallest labor force of all candidates • Tight labor market due to low unemployment rate
Bangor ME – Ranked 16 (T)	• 3.9% drop in unemployment between 2012 and 2017	• Negative labor force growth between 2012 and 2017 (-1.26%) • Second smallest labor force of all the candidates • Tight labor market due to low unemployment rate
Industry-Specific Employment		
Portland ME – NOT RANKED	• Strengths: Retail trade, information, finance/insurance/real estate	• Weaknesses: Manufacturing, service industries
Lewiston ME - NOT RANKED	• Strengths: Manufacturing, retail trade	• Weaknesses: Wholesale trade, service industries
Bangor ME – NOT RANKED	• Strength: Service industries	• Weaknesses: Manufacturing, wholesale trade, information, finance/insurance/real estate
Occupation-Specific Employment		
Portland ME – NOT RANKED	• Strengths: Healthcare support functions	• Weaknesses: Production, computer/mathematical, transportation/material moving

	Advantage	Disadvantage
Lewiston ME - NOT RANKED	• Strengths: Healthcare support functions, office/administrative, production, transportation/material moving	• Weaknesses: Business/financial operations, computer/mathematical
Bangor ME – NOT RANKED	• Strength: healthcare support functions	• Weaknesses: Business/financial operations, computer/mathematical, office/administrative, production, transportation/material moving
Occupation-Specific Salaries		
Portland ME – Ranked 6 (T)	• Salaries in Portland are not the lowest but are still competitive, especially for: Business/financial operations, production, and transportation/material moving	• Companies within the Portland area need to offer higher salaries to get and keep qualified employees, especially given Portland's proximity to Boston
Lewiston ME – Ranked 2	• Overall 2nd lowest salaries of all the competitors	• This is great for companies but harder for employees • A site selector must match the lower salaries with a lower cost of living (Lewiston-Auburn is affordable so it is not as hindered by low salaries)
Bangor ME – Ranked 1	• Overall lowest salaries of all the competitors	• This is great for companies but harder for employees • A site selector must match the lower salaries with a lower cost of living (Bangor has an average cost of living compared to the selected peer group)
Education		
Portland ME – Ranked 5	• High percentage of people who graduated high school • Better than average higher education rates	• Average attainment at the graduate/professional school degree level
Lewiston ME – Ranked 25		• Lewiston continues to struggle with education at all levels, including having a significant high school drop-out rate
Bangor ME – Ranked 22	• Average high school dropout rate	• Very low education rates • Surprisingly low higher education rates given that Orono is home to University of Maine
Transportation & Market Access		

	Advantage	Disadvantage
Portland ME – Ranked 14 (T)	• Households that can be accessed within a 4-hour drive have a high median household income • Very close to a medium sized airport • Stable household growth rate	• Lower (but not the lowest) population and household access within 4-hour drive • Long drive to nearest "Large" airport • Low access to interstates
Lewiston ME – Ranked 21 (T)	• Households that can be access within a 4-hour drive have a high median household income • Stable household growth rate	• Low population and household access within 4-hour drive • Long drive to nearest "Large" airport • Low access to interstates
Bangor ME – Ranked 21 (T)	• Households that can be access within a 4-hour drive have a high median household income • Very close to a small airport	• Lowest population and household access within 4 hours drive of all the candidates • Low access to interstates • Long drive to nearest "Large" airport • Limited direct flight options out of a small airport
Tax Regime		
Portland ME – Ranked 23 (T)	• Average sales tax rate	• Ranks very poorly for state corporate tax climate score (41st) • 2nd highest state corporate income tax rate behind Pennsylvania • Highest property tax as percent of income
Lewiston ME – Ranked 23 (T)		
Bangor ME – Ranked 23 (T)		
Climate and Natural Hazards		
Portland ME – Ranked 4	• Average number of days with precipitation • Average rainfall indicates good crop/plant growing environment • Few annual days with thunderstorms • Very slight risk of tornadoes	• The area still gets a significant amount of snow which is especially negative for transportation/material moving

	Advantage	Disadvantage
Lewiston ME – Ranked 16 (T)	• Few number of days with thunderstorms • Very slight risk of tornadoes	• The area still gets a significant amount of snow
Bangor ME – Ranked 16 (T)	• Few annual days with thunderstorms • Very slight risk of tornadoes	• Most snowfall of all the candidates
Crime and Quality of Life		
Portland ME – Ranked 10 (T)	• Very low violent crime rate • Lowest property crime rates of the Maine candidates • Good access to physicians and best of the Maine candidates • Reasonable commute time to work	• Higher than US average cost of living index (and noticeably higher than Lewiston and Bangor) • Low rate of hospital beds compared to population
Lewiston ME – Ranked 6	• Very low violent crime rate • Slightly higher property crime rates than Portland, but still low rates overall • Lower than US average cost of living index and lowest of the Maine candidates • Short commute time to work • High rate of hospital beds compared to population	• Low access to physicians
Bangor ME – Ranked 2 (T)	• Lowest violent crime rate • Highest Maine property crime rate but still low overall • Slightly lower than US average cost of living index • Very short commute time to work • High rate of hospital beds compared to population	• Low access to physicians

Categories	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Population and Demographics	14	18	18	10	16	18	18	14	5	16	1	1	10	1	1	5	18	5	18	10	18	10	5	18	5
Household Statistics	6	24	24	3	12	20	18	3	1	12	6	12	12	18	23	11	22	12	17	6	10	6	3	21	1
Labor Force Availability	25	11	16	23	16	9	13	16	16	8	7	1	9	5	2	4	16	13	2	16	13	16	23	12	5
Occupation-Specific Salaries	6	2	1	25	23	9	15	6	19	14	11	12	3	9	3	5	6	12	21	15	19	15	15	21	24
Education	5	25	22	3	6	11	8	18	16	23	4	16	24	14	21	18	18	9	14	1	12	9	1	12	7
Transportation and Market Access	14	21	21	3	3	25	16	2	3	3	16	9	24	21	12	1	7	7	14	20	16	16	9	9	12
Tax Regime	23	23	23	22	6	6	20	20	5	6	1	1	13	11	11	17	14	14	6	6	1	1	18	18	14
Climate and Natural Hazards	4	16	16	4	4	11	20	4	4	16	3	1	24	16	25	23	20	11	15	20	4	11	4	14	1
Crime and Quality of Life	10	6	2	8	10	2	2	2	19	12	23	25	18	16	23	14	8	15	19	6	16	21	1	13	21
Overall Rank	11	25	24	12	13	19	23	14	5	17	2	4	18	10	15	6	22	7	20	3	16	8	1	21	9

Source: ICA calculations

Population & Demographics	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Total Population 2017	541,324	110,086	157,026	4,830,528	903,602	1,093,227	2,378,076	576,957	1,293,876	1,296,400	1,319,180	2,499,116	853,705
Total Population 2022	560,625	111,310	159,102	5,028,926	925,821	1,101,432	2,388,801	597,681	1,368,338	1,341,113	1,467,228	2,720,580	891,387
% Population Growth 2017-2022	3.6%	1.1%	1.3%	4.1%	2.5%	0.8%	0.5%	3.6%	5.8%	3.4%	11.2%	8.9%	4.4%
Total Population 14-65 2017	357,549	72,175	106,104	3,267,133	603,428	722,297	1,535,663	376,218	865,961	852,490	895,498	1,665,738	574,296
Total Population 15-65 2022	357,277	70,909	103,507	3,336,435	599,946	705,491	1,484,133	376,406	890,560	855,649	979,322	1,777,577	583,711
% Population Growth 2017-2022	-0.1%	-1.8%	-2.4%	2.1%	-0.6%	-2.3%	-3.4%	0.0%	2.8%	0.4%	9.4%	6.7%	1.6%
Subrank	14	18	18	10	16	18	18	14	5	15	1	1	10

Population & Demographics	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Total Population 2017	1,489,388	2,464,086	2,038,559	2,071,101	2,071,338	4,329,087	367,238	2,848,573	2,132,041	649,731	1,574,825	2,438,192
Total Population 2022	1,606,224	2,717,609	2,151,796	2,066,579	2,187,074	4,363,190	381,366	2,890,276	2,220,485	684,594	1,593,273	2,595,007
% Population Growth 2017-2022	7.8%	10.3%	5.6%	-0.2%	5.6%	0.8%	3.8%	1.5%	4.1%	5.4%	1.2%	6.4%
Total Population 14-65 2017	988,187	1,662,982	1,347,530	1,336,896	1,394,620	2,847,439	260,973	1,871,205	1,392,151	447,931	1,035,685	1,638,689
Total Population 15-65 2022	1,035,482	1,792,656	1,388,682	1,292,738	1,438,336	2,782,238	264,105	1,842,814	1,413,983	460,941	1,019,391	1,698,831
% Population Growth 2017-2022	4.8%	7.8%	3.1%	-3.3%	3.1%	-2.3%	1.2%	-1.5%	1.6%	2.9%	-1.6%	3.7%
Subrank	1	1	5	18	5	18	10	18	10	5	18	5

Household Statistics	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Total Owner Occupied Housing Units 2017	54.98%	56.21%	55.19%	55.83%	56.93%	60.13%	61.09%	61.92%	59.51%	60.17%	58.83%	59.24%	58.09%
Total Renter Occupied Housing Units 2017	26.34%	34.37%	28.89%	38.04%	32.85%	31.04%	29.15%	30.35%	32.81%	31.99%	33.97%	32.03%	32.65%
Total Vacant Housing Units 2017	18.67%	9.42%	15.92%	6.13%	10.21%	8.83%	9.75%	7.73%	7.68%	7.84%	7.21%	8.73%	9.26%
% Housing Unit Growth 2017-2022	3.79%	1.32%	2.31%	3.78%	2.64%	1.60%	1.21%	3.65%	5.62%	3.33%	10.91%	8.55%	4.93%
Median Home Value 2017	$258,033	$169,135	$149,936	$411,796	$209,291	$140,677	$140,518	$183,983	$232,596	$164,764	$231,942	$190,700	$181,627
Median Household Income 2017	$61,800	$49,415	$47,097	$78,835	$62,936	$54,875	$54,129	$60,863	$60,462	$52,603	$65,065	$55,278	$52,961
Median Disposable Income 2017	$50,733	$39,107	$37,672	$57,823	$49,579	$42,478	$43,925	$50,238	$49,696	$43,569	$52,372	$45,713	$43,824
Subrank	6	24	24	3	12	20	18	3	1	12	6	12	12

Household Statistics	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Total Owner Occupied Housing Units 2017	55.33%	50.38%	58.42%	56.85%	55.34%	61.51%	55.58%	61.67%	59.46%	55.69%	53.90%	56.17%
Total Renter Occupied Housing Units 2017	33.02%	35.68%	31.49%	31.97%	37.03%	27.03%	38.20%	28.38%	31.65%	38.28%	38.12%	38.29%
Total Vacant Housing Units 2017	11.65%	13.93%	10.10%	11.17%	7.62%	11.47%	6.21%	9.95%	8.89%	6.03%	7.98%	5.54%
% Housing Unit Growth 2017-2022	7.22%	9.90%	5.20%	0.92%	5.70%	1.70%	3.99%	2.17%	4.10%	5.79%	1.64%	6.04%
Median Home Value 2017	$195,524	$206,046	$155,638	$158,975	$175,130	$156,941	$239,151	$174,146	$177,745	$237,553	$218,433	$311,849
Median Household Income 2017	$54,772	$51,917	$55,500	$52,902	$57,216	$55,431	$62,797	$57,690	$60,228	$64,498	$57,345	$63,671
Median Disposable Income 2017	$45,987	$43,298	$45,792	$43,702	$47,578	$45,458	$51,274	$47,328	$50,183	$51,075	$45,742	$51,279
Subrank	18	23	11	22	12	17	6	10	6	3	21	1

Labor Force Availability	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Labor Force 2012	202,190	56,769	72,143	2,552,759	455,291	541,972	1,227,271	291,580	642,337	629,991	614,142	1,173,837	392,616
Labor Force 2017	207,642	56,933	71,233	2,708,512	447,870	517,816	1,207,326	298,426	679,354	664,711	696,766	1,308,108	419,452
% Growth in Labor Force 2012-2017	2.70%	0.29%	-1.26%	6.10%	-1.63%	-4.46%	-1.63%	2.35%	5.76%	5.51%	13.45%	11.44%	6.84%
Unemployment Rate 2012	6.1%	7.8%	7.0%	6.1%	7.3%	7.9%	7.2%	6.9%	6.6%	7.8%	7.4%	9.3%	6.8%
Unemployment Rate 2017	2.70%	3.20%	3.10%	3.50%	4.20%	4.90%	5.10%	4.10%	3.90%	4.30%	3.90%	4.20%	4.60%
Change in Unemployment 2012-2017	-3.4%	-4.6%	-3.9%	-2.6%	-3.1%	-3.0%	-2.1%	-2.8%	-2.7%	-3.5%	-3.5%	-5.1%	-2.2%
Subrank	25	11	16	23	16	9	13	16	16	8	7	1	9

Labor Force Availability	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Labor Force 2012	704,090	1,162,614	963,554	1,035,299	1,003,947	2,006,372	181,611	1,455,759	1,079,928	363,132	816,495	1,198,820
Labor Force 2017	756,266	1,298,708	1,045,200	1,034,713	1,069,119	2,093,970	193,951	1,461,226	1,131,091	391,594	830,891	1,310,613
% Growth in Labor Force 2012-2017	7.41%	11.71%	8.47%	-0.06%	6.49%	4.37%	6.79%	0.38%	4.74%	7.84%	1.76%	9.33%
Unemployment Rate 2012	8.2%	8.4%	8.0%	6.5%	6.5%	10.1%	6.0%	7.3%	6.5%	5.2%	7.4%	8.0%
Unemployment Rate 2017	4.10%	3.80%	3.30%	6.10%	4.00%	4.50%	3.40%	3.90%	3.90%	2.30%	3.60%	3.80%
Change in Unemployment 2012-2017	-4.1%	-4.6%	-4.7%	-0.4%	-2.5%	-5.6%	-2.6%	-3.4%	-2.6%	-2.9%	-3.8%	-4.2%
Subrank	5	2	4	16	13	2	16	13	16	23	12	5

Industry-Specific Employment[29]	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Manufacturing	6.01%	10.71%	4.00%	6.81%	4.72%	8.52%	8.64%	6.22%	5.07%	8.60%	4.83%	8.62%	6.09%
Wholesale Trade	4.77%	4.11%	3.56%	4.03%	2.82%	5.46%	4.10%	3.70%	5.14%	6.06%	4.06%	5.46%	4.53%
Retail Trade	14.28%	14.01%	12.83%	12.37%	15.04%	12.29%	13.03%	10.80%	12.64%	12.64%	15.03%	13.89%	13.57%
Information	2.86%	2.11%	2.01%	4.10%	2.68%	2.29%	2.26%	2.10%	2.01%	2.25%	4.42%	3.67%	2.27%
Finance/Insurance/Real Estate	4.96%	4.05%	3.26%	5.75%	4.41%	3.04%	4.05%	4.46%	5.07%	6.22%	3.70%	4.79%	3.90%
Service Industries	30.42%	24.05%	40.52%	35.03%	37.73%	33.83%	28.72%	33.95%	34.30%	27.32%	34.00%	26.05%	33.78%

Industry-Specific Employment	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Manufacturing	4.18%	3.55%	8.40%	12.52%	6.44%	14.01%	7.06%	9.73%	6.85%	8.52%	14.36%	9.97%
Wholesale Trade	4.47%	3.41%	5.24%	4.13%	4.43%	4.37%	2.47%	3.92%	4.88%	4.74%	4.97%	5.42%
Retail Trade	14.92%	13.44%	12.20%	10.77%	12.16%	13.42%	8.74%	13.03%	12.46%	11.83%	12.42%	14.09%
Information	3.35%	2.56%	2.49%	2.04%	2.40%	2.23%	2.85%	2.59%	4.63%	2.81%	2.36%	3.25%
Finance/Insurance/Real Estate	5.44%	3.26%	5.29%	3.93%	4.36%	4.02%	1.99%	5.40%	5.50%	6.10%	5.10%	3.51%
Service Industries	30.61%	29.25%	28.39%	27.19%	36.44%	28.94%	37.87%	30.29%	35.10%	38.38%	28.10%	27.57%

[29] Industry-Specific Employment not ranked in model

Occupation-Specific Employment[30]	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Business/Financial Operations	53.26	34.23	34.45	63.23	58.82	43.85	51.46	65.29	72.76	42.74	64.27	68.86	42.28
Computer/Mathematical	29.58	16.99	16.92	49.92	35.04	33.96	31.35	38.81	35.64	21.52	58.00	37.47	14.94
Healthcare Support Functions	31.14	37.39	41.53	30.25	30.63	28.78	30.74	28.23	23.23	25.07	24.25	25.82	25.88
Office/Administrative	158.98	173.66	152.78	143.82	171.56	163.87	168.09	182.50	164.97	159.41	151.13	153.75	135.50
Production	46.47	79.44	36.08	40.02	39.02	65.92	54.07	48.90	45.22	104.77	34.04	72.24	63.36
Transportation/Material Moving	59.47	79.51	57.85	49.46	52.19	50.58	63.97	101.02	66.97	103.04	55.90	79.52	75.02

Occupation-Specific Employment	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Business/Financial Operations	64.65	53.86	56.74	53.68	65.12	53.69	52.52	54.78	62.02	70.29	56.21	56.06
Computer/Mathematical	26.94	26.57	31.08	27.63	42.42	33.15	38.35	34.20	42.47	62.19	30.84	38.06
Healthcare Support Functions	27.48	22.59	24.84	37.26	36.28	31.97	33.16	29.66	24.12	22.48	24.29	25.25
Office/Administrative	184.19	164.32	150.18	157.72	168.47	149.34	146.78	165.23	171.30	147.05	148.94	146.20
Production	37.99	31.95	65.43	86.80	55.60	98.05	53.14	58.81	60.07	70.27	100.49	63.39
Transportation/Material Moving	75.01	60.65	100.97	64.17	78.65	60.67	39.49	60.89	65.67	53.00	61.72	61.41

[30] Occupation-Specific Employment not ranked in model

Occupation-Specific Salaries (Annual Mean 2016)	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Business/Financial Operations	$66,150	$58,780	$57,840	$85,730	$71,070	$71,040	$69,830	$65,680	$73,950	$63,100	$72,710	$76,090	$59,150
Computer/Mathematical	$78,350	$63,680	$73,380	$98,380	$75,320	$73,210	$76,770	$74,720	$86,820	$72,790	$89,210	$87,210	$61,730
Healthcare Support Funcions	$31,130	$29,450	$28,410	$34,950	$29,300	$30,210	$29,740	$30,780	$29,110	$30,900	$29,620	$27,200	$25,590
Office/Administrative	$36,880	$32,900	$33,460	$44,080	$39,840	$37,920	$36,030	$37,150	$36,580	$35,490	$35,790	$36,750	$33,730
Production	$36,080	$33,150	$33,870	$40,760	$42,220	$38,170	$39,280	$35,500	$39,290	$37,520	$33,650	$36,360	$52,450
Transportation/Material Moving	$33,930	$34,710	$33,870	$38,800	$35,190	$34,120	$34,840	$35,700	$34,090	$39,750	$30,890	$34,700	$36,810
Subrank	6	2	1	25	23	9	15	6	19	14	11	12	3

Occupation Specific Salaries (Annual Mean 2016)	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Business/Financial Operations	$69,260	$67,290	$65,860	$69,400	$68,920	$74,250	$70,150	$73,070	$70,910	$64,810	$70,010	$72,040
Computer/Mathematical	$77,810	$78,260	$74,930	$73,760	$88,700	$80,890	$80,930	$82,930	$79,300	$74,850	$75,110	$85,810
Healthcare Support Funcions	$29,790	$29,790	$30,550	$27,900	$27,610	$29,500	$30,640	$28,460	$30,330	$33,570	$31,460	$36,230
Office/Administrative	$34,890	$33,670	$36,440	$36,680	$36,670	$37,060	$37,330	$37,070	$36,800	$37,400	$38,220	$39,380
Production	$36,530	$32,260	$35,540	$37,830	$39,190	$40,370	$35,770	$38,740	$39,290	$36,850	$39,330	$38,880
Transportation/Material Moving	$36,230	$33,760	$34,290	$35,190	$32,500	$37,220	$35,380	$35,630	$36,030	$35,360	$35,030	$38,580
Subrank	9	3	5	6	12	21	15	19	15	15	21	24

Education	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Population less than High School	6.35%	11.23%	9.20%	8.33%	7.43%	9.61%	6.93%	9.34%	11.02%	10.70%	8.95%	11.62%	11.74%
Population at least High School	89.41%	81.77%	85.49%	89.17%	88.61%	85.68%	89.33%	86.58%	84.37%	83.51%	88.04%	84.54%	83.55%
Population Some College	66.81%	52.01%	56.43%	68.36%	65.21%	63.05%	59.43%	56.06%	63.02%	59.02%	72.05%	63.92%	56.02%
Population Associates Degree	48.78%	32.69%	37.09%	53.24%	48.04%	45.66%	43.52%	39.88%	42.21%	37.34%	53.98%	42.87%	34.72%
Population Bachelors Degree	39.16%	21.56%	25.83%	46.08%	36.15%	33.83%	33.22%	31.05%	34.97%	28.99%	45.01%	33.91%	28.25%
Population Graduate/Professional School Degree	13.97%	6.88%	9.42%	20.99%	16.04%	14.73%	12.75%	11.65%	13.10%	11.59%	16.49%	11.06%	9.47%
Subrank	5	25	22	3	6	11	8	18	16	23	4	16	24

Education	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Population less than High School	9.36%	10.69%	10.54%	9.91%	8.79%	10.24%	4.98%	8.64%	8.51%	5.10%	9.18%	8.57%
Population at least High School	86.16%	85.25%	85.04%	86.53%	87.87%	86.10%	92.56%	87.38%	87.95%	92.30%	87.60%	87.68%
Population Some College	62.80%	61.95%	60.81%	60.65%	63.16%	62.91%	79.89%	64.80%	65.73%	73.52%	64.97%	71.07%
Population Associates Degree	40.36%	41.32%	40.73%	38.71%	42.99%	39.37%	61.20%	42.13%	43.43%	53.99%	43.17%	47.03%
Population Bachelors Degree	30.52%	30.55%	32.88%	30.33%	35.30%	30.42%	54.08%	33.05%	35.41%	43.63%	34.23%	38.17%
Population Graduate/Professional School Degree	9.79%	10.04%	11.44%	11.69%	12.56%	11.96%	27.80%	13.04%	12.92%	17.10%	11.30%	13.92%
Subrank	14	21	18	18	9	14	1	12	9	1	12	7

Transportation & Market Access	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Population within 4-hr Drive Time	12,719,884	11,391,890	4,545,147	19,602,847	42,418,043	8,134,175	20,375,232	45,735,993	21,976,788	20,732,470	17,962,015	20,164,080	8,129,211
Households within 4-hr Drive Time	4,976,318	4,448,028	1,813,720	7,518,269	15,933,326	3,259,693	8,122,987	17,226,926	8,373,406	8,171,594	6,969,118	7,822,721	3,096,905
Median Household Income within 4-hrs	$66,253	$65,472	$64,980	$66,044	$66,554	$51,993	$54,640	$65,376	$63,182	$50,550	$50,926	$49,179	$45,633
Household Growth Rate within 4-hrs	0.47%	0.51%	0.61%	0.46%	0.45%	0.04%	0.33%	0.58%	0.92%	0.59%	0.99%	1.06%	0.69%
Miles to Airport	5	35	3	3	10	7	20	12	10	7	15	8	9
Airport Type	Medium	Medium	Small	Large	Medium	Medium	Large	Small	Medium	Large	Medium	Large	Medium
Interstate Highways	1	1	1	2	2	1	2	3	2	3	2	2	2
Subrank	14	21	21	3	3	25	16	2	3	3	16	9	24

Transportation & Market Access	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Population within 4-hr Drive Time	14,557,080	19,983,216	30,589,729	25,005,863	28,510,211	20,324,754	24,103,427	13,070,660	11,695,077	19,477,923	18,622,502	9,290,142
Households within 4-hr Drive Time	5,684,753	7,811,473	11,797,243	10,039,327	11,370,208	8,027,068	9,462,142	5,178,182	4,589,653	7,477,454	7,119,423	3,595,585
Median Household Income within 4-hrs	$48,364	$50,405	$54,117	$52,089	$52,004	$52,205	$52,954	$49,996	$53,680	$59,434	$58,643	$63,410
Household Growth Rate within 4-hrs	1.19%	1.29%	0.38%	0.18%	0.31%	0.26%	0.29%	0.28%	0.63%	0.33%	0.31%	1.11%
Miles to Airport	15	13	14	14	8	23	27	15	20	7	8	13
Airport Type	Medium	Large	Large	Large	Large	Large	Large	Large	Large	Medium	Large	Large
Interstate Highways	2	1	4	4	2	3	1	4	4	3	2	2

Transportation & Market Access	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Subrank	21	12	1	7	7	14	20	16	16	9	9	12

Tax Regime	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
State Corporate Tax Climate Score	41	41	41	37	7	7	44	44	6	28	4	4	36
State Corporate Income Tax (Highest Bracket)	8.93%	8.93%	8.93%	8.00%	6.50%	6.50%	9.99%	9.99%	6.00%	6.00%	4.00%	4.00%	8.00%
State Sales Tax	5.50%	5.50%	5.50%	6.25%	4.00%	4.00%	6.00%	6.00%	5.30%	6.00%	4.75%	4.75%	5.00%
Property Tax as % of Income	4.82%	4.82%	4.82%	3.66%	4.65%	4.65%	2.99%	2.99%	2.92%	2.03%	2.39%	2.39%	2.08%
Subrank	23	23	23	22	6	6	20	20	5	6	1	1	13

Tax Regime	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
State Corporate Tax Climate Score	19	19	23	45	45	8	8	5	5	30	30	35
State Corporate Income Tax (Highest Bracket)	5.50%	5.50%	6.25%	0.00%	0.00%	6.00%	6.00%	6.25%	6.25%	7.90%	7.90%	7.60%
State Sales Tax	6.00%	6.00%	7.00%	5.75%	5.75%	6.00%	6.00%	4.23%	4.23%	5.00%	5.00%	0.00%
Property Tax as % of Income	2.94%	2.94%	2.53%	2.98%	2.98%	3.37%	3.37%	2.42%	2.42%	4.31%	4.31%	3.26%
Subrank	11	11	17	14	14	6	6	1	1	18	18	14

Climate and Natural Hazards	Portland-South Portland-Biddeford, ME	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC	Baton Rouge, LA MSA
Days of Precipitation per Year	127	129	135	128	135	182	152	125	113	124	112	111	108
Annual Precipitation (in)	41	45.1	43	43	33	31.3	36	36	43	43	43	43	54.1
Annual Snowfall (in)	74	71	95	42	71	88.4	45	35	14	17	7	6	1.8
Annual Days with Thunderstorms	18	30	18	19	28	29	36	33	37	45	46	42	70
Tornado Risk	0	0	0	10	6	1	14	13	21	17	13	14	31
Subrank	4	16	16	4	4	11	20	4	4	16	3	1	24

Climate and Natural Hazards	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-
Days of Precipitation per Year	116	116	122	156	136	133	133	108	102	117	122	152
Annual Precipitation (in)	54	51	39	35	37	32	32	36	37	30	29	38
Annual Snowfall (in)	0	0	21	52	28	39	39	18	20	39	45	7
Annual Days with Thunderstorms	64	81	45	36	42	33	33	45	53	40	36	7
Tornado Risk	14	42	33	14	19	23	31	44	49	24	19	3
Subrank	16	25	23	20	11	15	20	4	11	4	14	1

Crime and Quality of Life	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA
Violent Crime	134.30	136.10	95.60	294.96	289.70	280.80	289.00	255.10	538.00	437.80	420.00	693.00	505.00
Property Crime	1,691.00	1,701.20	1,941.60	1,399.40	2,009.50	1,995.70	1,746.50	1,479.40	4,224.00	3,358.90	3,603.00	3,792.00	3,398.00
Cost of Living Index	116.5	93.1	98.6	132.5	108.1	100	91.5	99.7	104.5	87.7	98.2	93.2	96.1
Mean Commute Time	24.3	23.3	20.8	28.8	22.2	20.7	25.9	22	24.6	24.1	24.9	25.4	25.8
Physicians per 10,000 People	333.1	231.8	290.5	548.9	306	320.3	335.5	346.5	287.9	276.1	186.7	209.6	181.9
Number of Hospital Beds	298.4	474.6	471.8	599.9	367.7	478.8	529.7	459.4	514.1	435.8	269.1	268.6	479.7
Subrank	10	6	2	8	10	2	2	2	19	12	23	25	18

Crime and Quality of Life	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Violent Crime	478.90	504.30	713.40	445.50	518.30	555.60	317.30	1,826.00	1,104.50	202.80	656.00	276.10
Property Crime	2,894.30	2,963.50	3,206.90	2,383.80	3,810.80	2,085.10	1,647.90	6,364.00	4,641.00	1,915.70	2,717.60	2,794.20
Cost of Living Index	92.9	97.8	87.2	101	92	99.4	104	90.4	97.8	99.7	101.9	111.3
Mean Commute Time	24.8	26.3	24	24.5	22.7	26.1	22.6	24.8	22.5	21.4	22.2	24.9
Physicians per 10,000 People	257.3	193.7	326	362.2	280.7	225.1	809.3	284.9	263.3	421.6	323.6	267.3
Number of Hospital Beds	353.5	272.2	357	469.2	310.1	434.4	479	466.8	400.8	364	365.8	189.3
Subrank	16	23	14	8	15	19	6	16	21	1	13	21

Industry Sector Analysis

The analysis in the section is based on a standard site selection or evaluation model designed to show how likely a company would be to select Portland, Bangor or the Lewiston Auburn areas. This model has been further modified to develop insights to show how likely a company in a certain industry or function would be to select Portland, Bangor, or the Lewiston Auburn area.

As with previous reporting rounds, the following 7 industries or sectors are defined as current areas of focus for Maine incentive programs:

- Biotechnology,
- Composites & Advanced Materials,
- Environmental Technologies,
- Forest Products & Agriculture,
- Information Technology,
- Marine Technology & Aquaculture, and
- Precision Manufacturing.

Methodology

For each of the industry sectors, the team assigned a series of drivers particularly valued by a company in that industry. These drivers were chosen based on our proprietary incentives database tool and our experience as site selection consultants for the private sector. The team assigned a series of factors to measure each driver. Factors were limited to statistics that are available for the entire US by state or MSA. The statistical categories from previous rounds of evaluation were maintained, with data updated wherever applicable.

It is important to note that this analysis by industry/sector does not take into account incentive programs in place which might help make up for drawbacks identified in this analysis. Incentive programs normally come into the site selection process further into the process when the candidates have been narrowed to a short list.

Overall Findings

Portland ranks 7th for Marine Technology & Aquaculture and 6th for Information Technology. For all other industries, Portland ranks between 19th and 22nd against its competitors. Lewiston-Auburn ranks 22nd for Marine Technology & Aquaculture and 23rd – 25th for all other industries. Bangor performs even less competitively, coming in at just 23rd for both Forest Products & Agriculture and Marine Technology & Aquaculture. It ranks still lower for all other categories.

Industry Sector	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Biotechnology	19	23	24	1	2	15	8	3	14	22	5	10	25	9	4	11	13	7	18	6	21	16	17	20	12
Composites & Advanced Materials	21	23	24	7	15	22	19	13	17	18	3	11	25	9	8	4	16	14	2	1	10	6	12	20	5
Environmental Technologies	22	25	24	13	12	16	10	11	15	19	4	7	23	14	17	1	8	9	5	6	3	2	20	21	18
Forest Products & Agriculture	20	24	23	9	17	21	6	15	11	18	14	16	25	12	4	2	19	8	7	10	5	13	1	22	3
Information Technology	6	23	24	2	15	21	12	18	14	22	4	9	25	5	8	16	19	10	20	2	17	11	7	13	1
Marine Technology & Aquaculture	7	22	23	17	16	19	24	18	5	21	9	13	25	2	1	10	14	8	15	3	11	12	6	20	4
Precision Manufacturing	21	24	25	17	9	23	20	11	13	12	3	3	22	15	10	1	8	14	2	7	6	5	19	18	16

Biotechnology

Maine remains an uncompetitive fit for biotechnology companies because of its limited access to talent and lack reputation in the field due to the cluster's small critical mass in the state. The Greater Boston area is fairly close to southern Maine, has better access to talent, and the 495 area has similar costs of living and quality of life to the Portland area. Companies would rather select a location closer to the biotech hub with more numerous educational institutions and a larger pipeline of skilled talent. Maine also has limited access to funding and investment partners given the low amount of activity from venture capitalists in the state.

The Portland MSA ranked slightly better than Lewiston-Auburn and Bangor for Biotech, but all locations ranked poorly against the competitors. Portland has strong workforce availability because of the high educational attainment of its population. It also ranks modestly high in Global Access due to its proximity to an airport and has a relatively high percentage of employment due to FDI.

Biotechnology	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Ability to Recruit Talent to Region	7	21	20	2	13	15	9	17	11	23	6	18	24	22	25	19	16	14	5	1	8	10	3	12	4
Access to Funding/Investment Partners	16	16	16	1	1	1	4	4	8	16	8	8	16	4	4	16	11	11	16	16	14	14	16	16	11
Domestic Market Growth Potential	7	7	7	4	22	22	7	7	22	7	7	7	25	1	1	7	7	7	4	4	7	7	7	7	1
Global Access	8	23	16	1	10	10	19	23	16	2	20	2	21	13	7	5	6	2	13	13	21	25	16	8	10
Industry Cluster/Critical Mass	13	23	24	2	11	17	13	13	10	17	1	2	11	6	2	16	17	9	24	7	17	2	17	17	7
Proximity to Markets or Customers	18	18	24	12	2	25	12	1	7	11	7	7	23	17	7	2	6	4	12	5	21	18	12	12	22
Skilled Workforce Availability	2	23	24	3	11	19	20	18	11	15	6	13	25	15	21	13	21	9	15	3	10	8	1	7	5
Universities or Researchers	23	23	23	8	6	6	1	1	11	21	12	12	18	16	16	3	4	4	9	9	14	14	18	18	22
RANKS	19	23	24	1	2	15	8	3	14	22	5	10	25	9	4	11	13	7	18	6	21	16	17	20	12

Composites & Advanced Materials

Composites and Advanced Materials is both a subset of and a partnering activity to precision manufacturing. Maine continues to not competitively rank well for composites and advanced materials due to its poor tax climate, limited transportation infrastructure, and distance to markets and customers. Beyond Portland's ability to recruit and supply a skilled workforce, companies in the state have some significant hurdles to overcome in order to remain competitive.

Composites & Advanced Materials	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Ability to Recruit Talent to Region	7	21	20	2	14	15	9	17	11	23	6	18	24	22	25	19	16	13	5	1	8	9	3	12	4
Domestic Market Growth Potential	7	7	7	4	22	22	7	7	22	7	7	7	25	1	1	7	7	7	4	4	7	7	7	7	1
Infrastructure and Logistics	21	25	23	6	19	24	7	19	15	7	17	17	20	11	12	3	1	9	5	22	4	2	16	13	14
Proximity to Markets or Customers	18	18	24	12	2	25	12	1	6	11	6	6	23	17	6	2	6	4	12	5	21	18	12	12	22
Regulations and Business Climate	22	22	22	25	12	12	18	18	9	12	1	1	15	7	7	9	16	16	5	5	3	3	18	18	11
Skilled Workforce Availability	2	21	24	3	11	20	19	18	11	15	6	13	25	15	22	14	22	9	17	3	10	7	1	7	5
RANKS	21	23	24	7	15	22	19	13	17	18	3	11	25	9	8	4	16	14	2	1	10	6	12	20	5

Environmental Technologies

Maine as a state does not have a competitive ranking for Environmental Technologies. High energy costs help drive the need for environmental technologies, but ironically make such products costlier to produce. Bangor and Lewiston do not rank well for any of the factors that drive environmental technologies. Only Portland has one positive ranking category with skilled workforce availability comparing well for this industry as compared to the competitors.

Environmental Technologies	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Infrastructure and Logistics	21	25	23	6	19	24	7	10	15	8	17	17	20	11	12	3	1	9	5	22	4	2	16	13	14
Regulations or Business Climate	22	22	22	25	13	13	20	20	10	12	1	1	15	7	7	9	16	16	5	5	3	3	18	18	11
Skilled Workforce Availability	2	23	24	3	11	19	20	18	11	15	6	13	25	15	21	13	21	9	15	3	10	8	1	7	5
Universities or Researchers	23	23	23	8	6	6	1	1	11	21	12	12	18	16	16	3	4	4	9	9	14	14	18	18	22
RANKS	22	25	24	13	12	16	10	11	15	19	4	7	23	14	17	1	8	9	5	6	3	2	20	21	18

Forest Products & Agriculture

Maine could do much better for forest products and agriculture considering the vastness of the state's natural resources. The state has access to a tremendous amount of unharvested land that could supply paper mills and other value-added industries. However, extracting this resource is expensive and the supporting industries that add value are struggling. Cheaper energy costs and or access to natural gas would help and possibly save the forestry products industry. Furthermore, Maine has a small percentage of its land dedicated to farmland compared to the other states in the competitive set.

Surprisingly, Portland ranks the best out of the Maine candidates due to its access to skilled labor and culinary programs, but Bangor also demonstrates an edge in natural resources business activity compared to others. Maine's burdensome tax environment and limited logistics infrastructure hinder all three MSAs.

As with the previous report, the agriculture component is missing a large farming industry outside the Presque Isle area by the Amish for two reasons. Presque Isle is not considered an MSA (thought they may have the population mass to become a NECTA). More importantly, it is unclear and unlikely that the Amish are included in the census. While not all our sources are census based, several are census based or are separate sources also based on census statistics. If the area became a NECTA, statistics would be collected differently and by more sources.

Forest Products & Agriculture	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Access to Agricultural/Research Institutions	7	7	7	2	7	7	2	2	7	7	7	7	7	7	7	2	7	2	7	7	7	7	1	7	7
Access to Culinary Programs	13	17	17	4	13	17	4	17	8	17	10	9	17	4	1	10	13	17	1	16	7	10	17	17	1
Infrastructure and Logistics	21	25	23	6	19	24	7	10	15	8	17	17	20	11	12	3	1	9	5	22	4	2	16	13	14
Natural Resources	7	12	4	25	17	3	14	15	7	15	18	22	18	20	10	11	21	5	24	5	7	13	1	22	2
Proximity to Markets or Customers	18	18	24	12	2	25	12	1	6	11	6	6	23	17	6	2	10	4	12	5	21	18	12	12	22
Regulations and Business Climate	22	22	22	25	12	12	18	18	9	12	1	1	15	7	7	9	16	16	5	5	3	3	18	18	11
Skilled Workforce Availability	2	21	24	3	12	20	19	18	11	16	6	13	25	16	22	13	22	9	15	3	10	7	1	7	5
RANKS	20	24	23	9	17	21	6	15	11	18	14	16	25	12	4	2	19	8	7	10	5	13	1	22	3

Information Technology

Portland proves a competitive choice for Information Technology companies, ranking 6th compared to the other two Maine locations which rank 23rd and 24th. First, it has the ability to recruit and supply talented labor in tech fields. Second, Portland's ICT infrastructure is ranked highly based on the percentage of households with broadband access and the utility index score. Portland also has a higher location quotient in this field than the other two Maine locations.

Information Technology	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Ability to Recruit Talent to Region	7	21	20	2	13	15	10	17	11	23	6	18	24	22	25	19	16	13	5	1	8	9	3	12	4
Domestic Market Growth Potential	7	7	7	4	22	22	7	7	22	7	7	7	25	1	1	7	7	7	4	4	7	7	7	7	1
ICT Infrastructure	2	15	15	12	5	15	2	15	5	23	15	5	12	5	15	12	5	5	25	5	15	23	15	2	1
Industry Cluster/Critical Mass	13	23	24	2	11	17	13	13	10	17	1	2	11	6	2	16	17	9	24	7	17	2	17	17	7
Skilled Workforce Availability	2	21	24	4	11	19	19	18	12	15	6	14	25	15	22	13	22	9	17	3	10	8	1	7	5
RANKS	6	23	24	2	15	21	12	18	14	22	4	9	25	5	8	16	19	10	20	2	17	11	7	13	1

Marine Technology and Aquaculture

Portland has the best access to marine technology and aquaculture among the three Maine MSAs simply due to its proximity to the ocean. Portland itself is not the best place for aquaculture activities, but is a great location for research and marine technology development given its skilled workforce. Bangor and Lewiston-Auburn demonstrate low cost competitiveness as well as reasonable access to natural resources.

Marine Technology and Aquaculture	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Access to Fresh and Salt Water Environment	2	13	23	4	10	6	20	20	3	23	17	13	10	1	5	25	8	13	17	13	17	20	12	6	8
Domestic Market Growth Potential	7	7	7	4	22	22	7	7	22	7	7	7	25	1	1	7	7	7	4	4	7	7	7	7	1
Infrastructure and Logistics	21	25	23	6	19	24	7	10	15	8	17	17	20	11	12	3	1	9	5	22	4	2	16	13	14
Lower Costs	6	2	1	25	22	13	19	8	17	15	6	13	4	10	3	5	9	16	23	10	21	18	10	20	24
Natural Resources	7	11	4	25	17	3	15	14	7	16	18	22	18	20	10	11	21	5	24	5	9	13	1	22	2
Proximity to Markets or Customers	18	18	24	12	2	25	12	1	7	11	7	7	23	17	7	2	6	4	12	5	21	18	12	12	22
Regulations or Business Climate	22	22	22	25	13	13	20	20	10	12	1	1	15	7	7	9	16	16	5	5	3	3	18	18	11
Skilled Workforce Availability	2	23	24	3	11	19	20	18	11	15	6	13	25	15	21	13	21	9	15	3	10	8	1	7	5
RANKS	7	22	23	17	16	19	24	18	5	21	9	13	25	2	1	10	14	8	15	3	11	12	6	20	4

Precision Manufacturing

While Lewiston and Bangor don't rank particularly high for manufacturing, there is a historical precedence set in these areas for the manufacturing and precision manufacturing fields. Many manufacturing companies in more traditional manufacturing fields are transitioning to using CNC machines to help alleviate the pressures on employees and add accuracy to key points in the manufacturing process. Most companies have struggled but managed to find enough employees to efficiently run the business. Many companies are looking at a mass retirement of their workforce over the next 5 to 10 years. Skilled workforce availability will become even more important than ever, which may shift the industry away from its historical base in Lewiston and Bangor towards the Portland area.

Precision Manufacturing	Portland-South Portland-Biddeford, ME MSA	Lewiston-Auburn, ME MSA	Bangor, ME MSA	Boston-Quincy, MA MSA	Albany-Schenectady-Troy, NY MSA	Rochester, NY MSA	Pittsburgh, PA MSA	Harrisburg-Carlisle, PA MSA	Richmond VA	Louisville-Jefferson County, KY MSA	Raleigh-Cary, NC MSA	Charlotte-Gastonia-Concord, NC MSA	Baton Rouge, LA MSA	Jacksonville, FL MSA	Orlando-Kissimmee, FL MSA	Indianapolis-Carmel, IN MSA	Cleveland-Elyria-Mentor, OH MSA	Columbus, OH MSA	Detroit-Livonia-Dearborn, MI MSA	Ann Arbor, MI MSA	St. Louis, MO-IL MSA	Kansas City, MO-KS MSA	Madison, WI MSA	Milwaukee-Waukesha-West Allis, WI MSA	Portland-Vancouver-Beaverton, OR-WA MSA
Infrastructure and Logistics	21	25	23	6	19	24	7	10	15	8	17	17	20	11	12	3	1	9	5	22	4	2	16	13	14
Proximity to Markets or Customers	18	18	24	12	2	25	12	1	7	11	7	7	23	17	7	2	6	4	12	5	21	18	12	12	22
Regulations and Business Climate	22	22	22	25	13	13	20	20	10	12	1	1	15	7	7	9	16	16	5	5	3	3	18	18	11
Skilled Workforce Availability	6	20	25	7	21	18	14	18	21	13	17	15	16	23	24	12	10	11	5	3	8	9	1	2	4
RANKS	21	24	25	17	9	23	20	11	13	12	3	3	22	15	10	1	8	14	2	7	6	5	19	18	16

Appendix K – Benchmark 3 – Incentive Award Productivity

Similar to the State Investment benchmark, this Incentive Productivity Benchmark evaluates a number of indicators that capture the extent to which US states have awarded incentives (i.e. Indicator 1 and Indicator 2) and the economic benefits generated as a result of these awarded incentives (i.e. Indicator 3 and Indicator 4):

- **Indicator 1:** Number of awarded incentives to attract investment to a particular location;
- **Indicator 2:** Value of awarded incentives or the money authorities and communities in this location spent on the awarded incentives;
- **Indicator 3:** Capital volume attracted to this location as a result of the awarded incentives; and
- **Indicator 4:** New jobs created in this location as a result of the awarded incentives.

This Incentive Productivity Benchmark has been developed from incentives data obtained from the IncentivesMonitor.com database (originally launched in 2010 as ICAIncentives.com, developed jointly by ICA and WAVTEQ). The database registers all types of incentives offered to companies to establish new operations or to expand an existing operation. A requirement to be registered is that the investment project must create new employment or retain existing jobs and involve a certain amount of capital investment. Incentives that have been granted to universities or colleges, companies upgrading technology and equipment without job creation or physical expansion, environmental improvement and projects for restructuring, recovery or rescue have not been included in the database. Over 20,000 corporate, media and EDO sources in multiple languages are screened on a daily basis to identify and administer relevant incentive deals in the database.

The IncentivesMonitor.com database has registered a total of 20,152 incentive awards throughout the US between 2010 and 2017. Authorities across the US spent $114.3 billion on incentives, which in turn attracted over $630 billion worth of capital investment. The incentivized companies created nearly 2.63 million new jobs through these projects.

Out of the over 20,000 incentives, 1,764 (or 8.8%) have been awarded in the six states that comprise New England, equaling a total budget spent on incentives of $3.6 billion. Incentives granted in Maine represent a small portion of the New England incentive distribution since only 31 of the 1,764 incentives (or 1.8% of New England's total) have been awarded to businesses located in Maine. Together, these incentives represent a value of $166.0 million.

In terms of benefits, the incentivized investment projects have created over 72,000 new jobs throughout New England, of which just over 1,600 jobs have been allocated in Maine. This employment creation has been accompanied by a total capital investment of $14.6 billion in New England and $446 million in Maine.

Comparing the average values of awarded incentives demonstrates a national average incentive value of $5.7 million. Governments and authorities across New England and Maine have granted considerably lower average incentive packages of $2.0 million and $5.4 million on average, respectively. The average

benefits these granted incentives have generated are also considerably smaller in New England and Maine. An average US awarded incentive attracted $31.3 million of capital investment combined with 131 new jobs. For New England, these numbers equal $8.3 million and 41 new jobs, respectively. Incentives awarded in Maine generated benefits that are ranked between the US and New England averages with an average capital investment of $14.4 million and 53 newly created jobs.

Headline Figures for the US, New England and Maine (2010-2017)

	U.S.	New England	Maine
No. of Awarded Incentives	20,152	1,764	31
Total Value of Awarded Incentives	$114.3 billion	$3.6 billion	$0.16 billion
Average Value of Awarded Incentive	$5.7 million	$2.0 million	$5.4 million
Total Capital Investment	$630.1 billion	$14.6 billion	$0.45 billion
Average Capital Volume per Awarded Incentive	$31.3 million	$8.3 million	$14.4 million
Total Job Creation	2,634,304	72,498	1,648
Average Job Creation per Awarded Incentive	130	41	53

Source: IncentivesMonitor.com database

On a national level, Kentucky has awarded over 1,500 incentives (or 7.6% of all US incentives) from 2010 to 2017. Kentucky ranks first across the US, closely followed by New York with 1,340 incentives (or 6.6%). Ohio (1,271 or 6.3%), Indiana (1,224 or 6.1%) and California (1,175 or 5.8%) complement the top-5 of incentive awarding states. Well down the field (7th) in terms of number of awards, Michigan spent the most in awards ($15.2 billion), representing 13.3% of the total US budget spent on incentives. The state did not translate this budget into proportionate economic benefits as Michigan "only" attracted 4.4% of the total capital investment ($27.6 billion) and 4.9% (128,115) of the total newly created jobs. New York, however, which spent a considerably smaller amount of money on its incentives ($4.7 billion), generated over 428,000 new jobs or 16.3% vis-à-vis just 4.1% of the total US incentives spend. This large value of incentives in Michigan can be attributed to large incentive deals closed between Michigan and some automotive manufacturers located in this state.

The bottommost states in this ranking have awarded fewer than ten incentive packages over the last five years and include Wyoming (fourteen incentives), North Dakota (ten incentives), Washington DC (two incentives) and Hawaii (only one incentive). The budget spent on incentives and benefits generated across these states are more or less in line with their national shares of number of awarded incentives (ranging between 0.00% and 0.05%).

Together with New Hampshire and Rhode Island, Maine is among the states that have awarded the lowest number and amount of incentive awards. Their economic performance is very similar as their shares of capital investment and job creation exactly match the shares of number and value of awarded incentives, which all represent 0.09% to 0.2% of the national total.

Absolute State Incentive Productivity (2010-2017)

Rank	State	No. of Awarded Incentives		Total Value of Awarded Incentives ($million)		Total Capital Investment ($million)		Total Job Creation	
		Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
1	Kentucky	1,540	7.6%	$2,155.65	1.9%	$22,135.79	3.5%	90,003	3.4%
2	New York	1,340	6.6%	$4,684.78	4.1%	$58,745.84	9.3%	428,908	16.3%
3	Ohio	1,271	6.3%	$2,809.30	2.5%	$20,068.10	3.2%	135,072	5.1%
4	Indiana	1,224	6.1%	$1,795.30	1.6%	$25,630.15	4.1%	131,615	5.0%
5	California	1,175	5.8%	$12,325.20	10.8%	$34,075.22	5.4%	166,929	6.3%
44	Idaho	44	0.2%	$2,106.81	1.8%	$4,755.08	0.8%	5,285	0.2%
45	Washington	33	0.2%	$8,794.97	7.7%	$10,985.47	1.7%	10,928	0.4%
46	**Maine**	**31**	**0.2%**	**$166.14**	**0.1%**	**$445.83**	**0.1%**	**1,648**	**0.1%**
47	New Hampshire	18	0.1%	$167.55	0.1%	$284.32	0.0%	385	0.0%
48	Wyoming	14	0.1%	$83.76	0.1%	$398.10	0.1%	570	0.0%
49	North Dakota	10	0.0%	$17.15	0.0%	$41.30	0.0%	724	0.0%
50	District of Columbia	2	0.0%	$38.60	0.0%	$41.25	0.0%	700	0.0%
51	Hawaii	1	0.0%	$117.00	0.1%	$0.00	0.0%	200	0.0%

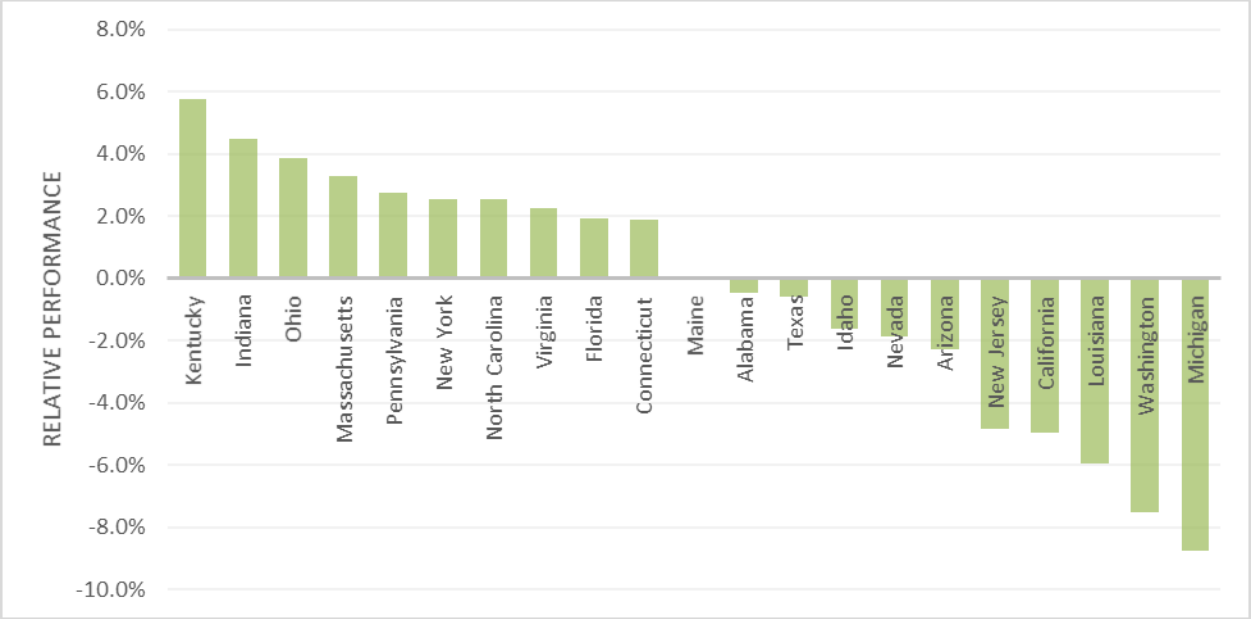
Source: IncentivesMonitor.com database

Expressing the total number of awarded incentives compared to the total value of awarded incentives reveals the states that spent disproportionately more or less on incentive packages. The differentials between these percentages are visualized in the figure below. Maine spent $166.1 million (0.1% of the total amount spent on incentives) on its 31 registered incentive awards (0.2% of the total number of incentives) and is therefore nominally at "par" (i.e. a differential of 0.1%).

Numerous states that ranked high regarding the absolute number of incentives they awarded also rank high in terms of their relative performance. Such states include Kentucky, Indiana, Ohio and Massachusetts. This indicates that even though these states have incentivized a large number of projects, they have not necessarily spent an equal amount of money on these incentives. Other East Coast states such as Pennsylvania, New York, North Carolina, Virginia, Florida, and Connecticut complement this top-10 ranking.

As already mentioned, Michigan spent disproportionately larger amounts on their incentives compared to their share of the total granted incentives deals. Washington, California, New Jersey, Louisiana, Arizona, Nevada, Idaho, Texas and Alabama complete this lower edge of the ranking. These states all represent significantly larger shares of the total budget that has been spent on incentives as compared to the total number of granted incentives.

Relative State Incentive Productivity – Number of Awarded Incentives against Value of Awarded Incentives (2010-2017)



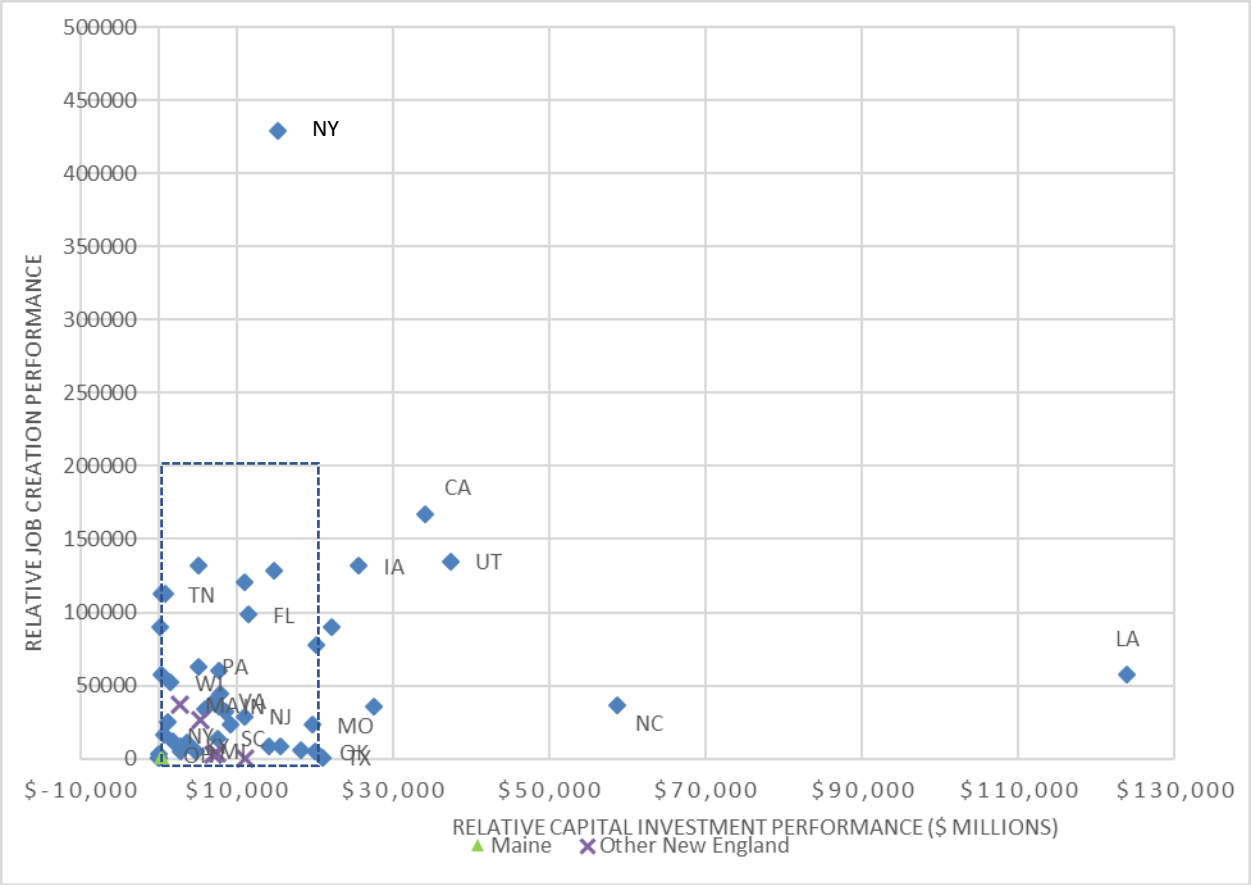
Source: IncentivesMonitor.com database

Plotting the total job creation and attracted capital investment allows a clear understanding of which state has performed best in terms generating economic benefits as a result of the awarded incentives. The figure below demonstrates that ideally, a state combining both a considerable number of newly created jobs as well as a large amount of capital investment would be located in the top-right corner.

What becomes clear is the fact that Louisiana is an absolute outlier regarding the capital investment the state has attracted as a result of its incentive practices. It has attracted over $124 billion of capital investment from 2010 to 2017 despite the fact it did not feature in the top-5 of states that awarded the largest number of incentives. New York has the highest performance in terms of creating jobs through incentive use. California, Ohio, Indiana, Michigan, and Pennsylvania also saw a significant increase in new employment opportunities. It appears no state has an actual position in the top-right corner though this may be slightly skewed due to the strong capital investment performance of Louisiana. Leaving out Louisiana would show California, Utah, and Iowa located in the top-right corner and thus indicating their successful performance regarding job creation and capital investment as a result of the provision of incentives.

On the other side, a considerable number of states – including Maine – are located in the bottom-left corner, indicating they have performed relatively weakly with regards to generating economic benefits by means of awarding incentives. The same is true for all other New England states except for Massachusetts, where companies that received incentives created just over 35,000 new jobs.

Relative Incentive Productivity – Capital Investment and Job Creation (2010-2017)

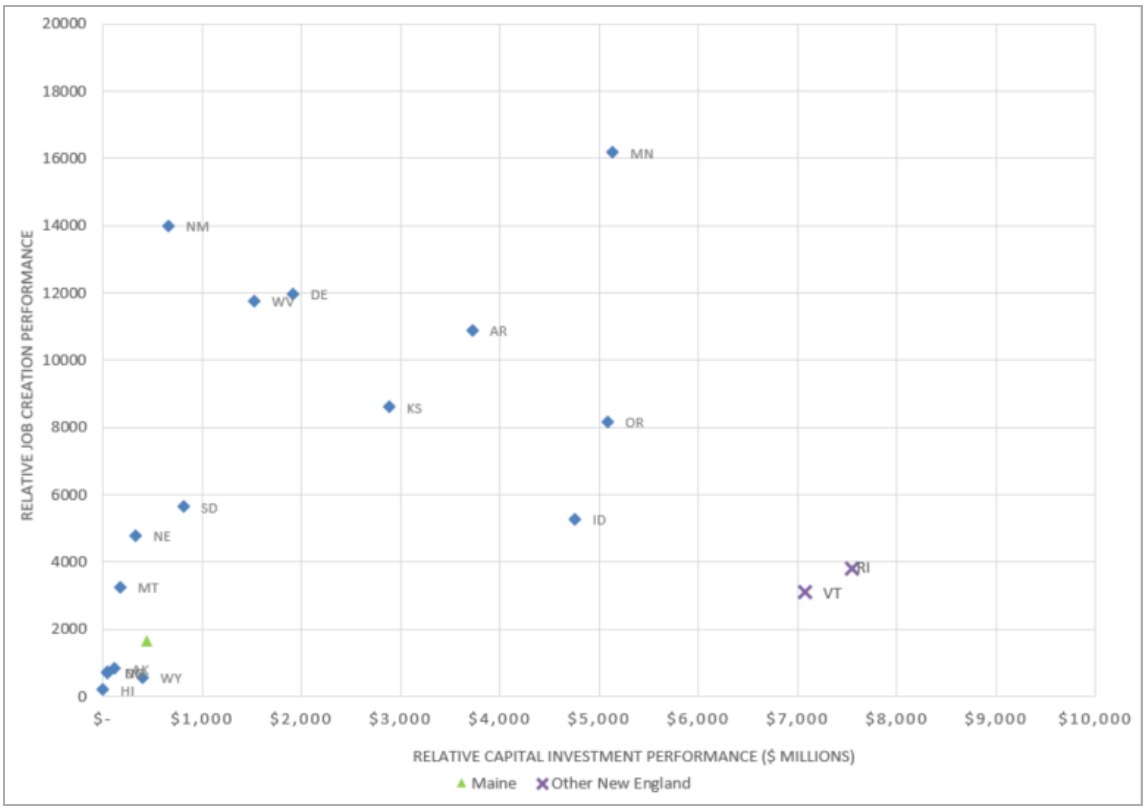


Source: IncentivesMonitor.com database

To take a closer look at the states that have performed relatively modestly, the figure below has been confined to the section of states that attracted a maximum of 20,000 new jobs in combination with a maximum of $10.0 billion of capital investment.

Maine ranks among this group of states that have performed very modestly, both for attracting new capital as well as for new job opportunities. Maine is located in the very bottom-left corner of the graph together with its New England peers New Hampshire, Rhode Island and Vermont (along with Alaska, Montana, North Dakota, Washington DC and Wyoming) indicating its moderate success. However, this should be put into perspective as these states have also generally spent a small budget on a limited number of incentives.

Relative Incentive Productivity – Capital Investment of max. $10 billion and Job Creation of max. 20,000 (2010-2017)



Source: IncentivesMonitor.com database

The following indicators can be calculated and analyzed to normalize for the budget spent on incentives:

- **Incentive per Job Created**, which is the result of dividing the total value of awarded incentives by the total number of newly created jobs per state. This indicator provides a value of what states have "paid" by incentives for one newly created job.
- **Return on Investment**, which is the result of dividing the total volume of capital investment by the total value of awarded incentives. This indicator provides a value of what the return on one dollar of incentive is. For instance, a Return of Investment of $3 means that every dollar a state spent on incentive generated a capital investment with a value multiplied by three.

Plotting these two indictors provides an overview of how states actually performed incentives-wise as these two indicators compensate for the size of the budget that has been spent on awarded incentives. In the figure below, states would ideally be located in the bottom-right corner as this indicates a relatively low value of incentive per job but a high return on investment.

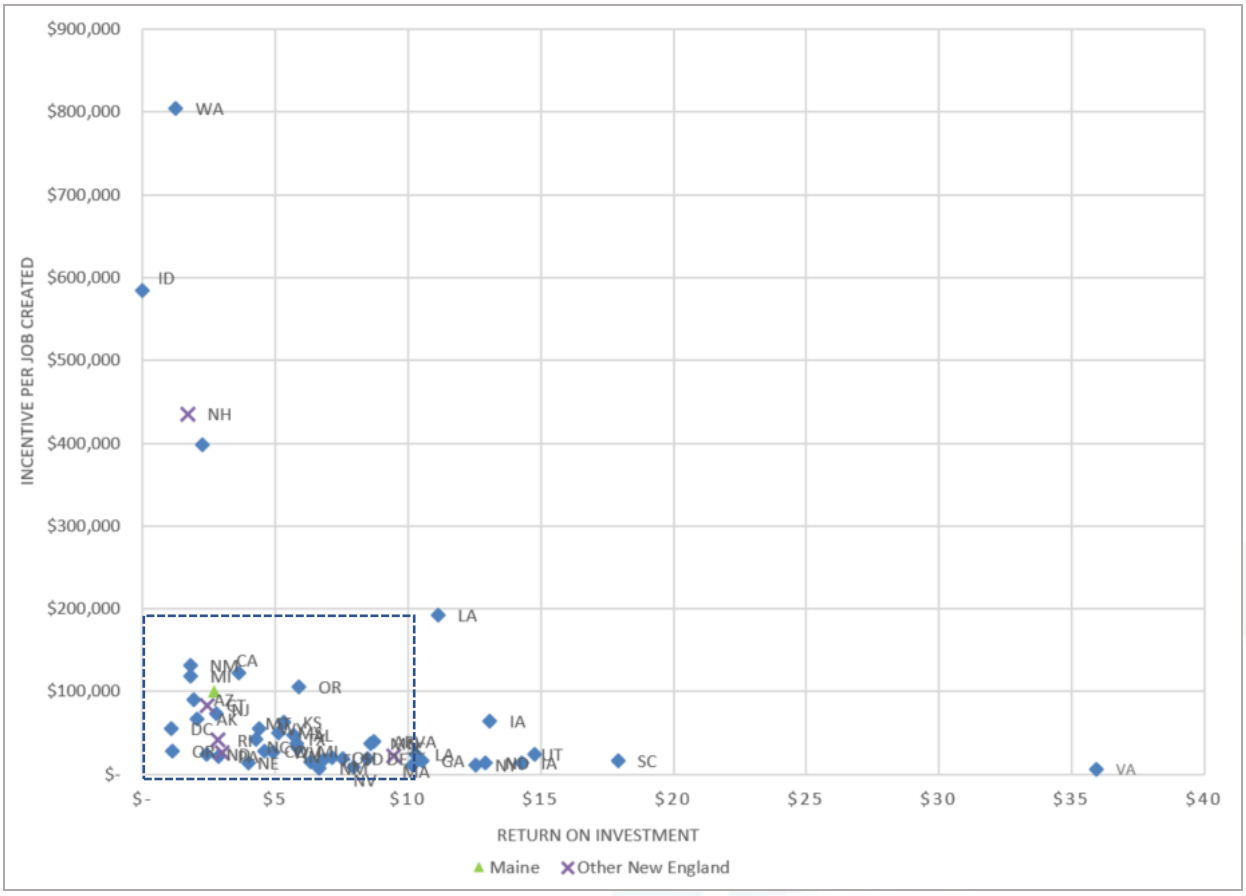
Virginia performs best from this perspective (not Louisiana, Ohio or California). For every dollar Virginia spent on incentives, it attracted $35 of capital investment. In addition, Virginia spent roughly $5,780 per newly created job. Virginia is followed – on a distance – by South Carolina and Utah who combined

relatively low values of incentives per job (below $20,000) with relatively high returns on their investment (above $10-17 per $1 of granted incentive).

On the other side of the spectrum, Washington spent over $800,000 per newly created job in combination with a return on investment just on par (i.e. $1.2 per $1 of granted incentive). This can again be related to the large incentive package the state awarded to Boeing. The same, though to a lesser extent, is true for Idaho, which also awarded a large incentive package to one particular beneficiary.

Amongst Maine's neighbors, New Hampshire's modest performance is notable with a relatively high value per newly created job (over $435,000) while Rhode Island and Massachusetts have achieved relatively strong high returns on their incentive investment with relatively low incentive values per newly created job. Maine is located in a cluster in the bottom-left corner, indicating a relatively low incentive value per newly created job. However, due to the extreme values of Washington, Idaho and New Hampshire, this graph is slightly skewed.

Relative Incentive Productivity – Incentive per Job Created and Return on Investment (2010-2017)

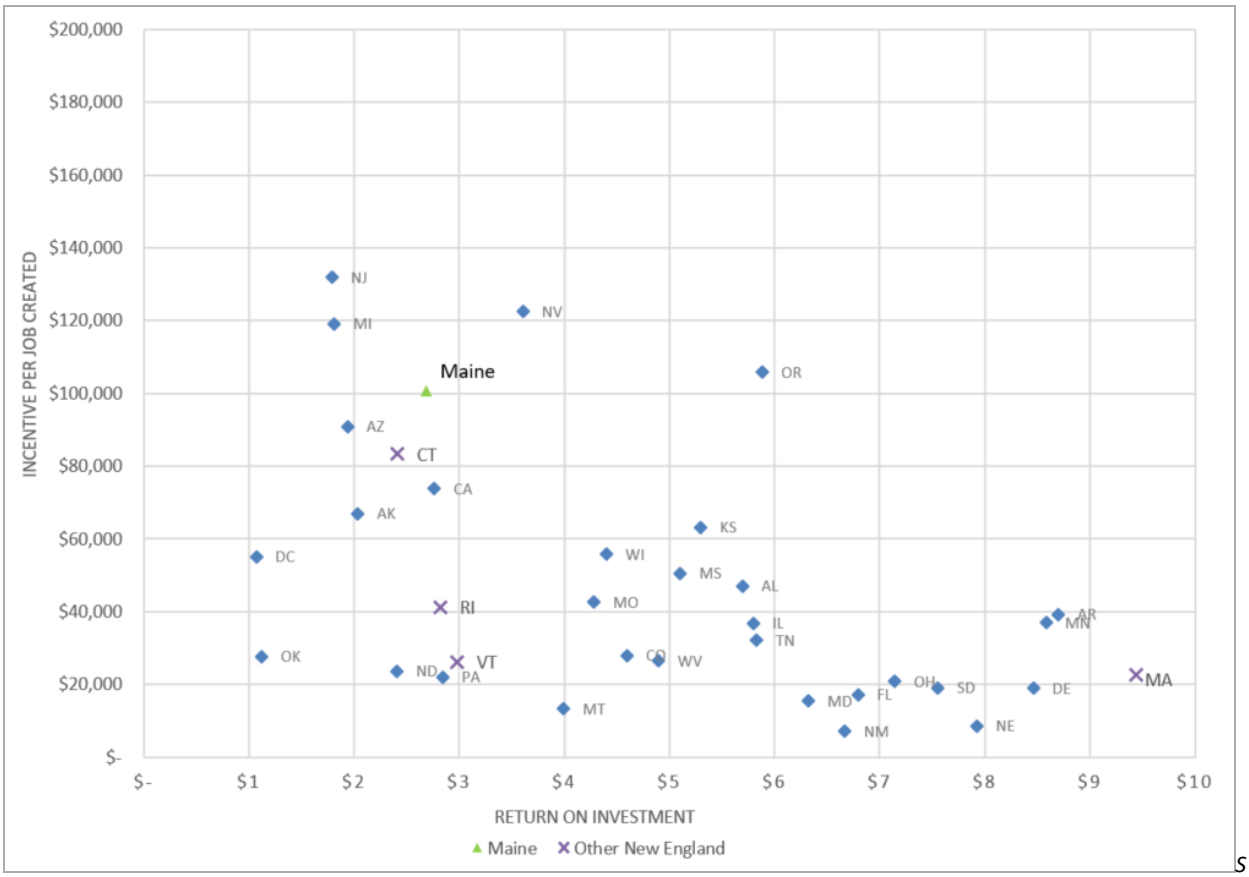


Source: IncentivesMonitor.com database

Therefore, the bracketed area of the chart with ranges from an incentive per job created of up to $200,000 combined with a maximum return on investment of $10 has been enlarged in the figure

below. This view frames Maine's performance into better perspective as it becomes clear that Maine has one of the lowest returns on investment ($2.7 for every $1 of awarded incentive) with a relatively high incentive value per newly created job ($100,813). To this extent, it performs very similar to Connecticut, Arizona, and Michigan though these states have attracted considerable larger numbers of new jobs as well as amounts of capital investment.

Relative Incentive Productivity – Incentive per Job Created of max. $200,000 and Return on Investment of max. $10 (2010-2017)

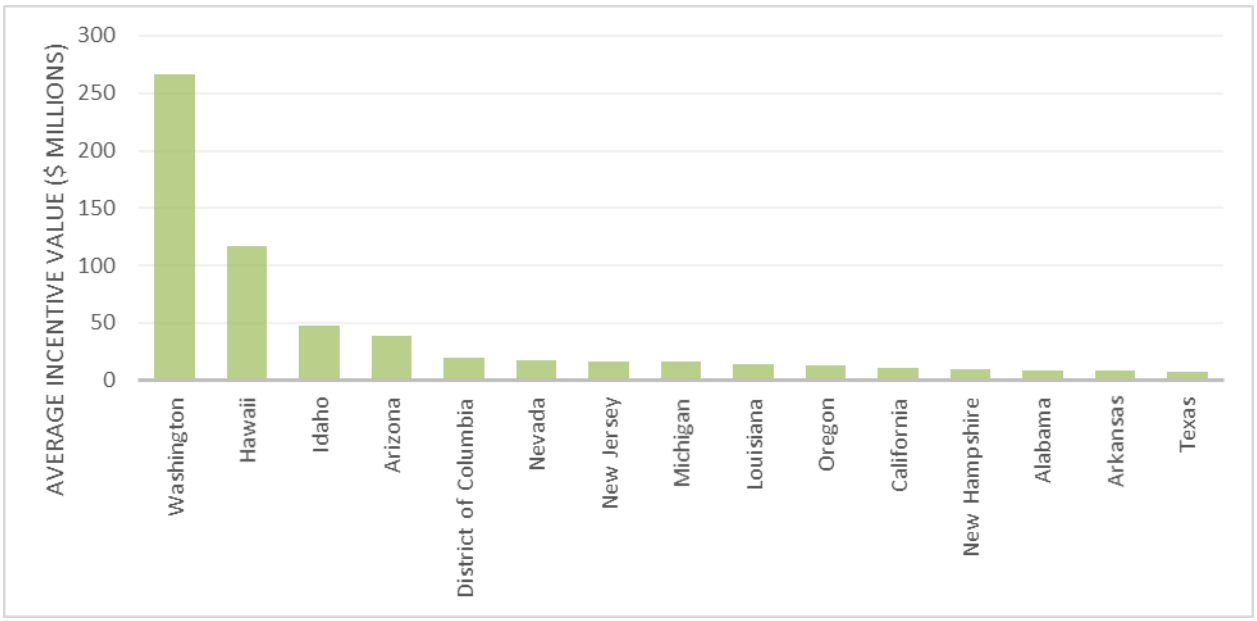


ource: IncentivesMonitor.com database

Finally, comparing the average values of awarded incentives helps further put incentive productivity into perspective. Across the US, the average awarded incentive per project equals $5.7 million. The figure below ranks the top-15 states with the highest average incentive value, while the following figure ranks the top-15 states with the lowest average incentive value. Not surprisingly, given their large incentive packages and relatively modest absolute number of awarded incentives, Washington (average $266 million) and Idaho (average $47.9 million) rank among the states that on average awarded the largest incentive packages. Other states that have awarded a limited number of incentives include Washington DC ($19.3 million) and New Hampshire ($9.3 million). Arizona, Nevada, New Jersey, Michigan, Louisiana, Oregon, and California are all states that granted a considerable number of incentives (at least 35) with an above-average incentive value of at least $10.0 million.

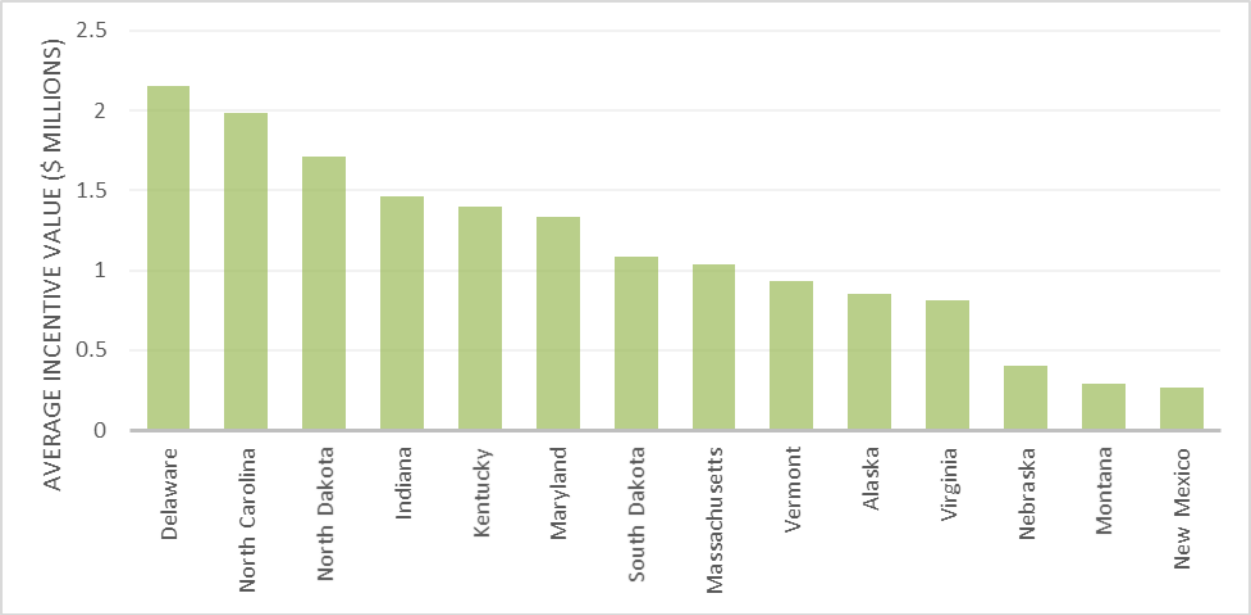
On the other hand, states that granted incentives with relatively low *values* also include a number of states that awarded a relatively large *number* of incentives. Examples include New Mexico (373 incentives with an average value of $264,000), Montana (149 incentives with an average value of $300,000), Nebraska (102 incentives with an average value of $400,000) and, particularly, Virginia, Massachusetts, Indiana, Kentucky and Maryland, which each awarded at least 350 incentives with an average value ranging just between $800,000 and $1.5 million, which is considerably below the US average.

Average Incentive Productivity – Incentive Value Top-15 (2010-2017)



Source: IncentivesMonitor.com database

Average Incentive Productivity – Incentive Value Bottom-15 (2010-2015)



Source: IncentivesMonitor.com database

Maine is ranked 23rd out of the 50 states (and Washington DC) with an average incentive value of $5.4 million. Tennessee, Georgia, Missouri, and Oklahoma all offer similar average awards.

Selected Average State Incentive Productivity – Incentive Value (2010-2017)

	Average Value per Awarded Incentive
Kansas	$7.6 million
Colorado	$7.1 million
Mississippi	$7.0 million
Wisconsin	$6.2 million
Wyoming	$6.0 million
Tennessee	$5.9 million
Georgia	$5.9 million
US Average	**$5.7 million**
Maine	$5.4 million
Missouri	$4.5 million
Oklahoma	$4.4 million
Illinois	$4.2 million
South Carolina	$3.9 million
Iowa	$3.7 million
Utah	$3.6 million
New York	$3.5 million

Source: IncentivesMonitor.com database

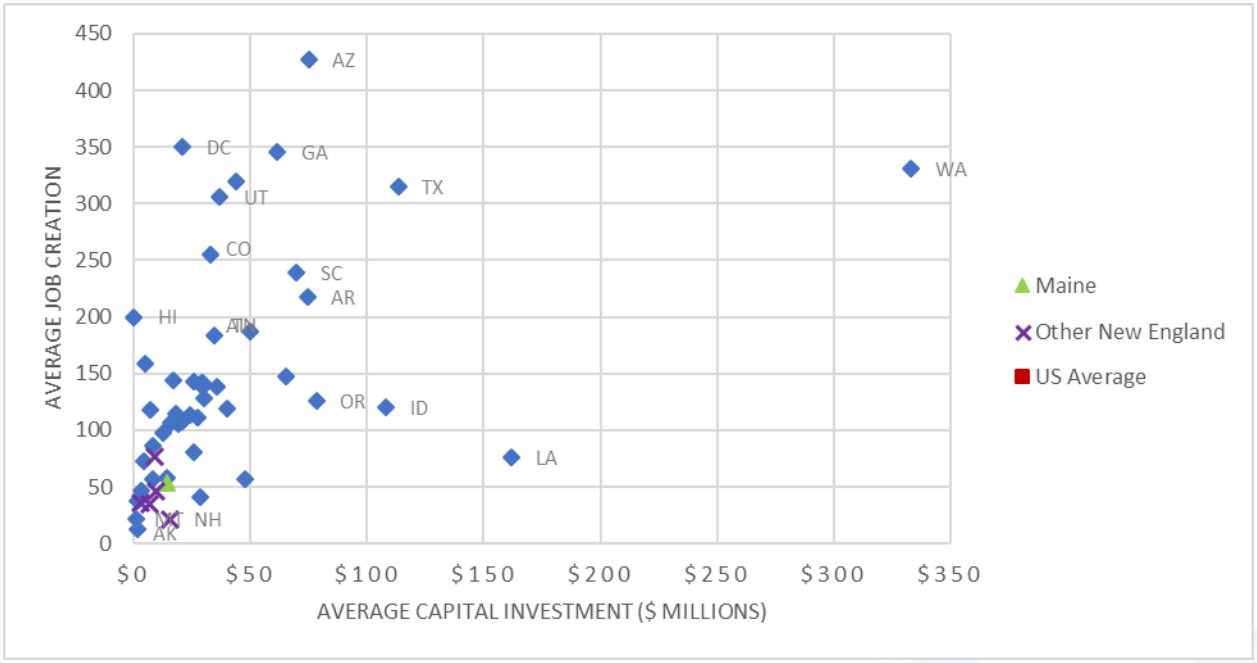
In addition to comparing the average incentive values, it is worthwhile to examine the average economic benefits that have been created per awarded incentive. An average incentive granted to a beneficiary across the US resulted in a capital investment of $31.3 million and 131 new jobs. Again, states would

typically be located in the top-right corner of the chart below when their incentives result in favorable economic benefits (i.e. high average capital investment and large average job creation).

Washington, which its substantial incentive package awarded to Boeing, comes close, with an average capital investment of $333 million and 330 new jobs. The same, though to a much lesser extent, applies to Texas, with averages of $113 million of capital investment and 315 new jobs, while incentives awarded in Louisiana seem to go to projects that are relatively capital-intensive (average of $162 million).

Arizona, with over 427 new jobs per project, ranks number one in terms of average number of new jobs per granted incentive, followed by Washington DC (350 new jobs), Georgia (346 new jobs), New York (320), Utah (371 new jobs), and Texas (315). All New England states, including Maine, score below US average of $31.3 million worth of capital investment and 131 new jobs.

Average Incentive Productivity - Capital Investment and Job Creation (2010-2017)



Source: IncentivesMonitor.com database

Maine's average capital investment and job creation per awarded incentive were $14.4 million and 53, respectively. New Hampshire garners more investment on average ($15.8 million) which Rhode Island obtains more new jobs per project (76). Maine otherwise outperforms its regional peers.

Selected Average State Incentive Productivity - Capital Investment and Job Creation (2010-2017)

	Average Capital Investment per Awarded Incentive	Average Job Creation per Awarded Incentive
District of Columbia	$20.6 million	350
Missouri	$19.2 million	105
Delaware	$18.2 million	114

	Average Capital Investment per Awarded Incentive	Average Job Creation per Awarded Incentive
Florida	$16.8 million	143
New Hampshire	$15.8 million	21
Ohio	$15.8 million	106
Maine	**$14.4 million**	**53**
Kentucky	$14.4 million	58
West Virginia	$12.6 million	97
Massachusetts	$9.8 million	46
Rhode Island	$8.9 million	76
Maryland	$8.4 million	86

Source: IncentivesMonitor.com database

The incentive productivity of the New England states is summarized in the table below. In total, the five states have awarded incentives to 1,764 projects, collectively representing a value of $3.6 billion. These incentives contributed to the New England economy by attracting investment worth $14.64 billion and over 72,000 new jobs.

Massachusetts has the lion's share of economic activity of the region (51% of the total Gross State Product) but is on par with Connecticut for the largest share of number and value of awarded incentives, 46.0% and 43.5%, respectively. Connecticut granted 767 incentives worth $2.2 billion while Massachusetts awarded incentives to more projects (811), at a much lower incentive amount (only $839 million).

It appears that the incentives awarded in Massachusetts have been far more effective than incentives granted in Connecticut. Massachusetts incentives generated $7.92 billion worth of capital investment (54.0%) against $5.30 in Connecticut (36%). Likewise, Massachusetts incentive beneficiaries created 37,219 new jobs (51.3%) against 26,322 new jobs (36.3%) created by Connecticut recipients.

Maine's incentive productivity can be grouped together with that of New Hampshire, Rhode Island and Vermont (thought Vermont awarded just slightly less than the number of projects that Maine, New Hampshire and Rhode Island together). Maine outperforms the other three states in terms of total volume of capital investment (3.05% against 1.9%, 3.0% and 1.7%) though Maine created relatively fewer jobs (2.3%) than either Rhode Island (5.3%) or Vermont (4.27%). It should be noted Maine spent more money on incentives than Rhode Island and Vermont, but less than New Hampshire (4.6% against 4.4%, 2.3%, and 4.6%).

New England Incentive Productivity (2007-2017)

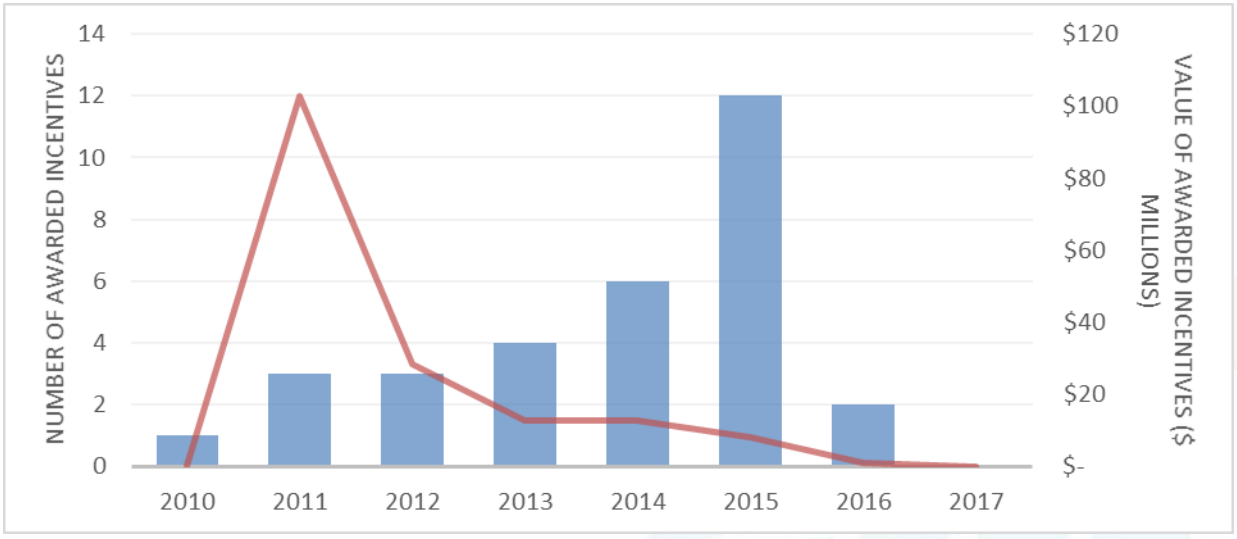
State	Gross State Product		No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
CT	$259.9 bln.	26.23%	767	43.48%	$2,196.8 mln.	60.88%	$5,303.6 mln.	36.23%	26,332	36.32%
ME	**$59.3 bln.**	**5.98%**	**31**	**1.76%**	**$166.1 mln.**	**4.60%**	**$445.8 mln.**	**3.05%**	**1,648**	**2.27%**
MA	$505.8 bln.	51.05%	811	45.98%	$839.0 mln.	23.25%	$7,919.2 mln.	54.09%	37,219	51.34%
NH	$77.2 bln.	7.79%	18	1.02%	$167.6 mln.	4.64%	$284.3 mln.	1.94%	385	0.53%
RI	$57.5 bln.	5.81%	50	2.83%	$157.6 mln.	4.37%	$445.1 mln.	3.04%	3,819	5.27%
VT	$31.1 bln.	3.14%	87	4.93%	$81.2 mln.	2.25%	$242.2 mln.	1.65%	3,095	4.27%
New England	*$990.8 bln.*	*100.00 %*	*1,764*	*100.00 %*	*$3,608.3 mln.*	*100.00 %*	*$14.64 bln.*	*100.00 %*	*72,498*	*100.00 %*

Gross State Product in 2016; derived from Bureau of Economic Analysis

Source: IncentivesMonitor.com database

A large number of the 31 incentives that have been captured for Maine occurred in 2015 (12) against only one in 2010, as depicted in the figure below. The number of incentives has gradually increased from 2010 to 2015 before dropping off precipitously in 2016. The trend for the total value of the 28 awarded incentives shows a different pattern with a peak in 2011 ($102.6 million) and a gradual decline of the total value of awarded incentives. This implies the average value of an incentive awarded in Maine has decreased over the last five years. The peak in 2011 was due to a $102.0 million incentive package granted to an investment in the renewable energy sector.

Maine Incentive Productivity Trends – Number and Total Value of Awarded Incentives (2010-2017)

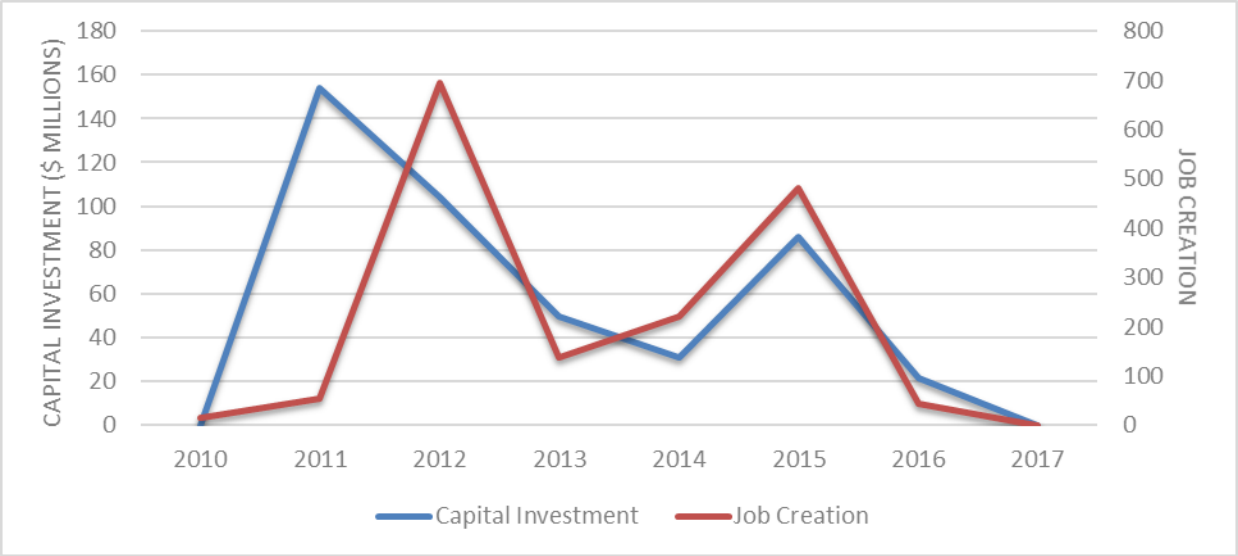


Source: IncentivesMonitor.com database

The investment in the renewable energy sector is also noticeable in the figure below, which plots both the total capital investment and total job creation for Maine as a result of the 31 granted incentives. The similarity between the trends in capital investment on the one hand and job creation on the other hand is striking. Coming from low values in 2010, 2011 was a bumper year for capital investment (partly

due to the large renewable energy investment) while 2012 peaked in terms of number of newly created jobs (due to an investment in the aerospace industry creating 600 new jobs). From 2013 onwards, both indicators run parallel with a gradual increasing trend in 2015, followed by a drop-off as overall incentive activity declined.

Maine Incentive Productivity Trends – Capital Investment and Job Creation (2010-2017)



Source: IncentivesMonitor.com database

The table below provides an overview of the industries Maine has awarded incentives to. The food and drink industry has been a priority target with eight incentives (or 25.8%) out of the 31, equaling a total value of $2.2 million (or 1.35%).

This industry is followed by the life sciences, equaling a total value of $5.2 million (or 3.1%), and aerospace, defense and marine industry with five incentives (or 16.1%), equaling a total value of $33.7 million (or 20.3%). The six incentives awarded to companies in the life sciences have created a disproportionate number of new jobs (464 or 28.2%). The five incentives granted to aerospace, defense and marine industry beneficiaries have translated this into disproportionately large economic benefits more broadly, representing 30.8% of the total capital investment ($137.1 million) and 47.9% of the total newly created jobs (790 new jobs). The investment project in the renewable energy sector is clearly visible, which accounts for over 40% of the total capital investment and almost 70% of the total value of awarded incentives.

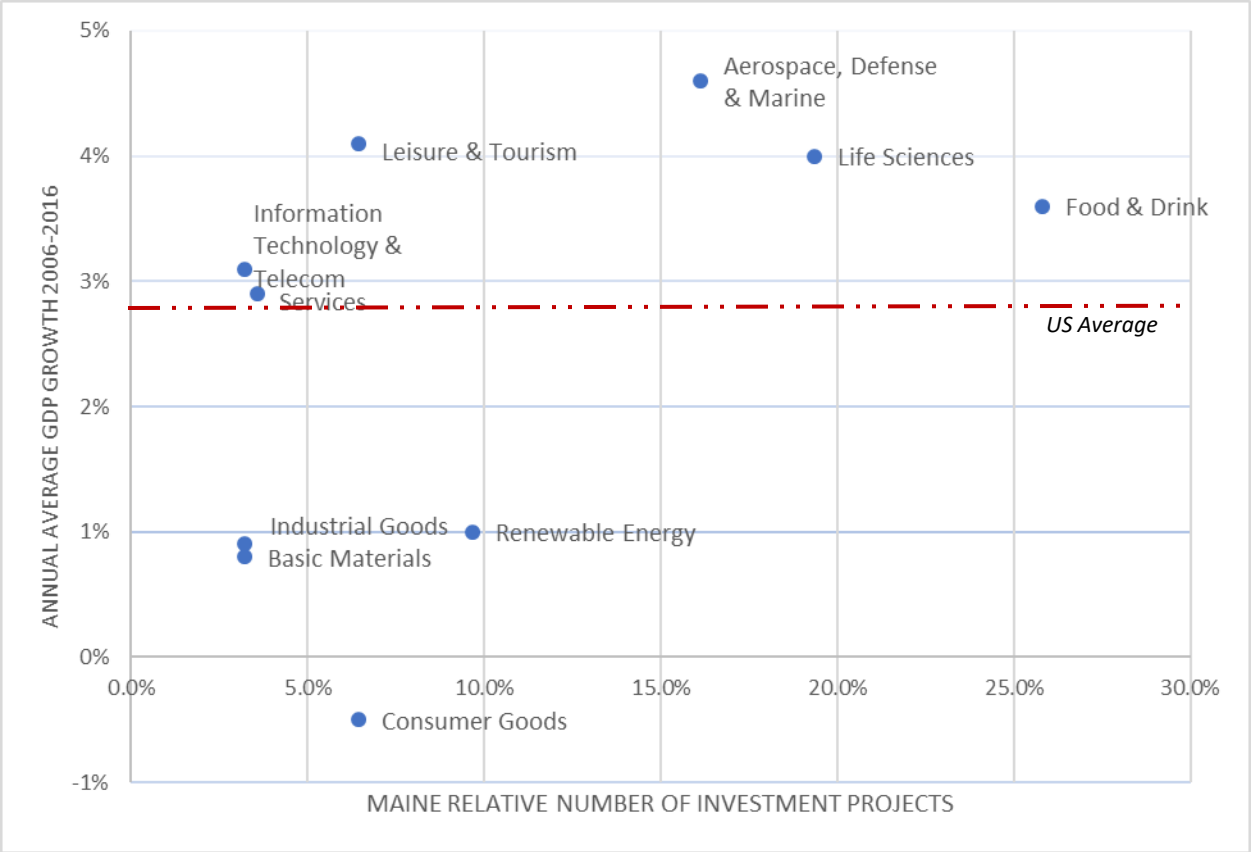
Maine Incentive Productivity Trends – Industry (2010-2017)

Industry	No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Food & Drink	8	25.81%	$2.2 mln.	1.35%	$5.0 mln.	1.11%	96	5.83%
Life Sciences	6	19.35%	$5.2 mln.	3.12%	$102.5 mln.	22.99%	464	28.16%
Aerospace, Defense and Marine (ADM)	5	16.13%	$33.7 mln.	20.30%	$137.1 mln.	30.75%	790	47.94%
Renewable Energy	3	9.68%	$116.3 mln.	69.97%	$183.3 mln.	41.11%	218	13.23%
Consumer Goods	2	6.45%	$0.2 mln.	0.14%	$0.2 mln.	0.03%	8	0.49%
Leisure & Tourism	2	6.45%	$7.2 mln.	4.30%	$12.3 mln.	2.76%	22	1.33%
Services	2	6.45%	$0.8 mln.	0.51%	$4.0 mln.	0.90%	33	2.00%
Basic Materials	1	3.23%	$0.2 mln.	0.14%	$0.8 mln.	0.17%	8	0.49%
Industrial Goods	1	3.23%	$0.1 mln.	0.07%	$0.3 mln.	0.06%	4	0.24%
Information Technology & Telecom (ITT)	1	3.23%	$0.2 mln.	0.09%	$0.1 mln.	0.12%	5	0.30%
Total	**31**	**100.00%**	**$166.1 mln.**	**100.00%**	**$445.8 mln.**	**100.00%**	**1,648**	**100.00%**

Source: IncentivesMonitor.com database

Comparing the strongest growing US industries with the allocation of Maine incentives indicates potential opportunities for awarding incentives and targeting. The figure below plots the annual average GDP growth of a number of industries in the US against the number of incentives that have been awarded. Maine has awarded most of its incentives to the food and drink industry. This industry has experience an annual GDP growth of 3.6%, which is above the US average of 2.9%.

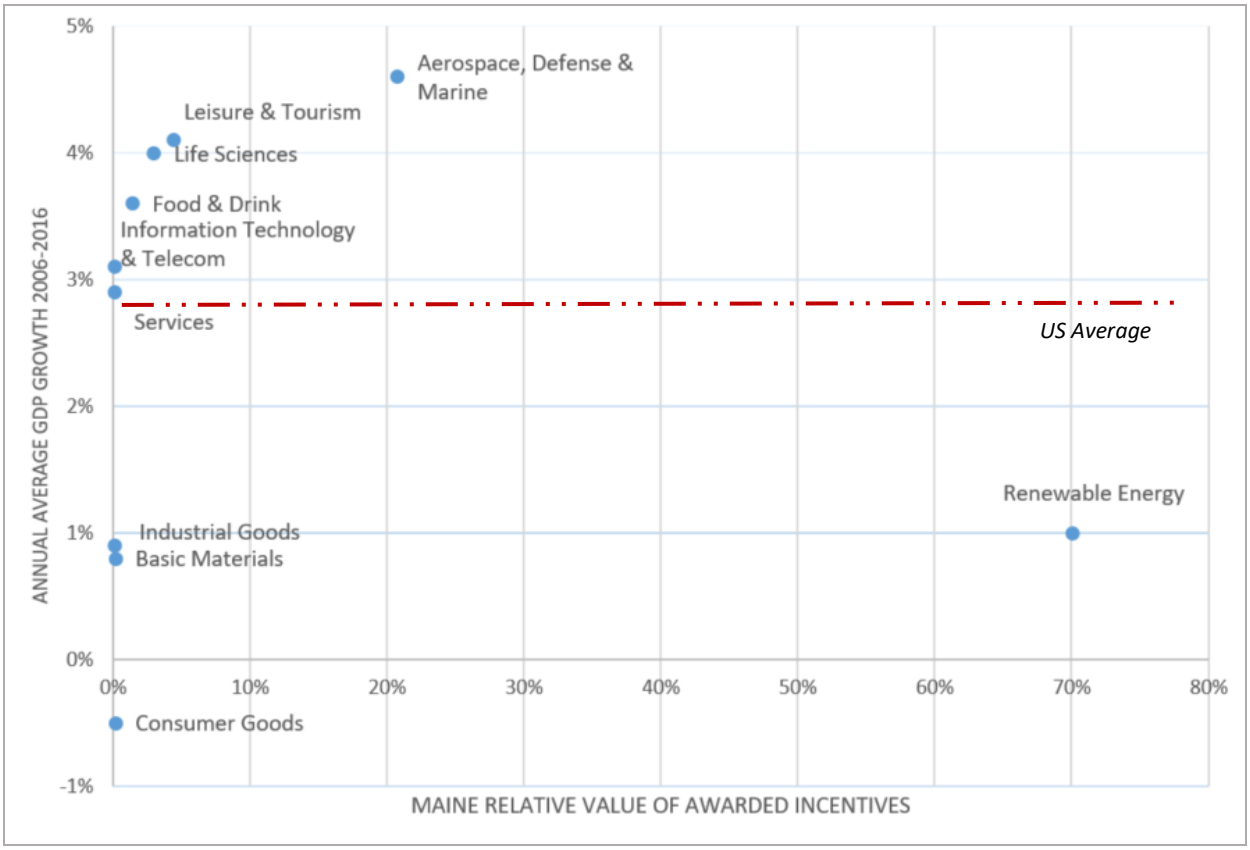
Maine Incentive Productivity Trends – Relative Number of Awarded Incentives (2010-2017) and US Average Annual GDP Growth per Industry (2006-2016)



Source: IncentivesMonitor.com database and authors' calculations based on data derived from Bureau of Economic Analysis

The figure below shows the annual average GDP growth per industry vis-à-vis the actual value of the awarded incentives. Clearly, 70% of the total value of incentives in Maine has been allocated to the renewable energy industry despite the fact that this industry is growing slightly below the US average of 3.4%. The aerospace, defense and marine industry rank second with just over 20% of the total budget spent on incentives allocated for recipients in this industry. The information, technology and telecom industry, with an annual average GDP growth rate of 7.3%, offers considerable opportunities for a larger incentives budget since only 0.1% of the total value of incentives in Maine has been allocated to beneficiaries in this industry.

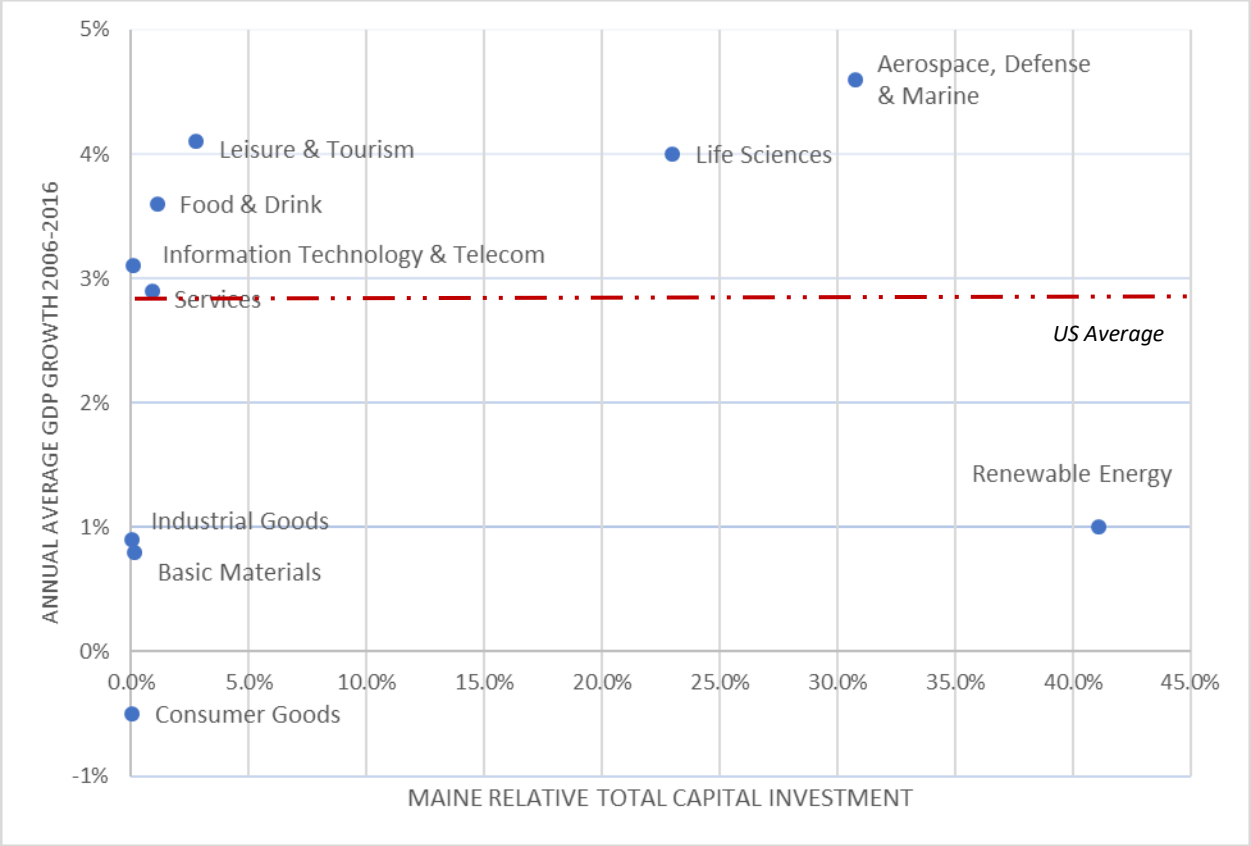
Maine Incentive Productivity Trends – Relative Value of Awarded Incentives (2010-2017) and US Average Annual GDP Growth per Industry (2006-2016)



Source: IncentivesMonitor.com database and authors' calculations based on data derived from Bureau of Economic Analysis

Comparing the shares of the total generated capital investment (as a result of the awarded incentives with the average annual GDP growth per industry) reveals which industry has (more) potential to attract capital investment from by means of incentives. The figure below points to the fact that incentive beneficiaries within the renewable energy industry and the life sciences accounted for 41% and 23% of the total attracted capital investment while these industries have experienced slightly above-average growth rates (i.e. 4%). Faster growing sectors such as the information, technology and telecom industry and, to a lesser extent, aerospace, defense and marine industry (from which the state has already realized 32% of total US capital investment), food and drink industry and leisure and tourism industry (despite lower annual average GDP growth rates), may prove to be target as the potential of these growing industries with regards to attracting capital have not been fully realized.

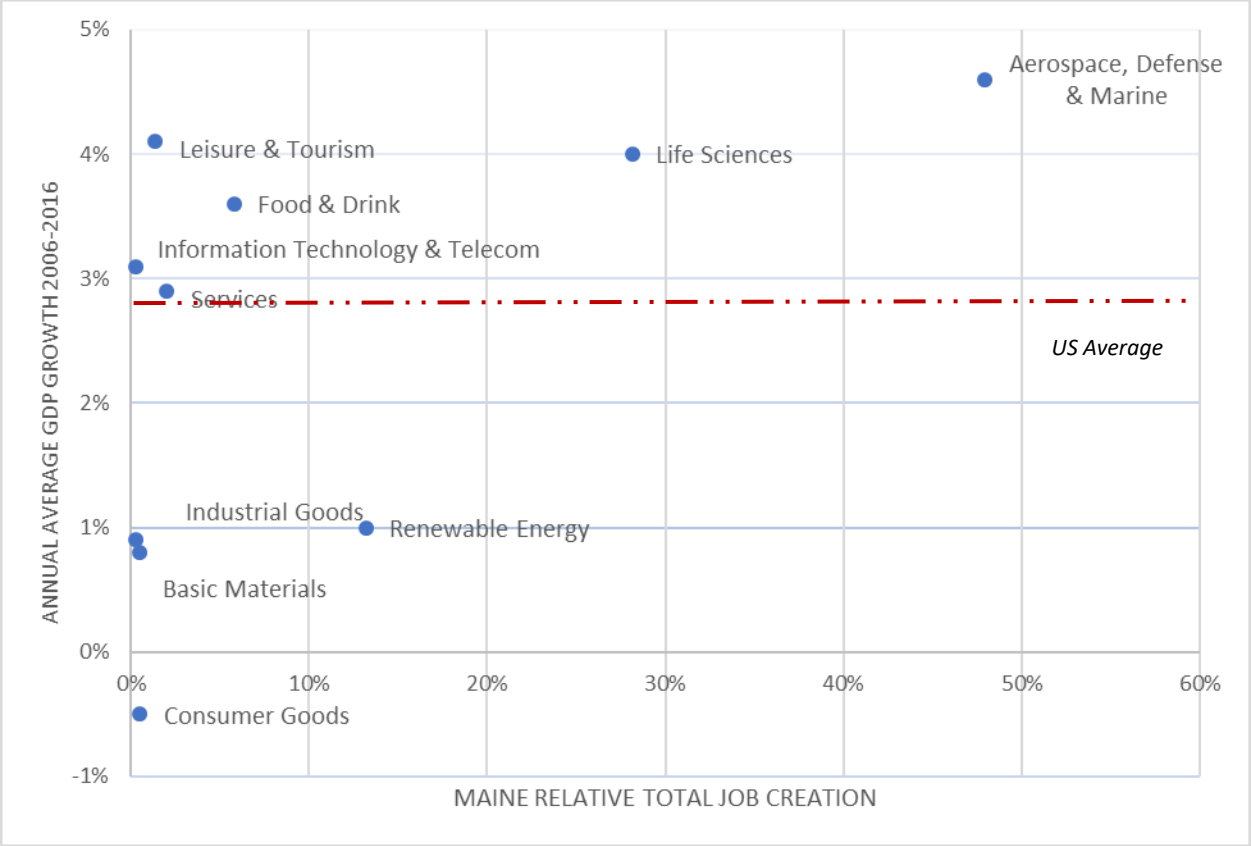
Maine Incentive Productivity Trends – Relative Total Capital Investment (2010-2017) and US Average Annual GDP Growth per Industry (2006-2016)



Source: IncentivesMonitor.com database and authors' calculations based on data derived from Bureau of Economic Analysis

The figure below underlines the relatively weak targeting of the information, technology and telecom industry of Maine's incentive programs. The incentives in Maine that have been awarded to beneficiaries in this industry have only accounted for 0.3% of the total job creation as a result of the provision of incentives while this industry is one of the fastest growing industries. It seems Maine's incentives have realized their job creation potential with regards to the aerospace, defense and marine industry as this industry – next to the information, technology and telecom industry – is the fastest growing industry. Here, companies in the aerospace, defense and marine industry that received incentives in Maine accounted for nearly half of the total job creation of all Maine incentive recipients.

Maine Incentive Productivity Trends – Relative Total Job Creation (2010-2017) and US Average Annual GDP Growth per Industry (2006-2016)



Source: IncentivesMonitor.com database and authors' calculations based on data derived from Bureau of Economic Analysis

With regards to the business activities Maine's incentives have targeted, it is clear the manufacturing sector represents the strongest targeted business activity with 17 projects receiving incentives (54.8%), representing $34.8 million (or 20.9%). This sector is however not the largest in terms of value that has been allocated to incentives as the electricity and extraction sector (i.e. the renewable energy investment) represents the largest share of the budget ($116.3 million or 70.0%).

Business functions that have generated disproportionate economic benefits include the manufacturing sector ($129.4 million of capital investment or 29% and 892 new jobs or 54.1% against 21% of the total budget spent on incentives), construction and infrastructure ($48.3 million of capital investment or 10.8% against 7% of the total budget spent on incentives) and, particularly, headquarters ($79.0 million of capital investment or 17.7% and 390 new jobs or 24% against 1.4% of the total budget spent on incentives).

Maine State Incentive Productivity Trends – Business Activity (2010-2017)

Business Activity	No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Manufacturing	17	54.84%	$34.8 mln.	20.93%	$129.4 mln.	29.03%	892	54.13%
Construction & Infrastructure	4	12.90%	$11.5 mln.	6.95%	$48.3 mln.	10.83%	50	3.03%
Business Services	3	9.68%	$.6 mln.	0.33%	$.5 mln.	0.12%	24	1.46%
Electricity & Extraction	3	9.68%	$116.3 mln.	69.97%	$183.3 mln.	41.11%	218	13.23%
Headquarters (HQ)	2	6.45%	$2.3 mln.	1.40%	$79. mln.	17.72%	390	23.67%
Research, Design & Development (RDD)	1	3.23%	$.6 mln.	0.35%	$5. mln.	1.12%	70	4.25%
Warehousing and Distribution	1	3.23%	$.1 mln.	0.07%	$.3 mln.	0.06%	4	0.24%
Total	31	100.00%	$166.1 mln.	100.00%	$445.8 mln.	100.00%	1,648	100.00%

Source: IncentivesMonitor.com database

The vast majority of incentives have been awarded to domestic investors. Apart from one Canadian recipient, the table below confirms Maine's overreliance upon targeting inter-state investment.

Maine Incentive Productivity Trends –Source Country (2010-2017)

Source Country	No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Canada	1	3.2%	$1.4 mln.	0.8%	$0.08 mln.	0.0%	50	3.0%
USA	30	96.8%	$164.74 mln.	99.2%	$445.75 mln.	100.0%	1,598	97.0%
Total	**31**	**100.0%**	**$166.14 mln.**	**100.0%**	**$445.83 mln.**	**100.0%**	**1,648**	**100.0%**

Source: IncentivesMonitor.com database

The table below provides the geographical distribution of the 31 incentives that have been awarded across Maine. Apart from Portland, Brunswick, Gardiner, Madawaska and Presque Isle, no other community awarded more than one incentive. Clearly, the largest incentive package ($102.0 million or 61.4%) has been awarded in Roxbury, generating $153.0 million (or 34.3%) of capital investment but only eight new jobs. This can be attributed to the capital-intensive nature of the investment project, which is in the renewable energy industry. Other communities in which incentive packages exceeding $1 million have been awarded include Brunswick ($28.1 million or 16.9%), Presque Isle ($2.2 million or 1.4%), Bath ($3.7 million or 2.3%), Eastport ($1.4 million or 0.9%) and Lewiston ($7.0 million or 4.3%). Largest economic benefits have been realized in Brunswick ($101.4 million of capital investment and 615 new jobs), Bangor (70 new jobs), Bath ($32.0 million of capital investment), East Boothbay (70 new jobs) and Lewiston ($12.3 million of capital investment).

Maine Incentive Productivity Trends – Destination City (2010-2017)

Destination City	No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Portland	3	9.7%	$2.9 mln.	1.7%	$17.5 mln.	3.9%	38	2.3%
Brunswick	2	6.5%	$28.1 mln.	16.9%	$101.4 mln.	22.7%	615	37.3%
Gardiner	2	6.5%	$.8 mln.	0.5%	$2.2 mln.	0.5%	28	1.7%
Madawaska	2	6.5%	$.3 mln.	0.2%	$. mln.	0.0%	10	0.6%
Presque Isle	2	6.5%	$2.2 mln.	1.3%	$6. mln.	1.3%	46	2.8%
Alexander	1	3.2%	$.1 mln.	0.1%	$. mln.	0.0%	7	0.4%
Bangor	1	3.2%	$.6 mln.	0.3%	$5. mln.	1.1%	70	4.2%
Bath	1	3.2%	$3.7 mln.	2.2%	$32. mln.	7.2%	0	0.0%
Caribou	1	3.2%	$.2 mln.	0.1%	$.5 mln.	0.1%	5	0.3%
Cumberland	1	3.2%	$.5 mln.	0.3%	$4. mln.	0.9%	25	1.5%
East Boothbay	1	3.2%	$.3 mln.	0.2%	$. mln.	0.0%	70	4.2%
Eastport	1	3.2%	$1.4 mln.	0.8%	$.1 mln.	0.0%	50	3.0%
Farmington	1	3.2%	$.8 mln.	0.5%	$4. mln.	0.9%	30	1.8%
Fort Kent	1	3.2%	$.1 mln.	0.1%	$.2 mln.	0.0%	4	0.2%
Frenchville	1	3.2%	$.1 mln.	0.1%	$.3 mln.	0.1%	4	0.2%
Lewiston	1	3.2%	$7. mln.	4.2%	$12.3 mln.	2.8%	17	1.0%
New Canada	1	3.2%	$.1 mln.	0.1%	$. mln.	0.0%	3	0.2%
Rockport	1	3.2%	$.3 mln.	0.2%	$. mln.	0.0%	0	0.0%
Roxbury	1	3.2%	$102. mln.	61.4%	$153. mln.	34.3%	8	0.5%
Sanford	1	3.2%	$.2 mln.	0.1%	$.8 mln.	0.2%	8	0.5%
Shirley	1	3.2%	$.1 mln.	0.0%	$.2 mln.	0.0%	3	0.2%
St Agatha	1	3.2%	$.1 mln.	0.0%	$.1 mln.	0.0%	2	0.1%
Van Buren	1	3.2%	$.5 mln.	0.3%	$1. mln.	0.2%	40	2.4%
Multiple locations	1	3.2%	$1.8 mln.	1.1%	$75. mln.	16.8%	365	22.1%
Unmapped	1	3.2%	$12. mln.	7.2%	$30.3 mln.	6.8%	200	12.1%
TOTAL	**31**	**100%**	**$166.1 mln.**	**100%**	**$445.8 mln.**	**100%**	**1,648**	**100%**

Source: IncentivesMonitor.com database

Finally, the table below reveals the largest incentive recipients within the state of Maine. Record Hill Wind is a company which invested in a renewable energy project worth $153.0 million and which has been granted an incentive package of $102.0 million (61.3%) consisting of a loan and a tax credit. Kestrel Aircraft Company invested in an aerospace project, which was originally projected to create 600 new jobs (or 36.4%). The company received $27.8 million worth of incentives (16.7%). Another energy investment made by Athens Energy has been awarded an incentive of $12.0 million (7.2%), which created an additional 200 jobs (12.1%).

Maine Incentive Productivity Trends – Top-10 Incentive Recipients and Investors (2010-2017)

Investor	No. of Awarded Incentives		Total Value of Awarded Incentives		Total Capital Investment		Total Job Creation	
	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.	Abs.	Rel.
Record Hill Wind	1	3.23%	$102.0 mln.	61.39%	$153.0 mln.	34.32%	8	0.49%
Kestrel Aircraft Company	1	3.23%	$27.8 mln.	16.70%	$100.0 mln.	22.43%	600	36.41%
Athens Energy	1	3.23%	$12.0 mln.	7.22%	$30.3 mln.	6.80%	200	12.14%
Lincoln Street Hoteliers	1	3.23%	$7.0 mln.	4.21%	$12.3 mln.	2.76%	17	1.03%
Bath Iron Works	1	3.23%	$3.7 mln.	2.23%	$32.0 mln.	7.18%	0	0.00%
Ocean Renewable Power Company	1	3.23%	$2.3 mln.	1.35%	$0.0 mln.	0.00%	10	0.61%
The Jackson Laboratory	1	3.23%	$1.8 mln.	1.10%	$75.0 mln.	16.82%	365	22.15%
Acme-Monaco	1	3.23%	$1.6 mln.	0.93%	$3.0 mln.	0.67%	23	1.40%
Millennium Marine	1	3.23%	$1.4 mln.	0.84%	$0.08 mln.	0.02%	50	3.03%
Woodlands Senior Living	1	3.23%	$.75 mln.	0.45%	$4.0 mln.	0.90%	30	1.82%
Others	21	67.74%	$5.9 mln.	3.56%	$36.15 mln.	8.11%	345	20.93%
Total	31	100.00%	$166.1 mln.	100.00%	$445.8 mln.	100.00%	1,648	100.00%

Source: IncentivesMonitor.com database

Appendix L – Benchmark 4 - Transparency in Incentives

US states vary considerably with regards to their public disclosure of information on granted incentives, beneficiaries, value of incentives, and the socio-economic and financial performance of their incentive programs. To shed more light on the openness and data availability of incentive programs across US states, ICA developed the Incentive Data Availability Index in 2013.

The objective of the Data Availability Index is multi-fold. Firstly, the Index contributes to higher transparency of incentives as it provides an assessment of US states' incentive regime productivity. Full disclosure of incentive information among all US states could also mitigate or reduce the process of a "race to the bottom", in which different jurisdictions fiercely compete against each other on the amount of incentives rather than the quality of their incentive package and potential economic multiplier effects for their communities.

Secondly, the Index functions as an instrument for legislatures, authorities, and policy-makers concerned with incentive programs across the US to better evaluate the openness of their incentive program(s) and compare the performance of their incentive regimes against peer states. Data and analyses from the Index enable law- and policy-makers to make more well-informed decisions with regards to the incentive program's design and evaluation mechanism.

Finally, the Index has the power to better inform potential investors about incentive opportunities in their sector and business activity for a specific state or region of the US. After all, a more utilized and documented incentive program is typically more easily accessible.

Methodology

To produce the Incentive Data Availability Index, IncentivesMonitor.com data has been analyzed at the state level. The process to construct the Index consists of four steps.

Step 1 – Calculate values for each indicator

For each state, the values for three indicators have been collected and calculated. These indicators include:

- **Indicator 1**: Number of Awarded Incentives;
- **Indicator 2**: Total Value of Capital Investment (attracted as a result of the awarded incentives); and
- **Indicator 3**: Total Number of Newly Created Jobs (created as a result of the awarded incentives). It should be noted here that this evaluation method handicaps smaller jurisdictions that, due to their economic size, cannot award as many incentives as some of the larger states. Still, by demonstrating more incentive awards and the amount of capital investment and job creation that they bring, the Data Availability Index can help both public and private entities eliminate the risks of unknown factors. It helps both become more comfortable with and have knowledge about the returns that incentives deals can provide in particular jurisdictions.

Example
For Maine (in 2013), this would lead to the following values:

Table 1

Number of Awarded Incentives	Total Value of Capital Investment	Total Number of Newly Created Jobs
8	$338.0 mln.	814

Step 2 – Convert each indicator value into state rankings

The value of each indicator will be converted into a national ranking, where the state with the highest value ranks first (No. 1) while the state with the lowest value ranks last (No. 50). The ranking of the number of awarded incentives (i.e. Indicator 1) forms the baseline of the Index, which is then measured and verified against the ranking of the two other indicators (i.e. Indicator 2 and Indicator 3).

Example
For Maine (in 2013), the scores will be converted which results in the following rankings:

Table 2

Number of Awarded Incentives		Total Value of Capital Investment		Total Number of Newly Created Jobs	
Value	Rank	Value	Rank	Value	Rank
8	46	$338.0 mln.	40	814	43

Step 3 – Calculate total scores

The third step involves calculating the total scores for rankings of the three indicators. This yields the final score per state.

Example
For Maine (in 2013), this would yield the following score:

$$\frac{(46 + 40 + 43)}{3} = \mathbf{43.0}$$

Step 4 – Produce final Index

The final step includes ranking the total scores and clustering these total scores. This results in the final Incentive Data Availability Index. States are ranked by averaging the ranks of the three indicators.

- **Green**: scores from 1.0 up to and including 16.9. Includes states with high incentives data availability that frequently disclose information on awarded incentives.

- **Amber**: scores from 17.0 up to and including 33.9. Includes states with moderate or average incentives data availability.
- **Red**: scores from 34.0 up to and including 50.0. Includes states with very little or absent incentives data availability.

Example
Maine's score of 43.0 (in 2013) would rank the state 46th out of 50, placing it in the red cluster.

The same procedure has been repeated for subsequent years. The extended time span enables us to perform historic comparisons (e.g. between 2013 and 2017) and contributes to the robustness of the Index.

Transparency Index Results

The table below portrays the results of the Data Availability Index for 2017. Maine is ranked 46th together with Alaska, Hawaii, Nebraska, and Wyoming. IncentivesMonitor.com did not record any incentive for any of these five states for 2017. Consequently, no score can be calculated leading to the last rank for these five states.

The only state in New England making it to tier of high data availability states is Massachusetts (14th) and is followed by Connecticut (17th), Rhode Island (36th), Vermont (37th), and New Hampshire (45th). Maine ranks rather similarly to the last three states.

Incentive Data Availability Index 2017

Rank	State	Score	Rank	State	Score	Rank	State	Score
1	New York	2.3	16	South Carolina	17.0	33	Idaho	31.3
2	California	3.0	17	Connecticut	17.7	34	Montana	32.3
3	Kentucky	5.3	17	Iowa	17.7	35	Kansas	34.3
4	Michigan	6.0	19	Utah	18.0	36	Rhode Island	34.7
5	Wisconsin	6.7	20	Missouri	18.7	37	Vermont	36.0
6	North Carolina	7.0	21	Georgia	20.7	38	Oklahoma	37.0
7	Ohio	7.7	22	Florida	22.0	39	Delaware	38.3
8	Indiana	8.0	23	Louisiana	23.3	40	West Virginia	38.7
9	Texas	8.7	24	Illinois	25.0	41	South Dakota	40.7
10	Virginia	11.3	25	Alabama	25.7	42	Mississippi	41.7
11	Pennsylvania	12.3	26	Arkansas	26.3	43	Washington	42.3
12	Colorado	14.0	27	Nevada	26.7	44	North Dakota	42.7
12	New Jersey	14.0	28	Arizona	27.0	45	New Hampshire	43.3
14	Massachusetts	14.3	28	Maryland	27.0	46	Alaska	.
15	Tennessee	15.3	28	Minnesota	27.0	46	Hawaii	.
			31	New Mexico	30.3	46	Nebraska	.
			31	Oregon	30.3	46	Maine	.
						46	Wyoming	.

Source: Investment Consulting Associates – ICA (2018), based on IncentivesMonitor.com (2018)

Comparing the results of the Index of 2017 with the first edition of 2013 may reveal which states have improved the productivity of incentive programs. The average score of 2013 equaled 25.5, while 2017

averaged 22.9. At first sight, this may indicate that states are more active with their incentives programs than they were just a few years ago. However, it should be noted the average score of 22.9 for 2017 is based on only 45 states due to the absence of data for five states. In fact, a closer look reveals US states in 2013 awarded an average of 136 incentives per state while this reduced to only 58 per state in 2017. This may imply either US states have become more selective in terms of awarding incentives or simply have published less information on these incentives.

States that particularly improved their rating over the last five years include California (+20), Montana (+13), Arkansas (+12), Wisconsin (+11), and Connecticut (+9). Montana's strong improvement can be partly attributed to the number of incentives registered by IncentivesMonitor.com. This increased from 16 (rank 43) to 30 (rank 19) in 2017. The same is true for California, for which IncentivesMonitor.com registered 344 incentives (rank 1) in 2017 vis-à-vis only 36 (rank 36) in 2013.

On the other side of the spectrum, states like Louisiana and Mississippi (both -17), Florida (-12), Oklahoma (-10), and Alaska and Kansas (both -7) lost ground. Illustrated are the cases of Louisiana and Alaska. IncentivesMontior.com tracked a total of 298 incentives (rank 9) for Louisiana in 2013 but only twelve incentives were registered for 2017 while IncentivesMonitor recorded 62 incentives (rank 27) for Alaska in 2013 but did not record any incentive deals for 2017 (rank 46). Florida's registered incentives decreased from 315 (rank 7) in 2013 to 36 (rank 17) in 2017.

Maine lost ground over the last five years as no incentives were recorded for 2017 while the state ranked 45th in 2013 with eight incentives recorded (ranked 46th), generating 814 new jobs (ranked 43rd) and a capital investment of $433 million (ranked 40th). Maine joined Hawaii, which had been ranked last (46th) in 2013 as well, together with Alaska, Nebraska, and Wyoming – all states for which no incentives were recorded by IncentivesMonitor.com for 2017.

Incentive Data Availability Index Comparison 2013-2017

2013			2017			2013-2017
Rank	State	Score	Rank	State	Score	Change
1	Ohio	3.0	1	New York	2.3	+6
2	Michigan	3.3	2	California	3.0	+20
3	Indiana	3.7	3	Kentucky	5.3	+1
4	Kentucky	5.7	4	Michigan	6.0	-2
5	North Carolina	6.3	5	Wisconsin	6.7	+11
6	Louisiana	7.0	6	North Carolina	7.0	-1
7	New York	8.0	7	Ohio	7.7	-6
8	Texas	9.3	8	Indiana	8.0	-5
9	Tennessee	9.7	9	Texas	8.7	-1
10	Florida	10.3	10	Virginia	11.3	+3
11	Pennsylvania	11.0	11	Pennsylvania	12.3	0
12	Iowa	16.0	12	Colorado	14.0	+8
13	New Jersey	16.3	12	New Jersey	14.0	+1
13	Virginia	16.3	14	Massachusetts	14.3	+4
15	South Carolina	17.0	15	Tennessee	15.3	-6
16	Wisconsin	17.3	16	South Carolina	17.0	-1
17	Missouri	17.7	17	Connecticut	17.7	+9
18	Massachusetts	18.0	17	Iowa	17.7	-5

19	Utah	18.7	**19**	Utah	18.0	**0**
20	Colorado	19.3	**20**	Missouri	18.7	**-3**
21	Alabama	21.3	**21**	Georgia	20.7	**+1**
22	California	22.0	**22**	Florida	22.0	**-12**
22	Georgia	22.0	**23**	Louisiana	23.3	**-17**
24	Illinois	22.3	**24**	Illinois	25.0	**0**
25	Mississippi	22.7	**25**	Alabama	25.7	**-4**
26	Connecticut	24.7	**26**	Arkansas	26.3	**+12**
28	Oklahoma	24.7	**27**	Nevada	26.7	**+5**
28	Kansas	29.7	**28**	Arizona	27.0	**+3**
29	Maryland	29.7	**28**	Maryland	27.0	**+1**
30	Minnesota	30.0	**28**	Minnesota	27.0	**+2**
31	Arizona	30.7	**31**	New Mexico	30.3	**+3**
32	Nevada	32.0	**31**	Oregon	30.3	**+2**
33	Oregon	32.7	**33**	Idaho	31.3	**+7**
34	New Mexico	34.0	**34**	Montana	32.3	**+13**
35	Delaware	34.7	**35**	Kansas	34.3	**-7**
36	South Dakota	35.0	**36**	Rhode Island	34.7	**+6**
37	West Virginia	35.7	**37**	Vermont	36.0	**+4**
38	Arkansas	38.3	**38**	Oklahoma	37.0	**-10**
39	Alaska	39.0	**39**	Delaware	38.3	**-4**
40	Idaho	39.7	**40**	West Virginia	38.7	**-3**
41	Vermont	39.7	**41**	South Dakota	40.7	**-5**
42	Rhode Island	41.3	**42**	Mississippi	41.7	**-17**
42	Washington	41.3	**43**	Washington	42.3	**-1**
44	Nebraska	41.7	**44**	North Dakota	42.7	**+5**
45	Maine	43.0	**45**	New Hampshire	43.3	**+1**
46	New Hampshire	44.7	**46**	Alaska	.	**-7**
47	Montana	45.3	**46**	Hawaii	.	**+4**
48	Wyoming	46.3	**46**	Maine	.	**-1**
49	North Dakota	47.3	**46**	Nebraska	.	**-2**
50	Hawaii	49.7	**46**	Wyoming	.	**+2**

Source: Investment Consulting Associates – ICA (2018), based on IncentivesMonitor.com (2018)

Cross-Reference

The results of another study on US states' incentives programs have been evaluated to account for the transparency of incentive programs. A study titled "National Assessment of Evaluation Practices" was conducted by the Pew Charitable Trusts in 2017 and assessed to what extent each US state adheres to best practice guidelines on evaluating tax incentives.

According to the Pew Charitable Trusts, three of such best practices should be implemented:

- Create a plan – Regulations should be in place that guide the process of incentives monitoring and evaluation.
- Measure the impact – US states should periodically and carefully monitor, measure, and evaluate the impact of the incentive programs on the states' economic development by conducting thorough assessments.
- Inform policy choices – Findings of evaluations of incentive programs should be communicated and used to improve incentive policies.

Pew staff conducted interviews with state officials and incentives professionals across all US states and collected and evaluated state documents on tax incentive evaluations and other relevant matters to evaluate the efficiency of tax incentive programs evaluations. Finally, states were ranked based on three classifications:

- Leading – States that have achieved success on all three criteria.
- Making Progress – States that have at least put in place a plan for periodical evaluation.
- Trailing – States that are struggling to implement any of the three criteria.

The results of the Incentives Data Availability Index have been cross-referenced with the Pew Charitable Trusts' study to account for the proportionality issue and improve the assessments' robustness. In that sense, combining ICA's Incentives Data Availability Index – which has a more quantitative perspective on economic impact – with the results of the Pew Charitable Trusts study – which has a more qualitative perspective on how states evaluate tax incentives – results in a more vigorous and comprehensive assessment of US states' incentives programs and their quality – both in terms of economic impact and policies. To do so, each state has been rated based on two variables:

- Ranking on ICA's Data Availability Index – High data availability, moderate data availability, or low data availability.
- Ranking on Pew's National Assessment of Evaluation Practices– Leading, making progress, or trailing with regards to incentives evaluation.

The results are shown in the table below. Ideally, states are positioned in the top-right corner (i.e. high data availability combined with a leading role on incentives evaluation) while states positioned in the bottom-left corner (i.e. low data availability combined with trailing with regards to incentives evaluation) need to work on their incentives proposition to improve their relatively weak performance.

Table 5: Cross-reference of ICA's Incentive Data Availability Index and Pew Charitable Trusts' National Assessment of Evaluation Practices

Pew's Evaluation Index ICA's Data Availability Index	Trailing	Making Progress	Leading
High Data Availability	CA KY MA MI NJ NY NC PA TX	CO OH TN VA WI	IN
Moderate Data Availability	AZ AR GA IL NV NM SC	AL CT LA MO OR UT	FL IA MD MN
Low Data Availability	DE ID KS MT SD VT WV WY	AK HI NH ND RI	ME MS NE OK WA

Source: Investment Consulting Associates – ICA (2018), based on IncentivesMonitor.com (2018) and Pew Charitable Trusts (2017)

Best performing states

States that score well on their evaluation do not necessarily perform well on data availability too (and vice versa). A correlation between data availability and evaluation does not seem to exist, implying states may evaluate their incentive programs but do not necessarily award many incentives while other states may publish generic statistics and data on their incentive programs but do not thoroughly assess their incentive programs.

One exception is Indiana. The state scores high on ICA's Data Availability Index as it has awarded a large number of incentives (a total of 106 – rank 10) that created nearly 15,400 new jobs (rank 7) and that generated $4.31 billion worth of capital investment (rank 7). This results in a score of 8.0, implying the 8th rank on the Data Availability Index. These data are publicly available and accessible since they feature in the IncentivesMonitor.com database, which is the foundation of the Index.

The State formulated a well-designed evaluation plan and approved legislation in 2014. This legislation requires the evaluation of tax incentive programs and its economic impact on a five-year basis, which needs to be performed by the Legislative Services Agency (LSA). Incentive programs that proved to provide a poor return on investment after the first round of evaluation were eliminated in 2015. The LSA has continued these high-quality incentive program evaluations, thereby providing Indiana's legislation and policy-makers with reliable data and statistics on the performance of its incentive programs, enabling them to make well-informed decisions.

It is very likely to assume data and information collected and evaluated by the LSA is made publicly available and accessible (besides communicated to Indiana's legislation and policy-makers), hence leading to the strong performance of Indiana on the Data Availability Index too. This shows that in the most favorable scenario, incentive programs' evaluation and data availability are in fact interrelated concepts and enforce the performance and quality of the entire incentives proposition. In fact, the LSA scheduled to evaluate Economic Development for a Growing Economy (EDGE) tax credit, which was the main incentive program from which incentives data for the Data Availability Index was retrieved.

A second tier of states rank just below Indiana. These are states that either have made progress on evaluating their incentive programs but already have relatively high levels of data availability (i.e. Colorado, Ohio, Tennessee, Virginia, and Wisconsin) or states that are leading with regards to incentives evaluation but are not awarding as many incentives deals (i.e. Florida, Iowa, Maryland, and Minnesota). These states represent future competitors for Indiana.

Moderately performing states

Alabama, Connecticut, Louisiana, Missouri, Oregon, and Utah are the states that belong to the most average group of states with regards to incentives evaluation and data availability. These states score moderately for both incentives data availability as well as for effectively evaluating their incentive programs.

Another tier of moderately performing states is formed by states that perform very well on one criteria but very poor on another. This concerns relatively large states that rely on incentives but trail with regards to well-designed evaluation of their incentive programs (i.e. California, Kentucky, Massachusetts, Michigan, New Jersey, New York, North Carolina, Pennsylvania, and Texas) but also states that have solid incentive evaluations in place but that do not have much data available (i.e. Maine, Mississippi, Nebraska, Oklahoma, and Washington).

Maine's relatively poor performance on the Data Availability Index is partly compensated by its leading role with regards to evaluating its incentive programs. The need for the State of Maine to collect credible information as basis for well-informed decision-making on the financial situation of its incentive

programs resulted in the creation of a law in 2015 requiring the Legislature's Office of Program Evaluation and Government Accountability (OPEGA) to regularly evaluate tax incentives. With this approach, Maine is following such states as Florida and Washington that have successfully created legislative program evaluation or audit offices that have been tasked with producing high-quality evaluations. The 2015 law allows legislators to set priorities to make OPEGA's workload more manageable by prioritizing the evaluation of some incentive programs over others while also guaranteeing flexibility for the scope of the evaluations (e.g. full evaluations or expected reviews only). This is a proven approach which supports Maine's strong performance on Pew's Evaluation Index.

Worst performing states

The final group of states consists of states that perform poorly on one of both indices and moderately on the other index, or poorly on both indices. The latter includes the states Delaware, Idaho, Kansas, Montana, South Dakota, Vermont, West Virginia and Wyoming. These are economically small states and they do not heavily rely on incentives as instruments to encourage economic development.

Overall, the evaluation shows Maine performs relatively well within New England as it ranks similarly to Connecticut and Massachusetts and above New Hampshire, Rhode Island, and Vermont. This is mainly driven by Maine's strong performance on Pew's Evaluation Index. Improving its data availability by publicly disclosing (more) incentives information would certainly improve Maine's rank and would put it ahead of its regional peers.

Appendix M – Benchmark 5 – Competitive States Programs

Economic Development Programs

Maine has started to lead other states in programs because it created a well-designed plan to regularly evaluate tax incentives, experience in producing quality evaluations that rigorously measure economic impact, and a process for informing policy choices. What do other states look like, incentive programs' wise? This calls for a further investigation into the distinctive incentive programs and the characteristic features these competing states offer. The selection of Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, Georgia, North Carolina, Rhode Island North Carolina and New Hampshire for the competitive state incentive programs benchmark is furthermore justified given their varying economic size and structure, some of which are similar to that of Maine. Also, as can be concluded from the Incentive Productivity Benchmark, Maine's incentive productivity can be grouped together with that of Vermont, , Rhode Island, and New Hampshire.

This competitive state incentive programs benchmark is structured as follows. The first section introduces the incentive regimes across the ten competitive benchmark states after which the state incentive programs are evaluated in-depth. Per state, key incentive programs are briefly described while minor incentive programs are summarized. This is followed by a comparison of a number of selected competitive incentive programs. To safeguard consistency, a template has been designed to compare these selected competitive incentive programs across state borders. This template consists of multiple questions which have been categorized according to three components: Structure and Targets, Eligibility and Benefits, and Performance and Evaluation. The incentive programs that have been benchmarked by means of this template have been selected based on their uniqueness and competitiveness in combination with the fiscal and financial impact for potential recipients. A total of thirteen of competitive incentive programs have been selected to be benchmarked:

- New Hampshire's Economic Revitalization Zone (ERZ) Tax Credit;
- New Hampshire's Research and Development Tax Credit;
- Rhode Island's Innovation Tax Credit;
- Rhode Island's Qualified Jobs Incentive Tax Credit;
- Vermont's Employment Growth Incentive (VEGI);
- Massachusetts's Economic Development Incentive Program (EDIP);
- Massachusetts's Life Science Tax Incentive Program;
- Connecticut's Urban and Industrial Site Reinvestment Tax Credit;
- New York's Start-up NY Program;
- Iowa's High-Quality Jobs;
- Ohio's JobsOhio Workforce Grant;
- Ohio' s JobsOhio Economic Development Grant;
- Georgia's Quick Start Program; and
- North Carolina's Biotechnology Center, Economic Development Award.

Prominent incentive programs Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, North Carolina, Rhode Island, North Carolina and New Hampshire offer have been summarized in the table below. The incentive programs have been grouped according to the type of incentive. A broad distinction can be made between direct financial or fiscal incentives (e.g. tax credits and cash grant) as opposed to indirect incentives (e.g. technical incentives). Direct incentives can be further grouped into investment incentives, land and infrastructure incentives, training and employment incentives and incentives related to R&D. Indirect incentives can be split into regulatory and administrative incentives on the one hand and technical incentives on the other hand.

What becomes evident is that the focus of the incentive programs of Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio, Georgia, North Carolina, Rhode Island and New Hampshire seems to revolve around encouraging training and employment and, to a lesser extent, investment and R&D (particularly Rhode Island). Only Iowa, New Hampshire, and Rhode Island do not offer a program specifically designed at land and infrastructure incentives.

Furthermore, no competitive state offers any incentives specifically focused at reducing the regulatory and/or administrative burden. Offering such incentives – complementary to highlighting its existing incentive regime - may put Maine at a competitive advantage vis-à-vis its peer states.

Overview of key incentive programs of New Hampshire, Rhode Island, Vermont, Massachusetts, Connecticut, New York, Iowa, Ohio and North Carolina

	Type of Incentive	New Hampshire	Rhode Island	Vermont	Massachusetts	Connecticut	New York	Iowa	Ohio	North Carolina
Direct Fiscal and Financial Incentives	**Investment Incentives:** Provision of financing options primarily aimed to offset capital expenditures required for start-up, upgrade and/or stabilization of operation(s)	Economic Revitalization Zone Tax Credit	Rebuild Rhode Island Tax Credit	Brownfield Redevelopment Grants	Economic Development Incentive Program	Enterprise Zone Tax Credit for Qualifying Corporations	Brownfield Clean-up Program	High Quality Jobs Tax Credit	JobsOhio Economic Development Grant	Foreign Trade Zone
		New Hampshire Business Finance Authority Loans and Guarantees	I-195 Redevelopment Fund		Single Sales Factor	Fixed Capital Investment Tax Credit	Economic Transformation Program	Redevelopment Tax Credit	Growth Fund	Job Development Investment Grants
			Tax Increment Financing		100% Personal Property Tax Exemption	Insurance Reinvestment Fund Tax Credit	Startup-NY Program	Targeted Jobs Withholding Tax Credit	166 Direct Loan Program	One North Carolina Fund
			Non-Manufacturing Investment Tax Credit		The Investment Tax Credit	Second Insurance Reinvestment Fund Tax Credit	Commercial Tax Credit		Ohio Enterprise Bond Fund	
			Manufacturing Investment Tax Credit		Sales & Use Tax Exemption	Digital Animation Tax Credit	NY State Film Tax Credit		Data Center Tax Abatement	
			High Performance Manufacturing Investment Tax Credit		MassDevelopment Emerging Technology Fund	Film Production Tax Credit	Empire State Music and Theatrical Production Tax Credit			

	Type of Incentive	New Hampshire	Rhode Island	Vermont	Massachusetts	Connecticut	New York	Iowa	Ohio	North Carolina
			Innovation Tax Credit		Massachusetts Film Industry Tax Incentive Program					
	Land and Infrastructure Incentives Reduced rates and/or direct provision of land, public utilities or transportation granted for specific investments			Economic Development Incentive Program (EDIP)	Community Development Action Grant (CDAG)	Urban and Industrial Site Reinvestment Tax Credit Program	Manufacturer's Real Property Tax Credit		Tax Increment Financing	Utility Account
					Public Works Economic Development Grant (PWED)	Film Production Infrastructure Tax Credit			Roadwork Development (629) Fund	North Carolina Department of Transportation Rail Industrial Access Program
					The District Improvement Financiing Program (DIF)					Large Fullfilment Facility
										Rural Division, Economic Infrastructure Program
	Training and Employment Incentives Subsidized training programs and education subsidies to reduce investors' training costs to develop workforce skills	Coos County Job Tax Credit	Qualified Jobs Incentive Tax Credit	Employment Growth Incentive (VEGI)	Safety Training Grants	Human Capital Investment Tax Credit	Jobs Retention Program	New Jobs Tax Credit	Revitalization Fund	Workforce Development
		New Hampshire Job Training Fund	Anchor Institution Tax Credit	Vermont Training Program	One-Stop Career Centers	Apprenticeship Training Tax Credit in Manufacturing, Plastics, Plastics-Related, or Construction Trades	Employee Training Incentive Program		Jobs Ohio Workforce Grant	

	Type of Incentive	New Hampshire	Rhode Island	Vermont	Massachusetts	Connecticut	New York	Iowa	Ohio	North Carolina
			Real Jobs Rhode Island	Workforce Employment Training Fund (WETF)			Excelsior Jobs Program		Job Creation Tax Credit	
			Wavemaker Fellowship							
			Job Training Tax Credit							
	R&D Incentives Grants, credits and lending instruments to support investments in R&D and innovation	New Hampshire R&D Tax Credit	R&D Expense Credit	Vermont R&D Tax Credit	Research and Development Tax Credit	Research and Experimental Expenditures Tax Credit	Life Sciences R&D Tax Credit	Research Activities Program	Innovation Ohio Loan Fund Servicing	N.C. Biotechnology Center, Economic Development Award
			Innovation Vouchers		Life Science Tax Incentive Program	Research and Development Expenses Tax Credit		Iowa Innovation Acceleration Fund	JobsOhio R&D Center Grant	R&D and Software Publishing Sales Tax Exemptions
			Industry Cluster Grants						R&D Investment Loan	
			Innovation Networking Matching Grants							
			Innovate Rhode Island Small Business Fund							

	Type of Incentive	New Hampshire	Rhode Island	Vermont	Massachusetts	Connecticut	New York	Iowa	Ohio	North Carolina
Indirect Incentives	**Regulatory and Administrative Incentives** Grating exceptions from rules and regulations in combination with streamlined and simplified administrative procedures									
	Technical Incentives Investment facilitation services, information provision and aftercare to ensure a "soft landing" of the investment project or further expansion	New Hampshire Procurement Technical Assistance Program (NH PTAP)	Small Business Assistance Program	Vermont Procurement Technical Assistance Center (VT PTAC)	New England Assistive Technology Marketplace	Machinery and Equipment Expenditure Tax Credit				Pollution Control and Abatement & Recycling
						Service and Manufacturing Facilities Tax Credit				Manufacturing
		New Hampshire Manufacturing Extension Partnership (MEP)		Vermont Global Trade Partnership (VGTP)		Electronic Data Processing Equipment Property Tax Credit				

Source: Investment Consulting Associates (ICA)

New Hampshire

New Hampshire offers four main incentive programs:

Economic Revitalization Zone (ERZ) Tax Credit: designed to encourage investment in infrastructure and job creation in designated areas of a municipality by providing a tax credit with a maximum amount of $200,000, over a period of five years, to offset capital investment expenditures against the business profits and enterprise taxes. In fact, this incentive program is a combination of the investment incentive type and the training and employment incentive type as it requires capital investment in combination with job creation. The figure below shows an example of the allocation of ERZs in Nashua, NH.

Coos County Job Creation Tax Credit: a direct fiscal incentive of either $750 or $1,000 per qualified employee hired granted to companies hiring new, full-time employees in Coos County that pay wages 150 percent higher than the minimum wage.

New Hampshire Job Training Fund: a cash grant of up to $100,000 on a 1:1 cash match to support customized training of a company's labor force. Ineligible matching funds include salaries, wages bonuses and benefits of employees in training; in-kind contributions; administrative or entertainment expenses; and costs resulting from violations of, or failure to comply with federal, state or local laws and regulations.

New Hampshire Research and Development Tax Credit: a direct fiscal incentive which allows companies to deduct R&D expenses against business profits and enterprise taxes.

In addition, the New Hampshire Business Finance Authority provides loans and guarantees to support small businesses with (access to) capital and funding. Finally, the state offers technical assistance programs aimed at providing companies with support on (sub-) contracting opportunities with Department of Defense, other federal agencies and state and local governments (NH-PTAP) and establishing partnerships between small- and medium-sized manufacturing companies (MEP).

The **Economic Revitalization Zone Tax Credit** and the **New Hampshire Research and Development Tax Credit** have been selected for further investigation because of the state-wide coverage of the two programs (rather than the Coos County Job Creation Tax Credit), the type of incentive (tax credit rather than the New Hampshire Job Training Fund's cash grant) and the specific R&D target of the New Hampshire Research and Development Tax Credit.

Competitive State Incentive Benchmark Template – Economic Revitalization Zone (ERZ) Tax Credit (NH)

State and Incentive Program	New Hampshire - Economic Revitalization Zone (ERZ) Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the New Hampshire Division of Economic Development.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 162-N Economic Revitalization Zone Tax Credits.
In which year has the Incentive Program been established and/or updated?	Last revised in 2015. The incentive program will be in place until 2020 or indefinitely until the State law governing ERZs is repealed, amended or revised.
Which institution or organization is responsible for implementing	The Division of Economic Development of New Hampshire's Department of Resources and Economic Development.

State and Incentive Program	New Hampshire - Economic Revitalization Zone (ERZ) Tax Credit
the Incentive Program?	
Is the Incentive Program location-bound?	Yes, businesses must be physically located in an approved ERZ across the state to be eligible to receive funding. An ERZ is a location which: 1) Meets certain demographic criteria (i.e. population decrease over the last 20 years, 51% households with household income less than 80% of the state's median household income, 20% of households with a median income below poverty level); or 2) Is a Brownfield site (i.e. unused or underutilized industrial park, or vacant land, or structures previously used for industrial, commercial, or retail purposes but currently not so used)? As of August 2016, there are 200 ER zones located in 66 municipalities.
Does the Incentive Program target specific sector(s), and if so, what are they?	Both commercial and industrial businesses are eligible.
What is the policy objective of the Incentive Program?	The program has been created to stimulate economic redevelopment, expand the commercial and industrial base, create new jobs, reduce sprawl and increase tax revenues within New Hampshire by encouraging economic revitalization in designated areas.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) Make a certain amount of capital investment in a plant and/or equipment in one calendar year; 2) Create new full-time jobs in the same calendar year 3) Must be located in an approved ERZ.
What is the application procedure?	Business applicants need to fill out the Tax Credit Certification Form which needs to be completed before February 10th of the year following the applicant's tax year. There is no application fee. The commissioner of resources and economic development and the applicant enter into a written ERZ Tax Credit Agreement.
What are the available benefits?	A tax credit, which may be used against the business profits and enterprise taxes, based on a percent of the salary for each new job created and the lesser of: 1) Either a percent of the actual cost incurred for the project; or 2) A maximum credit for each new job created in the fiscal year. The amount of the tax credit is determined as follows: 1) 4 percent of the salary for each new job created in the fiscal year with a wage less than or equal to 1.75 times the then current state minimum wage; 2) 5 percent of the salary for each new job created in the fiscal year with a wage greater than 1.75 times the then current state minimum wage and less than or equal to 2.5 times the then current state minimum wage; 3) 6 percent of the salary for each new job created in the fiscal year with a wage greater than 2.5 times the then current state minimum wage; 4) 4 percent of the lesser of the following: a. The actual cost incurred in the fiscal year of creating a new facility or renovating an existing facility, and expenditures for machinery, equipment, or other materials, except inventory; or b. the maximum credit which may be utilized by a taxpayer in any calendar year shall not exceed $40,000. In the case in which the aggregate credits requested during the calendar year exceed the amount available, each taxpayer shall receive a credit for the proportional share of the maximum aggregate credit amount. A total budget of $825,000 has been allocated for ERZ tax credits across New Hampshire per fiscal year. If that amount is exceeded by all qualified applicants, then each applicant's tax credit amount will be pro-rated.
Are the benefits capped?	Yes. The total amount of the credit is $200,000 over five years, capped at $40,000 per year.
What is the duration of the benefits?	The tax credit can be carried for up to five years.
Performance and Evaluation	

State and Incentive Program	New Hampshire - Economic Revitalization Zone (ERZ) Tax Credit
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on New Hampshire Economic Department

Competitive State Incentive Benchmark Template – Research and Development (R&D) Tax Credit (NH)

State and Incentive Program	New Hampshire - Research and Development (R&D) Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the New Hampshire Department of Revenue Administration.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 162-P Research And Development Tax Credit Program and Chapter 77-A:5 Credits.
In which year has the Incentive Program been established and/or updated?	Last revised in 2015 through Senate Bill 1. It repealed the prospective repeal date of the credit. During the 2015 session, House Bill 2 (Chapter 276, Section 241, Laws of 2015) was passed increasing the award to $7,000,000, effective July 1, 2017
Which institution or organization is responsible for implementing the Incentive Program?	New Hampshire Department of Revenue Administration.
Is the Incentive Program location-bound?	No.
Does the Incentive Program target specific sector(s), and if so, what are they?	Apart from companies undertaking research and development, no clear sector approach has been taken.
What is the policy objective of the Incentive Program?	Supporting businesses with undertaking research and development.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. The tax credit is for expenditures made or incurred during the fiscal year for "qualified manufacturing research and development". Expenditures related to "qualified manufacturing research and development" are defined as wages paid or incurred to an employee of the business organization. Such wages: 1) Shall be treated as wages for qualified research expenses under section 41(b) of the United States Internal Revenue Code; 2) Are paid or incurred because of services undertaken for the purpose of discovering information which constitutes qualified research and development of a new or improved manufacturing process or business component of the business organization; and 3) Qualify and are reported as a credit by the business organization under section 41 of the United States Internal Revenue Code.
What is the application procedure?	Applicants need to fill out the Research and Development Tax Credit Application Form DP-165. Applications for the first fiscal year of the credit shall be filed with the Department of Revenue Administration on or before June 30 following the tax year during which the research and development occurred. The Department will send acknowledgement letters to all applicants by July 31. Applicants will be notified of tax credit amounts granted to them by September 30.
What are the available benefits?	A tax credit to cover expenditures of research and development. The credit is first applied against the business profits tax. Any remainder may be applied against the business enterprise tax. The tax credit is calculated at 10% of the business organization's qualified manufacturing research and development expenditures for the taxable year. A total budget of $2,000,000 has been allocated for R&D tax credits across New Hampshire per fiscal year. In the event that the aggregate amount of tax credits applied for, in any given fiscal year, exceeds $2,000,000, all credits for that year shall be reduced proportionately.
Are the benefits capped?	Yes. The amount of the credit shall be the lesser of 10% of the business

State and Incentive Program	New Hampshire - Research and Development (R&D) Tax Credit
	organization's qualified manufacturing research and development expenditures for the taxable year over the base amount or $50,000.
What is the duration of the benefits?	Unused portions of the credit may be carried forward for up to five years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on New Hampshire Economic Department

Rhode Island

Rhode Island offers a wide range of tax credits to support investment, training and employment and R&D but also provides grants to encourage innovation partnerships and foster innovative clusters. Some of the major incentive programs include:

Rebuild Rhode Island: a redeemable tax credit covering up to 30% of the investment costs in case funding for a real estate investment project happens to be insufficient. Eligibility criteria include a minimum investment of $5,000,000 as well as a certain square footage. An exemption from sales tax on construction materials, furnishings and equipment may apply as well.

Tax Increment Financing: provides capital to eligible investment projects, which must demonstrate the need for financing, by rebating new state tax revenue generated. Reimbursements may not exceed 30% of the total investment expenditures or 75% of the incremental revenue generated.

Innovation Tax Credit: capped at $100,000, a tax credit of up to 50% on qualified capital investment may be provided to encourage investment in high-growth and high-wage innovation sectors. The tax credit may be carried forward for three years. This Innovation Tax Credit will be repealed on December 31st, 2016.

Qualified Jobs Incentive Tax Credit: annual redeemable tax credits, which can equal up to $7,500 per job per year, for up to ten years to support companies expanding their workforce in Rhode Island. The minimum number of new jobs required to qualify varies per industry and company size but can be as few as ten jobs. The first 500 jobs approved under the program will receive the maximum tax credit available, which equals the lesser of $7,500 per job or the W-2 withholding of the jobs created.

Anchor Institution Tax Credit: a tax credit will be offered to Rhode Island companies that played a substantial role in pulling a key supplier, service provider or customer company into Rhode Island, creating at least ten new jobs.

Job Training Tax Credit: a tax credit equaling up to 50% of eligible training expenditures for new or existing employees, which can be claimed against the corporate income tax. After the training, employees must earn 150% of the state's minimum wage. The tax credit is capped at $5,000 per employee over a period of three years.

R&D Expense Credit: a tax credit of 22.5% for increases in qualified research expenses. This credit is available Rhode Island companies filed as a C-corporation. If the increase above base period expenditures exceeds $111,111, the credit equals 16.9% of the excess. Unused credits may be carried forward for up to seven years.

Industry Cluster Grants: grants from $75,000 up to $250,000 to fund planning and organization of innovative industry clusters and grants from $100,000 up to $500,000 to implement programs that strengthen the capacities of the cluster (e.g. R&D, workforce development marketing, and transfer of technologies).

A special incentive program relates to funding redevelopment around the newly constructed I-195. Due to reconfiguration of the I-195 corridor, a number of vacant parcels adjacent to Providence's downtown with significant development opportunities have become available. Investments that locate in this area and have the potential to catalyze (economic) development may be eligible for funding from the $25-million I-195 Redevelopment Fund.

Investment tax credits are offered to both manufacturing and non-manufacturing companies. The latter can benefit from a 10% investment tax credit on owned or leased tangible personal property and other tangible property (placed in service on or after January 1, 1998) through the Non-Manufacturing Investment Tax Credit. The former group of companies may be eligible for the Manufacturing Investment Tax Credit, which comprises a 4% tax credit against the Rhode Island corporate income tax on buildings and structural components, as well as machinery and equipment, which are owned or leased and are principally used in the production process. Tax liability is capped at a certain minimum for both Investment Tax Credits as well as the principle that unused credits may be carried forward for up to seven years. In addition, high-performance manufacturers are allowed a 10% investment tax credit against their corporate income tax on the cost of qualified lease amounts for tangible personal property or other tangible property as well as buildings and structural components, which must be owned, leased to own or leased for at least 20 years.

Apart from the Industry Cluster Grants, smaller grant programs that fund R&D assistance, partnerships and co-operation include the Innovation Vouchers (grants of up to $50,000 to fund R&D assistance, with less than 500 employees, from a Rhode Island university, research center or medical center), Innovation Networking Matching Grants (co-investment grants starting at $50,000 for small business development in technical assistance, access to capital or space on flexible terms) and the Innovative Rhode Island Small Businesses Fund (grants of up to $3,000 offsetting the costs associated with SBIR/STTR Phase I applications and matching grants of up to $45,000 to encourage SBIR/STTR Phase I recipients to apply for more substantial SBIR/STTR Phase II awards, which can be up to $100,000).

Smaller incentive programs offered to support talent and skills development include the Real Jobs Rhode Island program (grants awarded to employers and other stakeholders within a sector that partner to plan and implement tailor-made and sector-specific training programs) and the Wavemaker Fellowship program (defraying student loan payments for up to four years for Rhode Island graduates who pursue careers in technology, engineering, design and other key sectors).

Finally, Rhode Island offers technical assistance in combination with access to capital for small businesses through its Small Business Assistance Program. This incentive program offers loans of $25,000 or more at a below-market interest rate as well as microloans under $25,000.

The Innovation Tax Credit and Qualified Jobs Incentive Tax Credit have been selected as the Rhode Island incentive programs to be included in the competitive state incentive programs benchmark. Despite the fact that the former will be repealed by the end of 2016, it has an explicit focus on investment in innovative industries while the latter has been specifically designed to encourage job creation within Rhode Island as it provides tax credits on a job-by-job basis.

Competitive State Incentive Benchmark Template – Innovation Tax Credit (RI)

State and Incentive Program	Rhode Island - Innovation Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the Rhode Island Commerce Corporation.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 44-63 of Title 44 of the Rhode Island 2015 General Laws.
In which year has the Incentive Program been established and/or updated?	Last revised in 2015.
Which institution or organization is responsible for implementing the Incentive Program?	The Rhode Island Commerce Corporation and the Rhode Island Division of Taxation.
Is the Incentive Program location-bound?	No.
Does the Incentive Program target specific sector(s), and if so, what are they?	Companies that produce services or manufacture goods which are capable of exporting or importing across the state's boundaries in the following innovating industries: 1) Biotechnology and life sciences; 2) Communication and information technology; 3) Financial services; 4) Marine and defense manufacturing; 5) Professional, technical and educational services; and 6) Industrial and consumer product manufacturing and design.
What is the policy objective of the Incentive Program?	Encourage investment in high-growth, high-wage innovation industries as well as attract and retain successful serial entrepreneurs to Rhode Island to catalyze economic growth in innovation industries. After all, entrepreneurship and a stronger platform for new company creation are essential to creating an innovative economy.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company eligible for this Incentive Program is defined as a "qualified innovative company", which is defined as any business entity formed or registered to conduct business under the laws of the state of Rhode Island, that generated annual gross revenues of less than $1,000,000 in the prior two calendar years and produces traded goods or services in one of the six innovating industries.
What is the application procedure?	Companies must apply for the credit prior to making the investment. This application is subject to an analysis and review of the impact of the proposed investment by the Commerce Corporation staff. Once the application is approved, the company has up to 12 months to invest and provide proof of the investment to the Commerce Corporation Board. Upon completion of this process, the Commerce Corporation will certify the company's eligibility for the tax credit with the Division of Taxation.
What are the available benefits?	A tax credit of up to 50% of any investment made in the company, which may be applied against the state tax liability.
Are the benefits capped?	Yes. The amount of the credit is capped at a limit of $100,000. The Commerce Corporation is authorized to approve no more than $1,000,000 in tax credits in any two calendar years period.
What is the duration of the benefits?	The remaining value of the tax credit may be carried forward for up to three years. In addition, the Commerce Corporation shall not approve any new applications for the Innovation Tax Credit after December 31, 2016.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	By August 15th of each year the recipient shall report the source and amount of any bonds, grants, loans, loan guarantees, matching funds or tax credits received from any state governmental entity, state agency or public agency received during the previous fiscal year. This annual report shall be sent to the Division of Taxation. The Commerce Corporation shall monitor the performance of every recipient through the duration of any approved tax credit and for two years after the recipient no

State and Incentive Program	Rhode Island - Innovation Tax Credit
	longer receives the tax credit. Such monitoring includes annual reports which will be transmitted to the Division of Taxation and publically disclosed. The annual reports on the impact analysis should include: 1) Actual versus projected impact for all considered factors; and 2) Verification of all commitments made in consideration of the tax credit.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Rhode Island Commerce Corporation

Competitive State Incentive Benchmark Template – Qualified Jobs Incentive Tax Credit (RI)

State and Incentive Program	Rhode Island - Qualified Jobs Incentive Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the Rhode Island Commerce Corporation.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 48.3 of Title 44 of the Rhode Island General Laws, the Rhode Island Qualified Jobs Incentive Act of 2015.
In which year has the Incentive Program been established and/or updated?	Last revised in 2015.
Which institution or organization is responsible for implementing the Incentive Program?	The Rhode Island Commerce Corporation and the Rhode Island Division of Taxation.
Is the Incentive Program location-bound?	The Incentive Program covers the whole of Rhode Island though tax credit rate may be increased due allocating the newly created jobs in (one of) the following locations: 1) A "Hope Community" (Central Falls, Pawtucket, Providence, West Warwick and Woonsocket); 2) For a targeted industry; 3) For a business located within a transit oriented development area; and 4) For an out-of-state business that relocates a business unit or units or creates a significant number of new full-time jobs during the commitment period.
Does the Incentive Program target specific sector(s), and if so, what are they?	Companies in both target as well as non-target industries may qualify for this Incentive Program. The eligibility criteria for companies in target industries are less stringent. These target industries include: 1) Biomedical Innovation; 2) Cyber and Data Analytics; 3) Maritime; 4) Design, Materials, and Manufacturing; 5) Technology; 6) Defense; 7) Corporate Management Offices and Back Office Operations; 8) Transport, Distribution, and Logistics; and 9) Tourism and Arts.
What is the policy objective of the Incentive Program?	Companies in Rhode Island have found it difficult to make investments that would stimulate economic activity and create new jobs. This situation has contributed to an unemployment rate in Rhode Island that is higher than neighboring states and among the highest in the US. Consequently, a need exists to promote the creation of new jobs, attract new business and industry, and stimulate growth in businesses that are prepared to make meaningful investment and foster job creation in Rhode Island.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which	Yes. Eligibility for the tax credit is related to the minimum number of new full-time jobs and depends on the industry in which the applicant is active: 1) A business in a target industry that employs not more than 100 full-time

State and Incentive Program	Rhode Island - Qualified Jobs Incentive Tax Credit
are the most frequently mentioned ones?	employees in Rhode Island on the date of application must create at least 10 new full-time jobs; 2) A business in a target industry that employs more than 100 full-time employees in Rhode Island on the date of application must create the lesser of not less than 10% of the business's existing number of full-time employees in Rhode Island or at least 100 new full-time jobs; 3) A business that is not in a target industry that employs not more than 200 full-time employees in Rhode Island on the date of application must create at least 20 new full-time jobs; or 4) A business that is not in a target industry that employs more than 200 full-time employees in Rhode Island on the date of application must create the lesser of not less than 10% of the business's existing number of full-time employees in Rhode Island or at least 100 new full-time jobs. An Applicant shall not be eligible for the tax credit in case of relocation within Rhode Island or if federal procurement is a cause of substantially all of the hours to be worked by the new full-time jobs identified in the application, unless the Applicant can show that it could reasonably and efficiently locate the new full-time jobs outside of Rhode Island.
What is the application procedure?	Applicants need to fill out and submit the Rhode Island Qualified Jobs Incentive Tax Credit Application together with a $1,000 application fee. Each application shall be reviewed by the Rhode Island Commerce Corporation. The Corporation will then determine whether to recommend to the Board to approve a tax credit and its amount. The Corporation, in consultation with the Tax Division, will verify that the amount of tax credits granted for any year will not exceed the reasonable W-2 withholding received by Rhode Island in that year for each new full-time job created. Upon approval of the tax credit, the Corporation and the applicant will enter into an Incentive Agreement prior to the issuance of any tax credit.
What are the available benefits?	The benefit of this Incentive Program consists of a tax credit with a maximum value of $7,500 per job, which will be awarded on an annual basis for each year of the eligibility period and can be applied against the corporate income tax. For an applicant who has been granted a tax credit prior to the approval of tax credits for a cumulative total of 500 new full-time jobs, the annual amount of the tax credit will equal $7,500. Otherwise, the annual base amount of the tax credit for each new full-time job shall be $2,500 and may be increased by the amount indicated, up to an additional $5,000, if any of the following criteria are met: 1) For a business with new full-time jobs with a median salary in excess of 110% of the existing median hourly wage as reported by the United States Bureau of Labor; Statistics for the State: +$300 per year for each 10% by which the median salary levels exceeds the existing median hourly wage; 2) For a full-time job in a target industry: +$5,000; 3) Located within a "Hope Community": +$1,000; 4) For a full-time job that is created by virtue of an out-of-state business relocating a business unit or units to Rhode Island: +$5,000; 5) Creation a significant number of new full-time jobs (at least 50) prior to the receipt of any tax credits: +$3,000 (50-100 new jobs) up to +$5,000 (more than 250 jobs); 6) Creation of 25 or more new full-time jobs at a location where the applicant has made a capital investment of $5,000,000 or more: +$1,000 for each $5,000,000 in capital investment; 7) Located within one-half mile of T.F. Green Airport, Quonset Business Park or a passenger rail station: +$4,000; 8) Located within transit oriented development area: +$1,000; 9) Located within the I-195 Redevelopment District: +$5,000; 10) For new full-time jobs that align with the academic mission of a college or university in Rhode Island: +$2,500; and 11) For new full-time jobs created in Scientific R&D or Industrial Design: +$5,000.

State and Incentive Program	Rhode Island - Qualified Jobs Incentive Tax Credit
Are the benefits capped?	Yes. The lesser of $7,500 per newly created job or the W-2 withholding of the jobs created.
What is the duration of the benefits?	The tax credit may be extended for a term of not more than ten years. If the amount of the tax credit allowed exceeds the applicant's total tax liability for the year in which the credit is allowed, the amount of such tax credits that exceeds the applicant's tax liability may be carried forward and applied against the taxes imposed for the succeeding four years, or until the full credit is used, whichever occurs first. No credits shall be authorized to be reserved after December 31, 2018.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	An applicant shall submit documentation indicating that it has met the requirements specified in the Incentive Agreement for initial certification of its tax credit amount within three years following the date of approval of its application by the Corporation's Board. By August 1st of each year, each applicant shall report to the Commerce Corporation and the Division of Taxation the number of total jobs created, the applicable NAICS code of each job created, the annual salary of each job created and the address of each new employee.
Does the Incentive Program have clawback systems and procedures in place?	The tax credit amount for any tax period for which documentation of an applicant's credit amount remains uncertified as of a date one year after the closing date of that period shall be forfeited, although tax credits for the remainder of the years of the eligibility period shall remain available to the applicant. Forfeiture of a year's credit shall not extend the eligibility period.

Source: Investment Consulting Associates (ICA), based on the Rhode Island Commerce Corporation

Vermont

Vermont offers a couple of direct cash incentives in combination with tax credits, specialized training programs and reduced utility rates. Some of the major incentive programs include:

Brownfield Redevelopment Grants: loans of up to $250,000 with attractive rates and terms for assessment, characterization and cleanup of contaminated brownfield sites.

Economic Development Incentive Program (EDIP): new or expanding industries located in the Central Vermont Public Service territory may qualify for reduced electrical rates. Rate credits apply for customers who meet certain EDIP availability, applicability and eligibility criteria.

Vermont Employment Growth Incentive (VEGI): a performance-based cash incentive for prospective job and payroll creation and capital investment that is beyond organic growth and which occurs because of the incentive. The exact amount of the incentive, which is paid out in cash installments over five years, is determined based on the revenue return generated to the state of Vermont by prospective qualifying job and payroll creation and capital investment. Because of its significance, this incentive program has been selected for further evaluation.

Vermont Training Program: individually designed programs for new and existing employees, which may include on-the-job, classroom, skill upgrade or other specialized training. The exact type of training is mutually agreed upon between the State and employer. As of July 2016, the VTP has taken its long-standing record of success and moved the program to the next level. Going forward the VTP will leverage its $1.2 million grant budget to serve Vermonters in a broader spectrum of industry sectors and has improved its processes to remain flexible and increase collaboration.

Workforce Employment Training Fund (WETF): administered by the Vermont Department of Labor, this program provides matching training grants to offset the cost of workforce re-training for Vermont employers who are unemployed, under-employed, or at risk of becoming unemployed.

Vermont R&D Tax Credit: complementary to the federal R&D tax credit, the Vermont R&D tax credit equals up to 27% of the federal R&D tax credit allowed in the taxable year. Eligibility criteria are similar to those of the federal R&D tax credit which are defined under section 41 of the United States Internal Revenue Code. Contrary to New Hampshire, where the tax credit may be carried forward up to 10 years if the credit cannot be applied in the year earned, the taxpayer in Vermont can carry forward the credit for up to 10 years.

In addition, similar to New Hampshire's PTAP, which supports companies with contracting and subcontracting opportunities with the Department of Defense, other federal agencies and state and local governments, Vermont established the Procurement Technical Assistance Center (VT PTAC). It has been designed to support businesses to understand the requirements of government contracting to exploit federal, state, and community contract opportunities. The Vermont Global Trade Partnership (VGTP) functions as center for international business assistance through its international trade-related educational seminars, trade show participation, technical assistance, and one-on-one consulting services.

Competitive State Incentive Benchmark Template – Vermont Employment Growth Incentive (VEGI) (VT)

State and Incentive Program	Vermont - Vermont Employment Growth Incentive (VEGI)
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes, very transparent. The Incentive Program is listed on the website of the Vermont Agency of Commerce and Community Development, which also features material on the application procedures, program facts, figures and data, the economic progress council and helpful links.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 151: § 5930b. Vermont employment growth incentive.
In which year has the Incentive Program been established and/or updated?	Annotated to include in 2015 Legislative Session. The VEGI Enhancement for Environmental Technology Companies has been added in 2008.
Which institution or organization is responsible for implementing the Incentive Program?	The Vermont Economic Progress Council (VEPC).
Is the Incentive Program location-bound?	Not directly although the exact amount of the incentive is, amongst other indicators, based on the wage thresholds of qualifying jobs, which differs across Vermont Labor Market Areas (LMAs).
Does the Incentive Program target specific sector(s), and if so, what are they?	The VEGI Enhancement for Environmental Technology Companies, implemented to support job creation in Vermont's "Green Economy", specifically targets companies engaged in research, development, design, engineering or manufacturing of certain environmental technologies or certain environmental services (e.g. waste management, natural resource protection and management, energy efficiency and clean energy). Companies active in these sectors may be eligible for an increased level of VEGI incentives resulting in enhanced incentives that average up to 40% higher than the normal VEGI incentive amount.
What is the policy objective of the Incentive Program?	To encourage prospective economic activity in Vermont that is beyond an applicant's organic or background growth and that would not occur, would not occur in Vermont, or would occur in a significantly different and less desirable manner, except for the incentive provided.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	There are no restrictions on the type or size of company that can apply or the number of jobs that must be created. However, this Incentive Program is performance-based. This implies the incentive can only be awarded if the following conditions, which are approved and stated in the Final Application, are met: 1) Base full-time payroll is maintained or increased (i.e. pay-roll level of all full-time employees plus the New Qualifying Payroll to be added each year for subsequent years); 2) The New Qualifying Payroll performance requirement (i.e. aggregate annualized payroll of the New Qualifying Employees hired during the target year); and 3) Either the New Qualifying Employment (i.e. number of new qualified Employees) or the New Qualifying Capital Investment (i.e. level of qualifying capital Investments) performance requirement. A "Qualifying Job" is defined as new, full-time, permanent jobs located within Vermont for Vermont employees who will receive at least three employer-supported benefits (e.g. health care, dental care, paid vacation, paid holidays, other paid time off, retirement benefits) and who earn above the VEGI wage threshold. The VEGI Wage Threshold that applies to a project is 160% or 140% of the Vermont Minimum Wage for the year in which the project commences, depending on the LMA in which the project will occur.
What is the application procedure?	Authorization for the incentives occurs through application to the VEPC, which must determine if the company and project meet statutory approval requirements. During the application process, the VEPC Board must determine: 1) If the economic activity would not occur or would occur in a significantly different and significantly less desirable manner without the incentive;

State and Incentive Program	Vermont - Vermont Employment Growth Incentive (VEGI)
	2) If the economic activity will generate more incremental tax revenue for the state than is foregone through the incentive (cost-benefit modeling); and 3) If the company and economic activity meet a set of "quality control" program guidelines. Applicants must first file a Pre-Application to get an incentive estimate. Then, formal approval of the incentives by the VEPC Board can occur in two phases: Initial and Final. The Council may approve an Initial Application if the But For and Program Guidelines are met, and approve an incentive amount based on initial data from the company. If an application is given Initial Approval, the applicant must subsequently file a Final Application before the end of the calendar year to receive authorization of the incentives. The Final Application sets the annual performance measures that must be met to earn the incentive.
What are the available benefits?	The VEGI program is performance-based and calculated on a case-by-case basis. No incentive is paid when the incentives are approved (i.e. up-front).
Are the benefits capped?	For any calendar year, the total amount of incentives the VEPC is authorized to approve may not exceed $10,000,000.
What is the duration of the benefits?	The minimum number of years that can be covered by one application is one year while the maximum is five years. However, because the incentive earned in a given year is paid out over five years, the total period over which incentive installments can be paid to the company can be up to nine years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Yes. Once authorized, applicants become claimants and use the same secure online system that is used for applications to file an annual incentive claim which is examined by the Vermont Department of Taxes to ensure that annual performance requirements are met. The reporting consists of a claim form, an employee benefits form, and four MS Excel workbooks which must be completed and uploaded to show detailed employment, payroll and capital investment data supporting the claim.
Does the Incentive Program have clawback systems and procedures in place?	Yes. For Year 1 through Year 3, the company has a grace period of 24 months from the annual Performance Requirement deadline to meet the Performance Requirements and still earn the incentive. For Year 4, the grace period is 12 months. Year 5 has no grace period. If by the end of any grace period the Performance Requirements are not met, the incentive for the target year can never be earned and any remaining incentives are terminated.

Source: Investment Consulting Associates (ICA), based on Vermont Agency of Commerce & Community Development

Massachusetts

Massachusetts offers a variety of programs, though it should be noted that the State's suite of tools is expected to change in the near future. Some of the current major incentive programs include:

Economic Development Incentive Program: Companies can receive state and local tax incentives in exchange for the creation of full-time jobs, retention of manufacturing full-time jobs, and private investment commitments within the Commonwealth.

As of January 2010, the Economic Assistance Coordinating Council (EACC) will award three categories of incentives to companies outside of the Commonwealth: Certified Expansion Project, Enhanced Expansion Project, and Manufacturing Retention Project.

In exchange for the full-time job creation and investment commitment the EACC will grant one of the Expansion Project to a company in the Economic Target Area and award up to a 10% EDIP- Investment Tax Credit (ITC) to support the project. The Enhanced Expansion Project will be awarded to a company that will be creating at least 100 new full-time permanent jobs within the next two years of receiving the

reward. The Manufacturing Expansion Project will be awarded to a company that will retain at least 50 and / or create at least 25 full-time, permanent manufacturing jobs in a gateway community. The project must receive municipal approval of the MRP prior to being considered by the EACC and may also seek local tax incentives from the city or town.

Life Science Tax Incentive Credit: The primary goal is to create new long-term jobs in the Commonwealth for companies engaged in life sciences research and development, commercialization, and manufacturing. The program offers competitively awarded tax incentives to companies that meet specified hiring goals, including the Life Sciences Investment Tax and Research Credits.

MassDevelopment: Provides real estate and equipment financing at low interest rates through direct loans or through its Emerging Technology Fund (ETF). Direct loan are capped at $3 million for real estate and $500,000 for equipment. ETF cap for real estate or equipment is $2.5 million or 25% of total project cost. MDFA also provides tax exempt bond financing to manufacturers to be used for the purchase, construction, or renovation of facilities to be used for the purchase, construction, or renovation of facilities.

Community Development Action Grant (CDAG): The State Legislature funds the program through the Housing Bond Bill. This fund is somewhat varied on the amount available, however, it is consistently funded by the government. The program grants funding for community development projects to revitalize and redevelop decadent, substandard and blighted open areas for public benefit, in the public interest, and for a public purpose consistent with the sound needs of communities.

In addition, the Massachusetts One-Stop Career Centers are a space for employers to seek skilled and motivated workers to add to their company's workforce. The space gives the ability to list job openings, help in planning a job fair, prescreen and refer potential job applicants, resources to help train, maintain and grow workforces, and provide research on the Commonwealth's labor market.

The New England Assisted Technology Marketplace has the ability to give aid to those who are disabled in some sort of capacity more freedom and independence through multiple products and programs.

Competitive State Incentive Benchmark Template – Economic Development Incentive Program (EDIP)

State and Incentive Program	Massachusetts - Economic Development Incentive Program (EDIP)
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the Massachusetts Economic Department
Is the Incentive Program guided by a dedicated Law or Statue?	Program established by section 63 of chapter 23A of the General Laws

State and Incentive Program	Massachusetts - Economic Development Incentive Program (EDIP)
In which year has the Incentive Program been established and/or updated?	The EACC was established in 1993. The Program was last revised in 2009.
Which institution or organization is responsible for implementing the Incentive Program?	The Executive Office of Housing and Economic Development. The Economic Assistance Coordinating Council (EACC) aids in the granting process of the program.
Is the Incentive Program location-bound?	Yes, businesses must be physically located in an approved Economic Target Area or Economic Opportunity Area within the state
Does the Incentive Program target specific sector(s), and if so, what are they?	The Manufacturing Retention Project requires the firm to be in the manufacturing industry. All other projects do not have an industry requirement
What is the policy objective of the Incentive Program?	The Economic Development Incentive Program (EDIP) is a tax incentive program designed to foster full-time job creation and stimulate business growth throughout the Commonwealth.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) The city or town must be an ETA community; 2) The proposed project location must be within an EOA 3) The project must receive municipal approval of local tax incentives (either Tax Increment Financing (TIF) or a Special Tax Assessment (STA)) and municipal approval of the Certified EP prior to being considered by the EACC.
What is the application procedure?	You must submit a letter of intent to the municipality of interest and the municipality's MOBD Regional Director. You should send the letter of intent at the earliest possible date. Then, for Round 1, To apply to the EDIP you must submit a preliminary application by the posted deadline to be considered at the corresponding EACC meeting. MOBD will review the application and ensure that the applicant meets the eligibility requirements of the EDIP. For Round 2, Qualified applicants may receive a Supplemental Application for consideration by the EACC. Sample documents are below and are for informational purposes only. If you receive a Supplemental Application you must submit it by the posted deadline for consideration at the corresponding EACC meeting.

State and Incentive Program	Massachusetts - Economic Development Incentive Program (EDIP)
What are the available benefits?	Businesses that participate in EDIP may receive several types of tax credits, including local incentives, property, and personal tax breaks. Tax credits issued by the Commonwealth apply against a company's excise obligations.
Are the benefits capped?	Yes. The total amount of the annual cap is $25 million.
What is the duration of the benefits?	The program can be carried for up to five years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on MassEcon.

Competitive State Incentive Benchmark Template – Life Science Tax Incentive Program

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the Government website of the Massachusetts
Is the Incentive Program guided by a dedicated Law or Statue?	Tax Incentive Program pursuant to chapter 23I of the General Laws
In which year has the Incentive Program been established and/or updated?	The program was established in 2008. These incentives are effective from January 1, 2009 through December 31, 2018.
Which institution or organization is responsible for implementing the Incentive Program?	The Life Sciences Tax Incentive Program is jointly administered by the Massachusetts Life Sciences Center and the Department of Revenue.
Is the Incentive Program location-bound?	Yes, applicants must be engaged in the Commonwealth of Massachusetts.

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, applicants must be engaged in life sciences research, development, manufacturing or commercialization.
What is the policy objective of the Incentive Program?	The primary goal of the program is to incentivize life sciences companies to create new long-term jobs in Massachusetts.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) The company must be located in the Commonwealth of Massachusetts 2) Applicants must commit to creating and retaining 10 new new full time equivalent employees (FTE's). Applicants must also have 10 active full time equivalent employees (FTE's) at the time of application. 3) Must constitute as a "Life Science" company
What is the application procedure?	Companies interested in applying for awards under the Program should first review the Program Solicitation and application, which will be available starting on January 5, 2017 at the MLSC's web site: http://www.masslifesciences.com/programs/tax. Each company may submit only one application.
What are the available benefits?	1) Life sciences investment tax credit (refundable) 2) FDA user fees credit (refundable) 3) Extension of net operating losses from 5 to 15 years 4) Elimination of throwback provision 5) 90% refund of already-available excess §38M research credits (refundable) 6) 38W life sciences research credit 7) Deduction for qualified orphan drug expenses 8) Designation as R&D company for sales tax purposes 9) Sales tax exemption for certain property 10) Life sciences jobs incentive credit (refundable)
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on MassEcon.

Connecticut

Connecticut offers programs that focus on reuse and capital investment. Some of the major incentive programs include:

Insurance Reinvestment Fund Tax Credit: Tax credits are available for companies investing in an Insurance Reinvestment Fund that invests in Connecticut companies engaged in an insurance business or providing services to insurance companies. The Tax credit is allowable over ten years based on Income year in which the investment was made and the two succeeding income years, 0%; Third full income year following the year in which the investment in the insurance business was made and the three succeeding income years, 10%; and Seventh full income year following the year in which the investment in the insurance business was made and the two succeeding income years, 20%. No carryback is allowed and the excess credit for one year can roll over into the successive five years.

Urban and Industrial Reinvestment Tax Credit: Under the program, the state may provide up to $100 million in tax credits over a ten-year period to support projects that create significant jobs and capital investment in the state's urban centers and other economically distressed communities.

Total expenditures for the program are capped at $500 million. The amount of credits offered is based on the department's extensive due diligence process, which includes a comprehensive financial review and an impact analysis using the REMI econometric model. The commissioner must submit any requests for credits over $20 million to the legislature for their review.

Human Capital Investment: This credit is equal to 5% of the amount paid or incurred by the corporation for the investment. If any tax credit is not used for one year it may be carried forward to the next five succeeding income years until the entire credit is used. No carryback is allowed. The investment is for both purely human capital needs as well as work education programs. The online site expands upon both concepts. The Investment does not cover expenditures associates with trainings such as: training materials, direct expenses relating to training (e.g., the cost of a training instructor); course registration fees, and travel costs related to training, provided the travel is within Connecticut.

Machinery and Equipment Expenditure Tax Credit: The tax credit is to either 5% or 10% dependent on the number of full-time employees. To be eligible for the 10% credit, there must be no more than 250 full-time employees, while eligibility for the 5% credit is for a company with 250-800 full-time employees. The tax credit is based on a percentage of the amount spent on machinery and equipment acquired for and installed in a facility in Connecticut that exceeds the amount spent for such machinery and equipment in the preceding income year.

In addition, the Connecticut Film Production Infrastructure Tax Credit is available to companies that invests in a state-certified entertainment infrastructure project. This tax credit may be applied to the taxes imposed under Chapter 207 (Insurance Companies and Health Care Centers Taxes) and Chapter 208 (Corporation Business Tax) of the Connecticut General Statutes. The tax credit is equal to 20% for an investment of $3 million or more in a state-certified project.

State and Incentive Program	Connecticut -Urban and Industrial Site Reinvestment Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the state website in the Business Development section
Is the Incentive Program guided by a dedicated Law or Statue?	The Urban and Industrial Sites Reinvestment Tax Credit Program was created under Public Act 00-170 and later modified by Public Acts: 05-276; 06-184;06-187 and 06-189.
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned.
Which institution or organization is responsible for implementing the Incentive Program?	The Department of Economic and Community Development; Office of Business and Industry Development.
Is the Incentive Program location-bound?	Yes, located within Connecticut that has been subject to environmental contamination. Communities that may participate in the Urban Site Investment Tax Credit Program are those that have an enterprise zone, have been designated as a distressed municipality or have a population in excess of one hundred thousand.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, applicants must be investing in some way in order to revitalize or modernize properties or create new facilities.
What is the policy objective of the Incentive Program?	This program is a powerful economic development tool designed to drive investment to the state's urban centers and other economically distressed communities without depleting valuable state bond dollars. Under the program, the state may provide up to $100 million in tax credits over a ten-year period to support projects that create significant jobs and capital investment in these underserved areas.
Eligibility and Benefits	

State and Incentive Program	Connecticut -Urban and Industrial Site Reinvestment Tax Credit
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) Direct investments must be made in a minimum amount of $5 million or, in the case of an investment in an eligible project for the preservation of an historic facility and redevelopment of the facility for mixed uses that includes at least four housing units, a total asset value of not less than $2 million dollars. 2) An eligible Urban Site Investment Project is defined as an investment that will add significant new economic activity, increase employment in a new facility and generate significant additional tax revenues to the municipality and the state. 3) An eligible Industrial Site Investment Project is defined as an investment made in real property, or in improvements to real property.
What is the application procedure?	Applications and registration information can be obtained by contacting DECD. Direct inquiries to DECD, 505 Hudson Street, Hartford CT 06106, 860-270-8128
What are the available benefits?	The real property of an "eligible industrial site investment project" or an "eligible urban reinvestment project" may be eligible to receive a 50% property tax abatement on that portion of the property tax due that is attributable to the increased value of such property as a result of the approved remediation, construction or other development.
Are the benefits capped?	Total expenditures for the program are capped at $500 million.
What is the duration of the benefits?	If approved for credits, a company cannot begin to take advantage of them until the fourth year of the project. The corporate tax credit is dispersed to the recipient over a ten-year period.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Any credit not used in the income year for which it was allowed may be carried forward for the five immediately succeeding income years until the full credit has been allowed.

Source: Investment Consulting Associates (ICA), based on State of Connecticut Department of Economic and Community Development

New York

New York offers programs focused on job creation. However, they offer a variety of other staple programs.

Start-up NY Program: This program offers new and expanding businesses to operate tax free for ten years on or near eligible university of college campuses in the New York State. The company must be creating new jobs. Retail and wholesale businesses, Restaurants, Law and accounting firms, Medical or dental practices, Real estate management companies/brokers, Hospitality, Retail banking, Utilities and energy production, Finance and financial services, Businesses providing personal services, Businesses providing business administration support and services are not eligible for the program.

Empire State Music and Theatrical Production Tax Credit: The credit is eligible to companies wishing to create feature films, television series, relocated television series, television pilots, and films for television. Program credits of $420 million per year can be allocated for companies to produce film projects and help create as well as maintain film industry jobs. Production companies may be eligible to receive a fully refundable credit of 30 percent of qualified production costs and post-production costs incurred in New York State (NYS). For the period 2015-2022, productions with budgets over $500,000 can receive an additional 10 percent credit on qualified labor expenses incurred. There is a maximum of $5 million per year that can be allocated for the additional 10 percent credit on qualified labor expenses.

Excelsior Jobs Program: Firms applying for this program qualify for four fully refundable tax credits. The first is the Excelsior Jobs Tax Credit, which grants a credit of 6.85% of wages per net new job. The second is the Excelsior Investment Tax Credit which is valued at 2% of qualified investments. The third program is the Excelsior Research and Development Tax Credit. This grants A credit of 50% of the Federal Research and Development credit up to six percent of research expenditures in NYS. The fourth credit is the Excelsior Real Property Tax Credit. This is available to firms locating in certain distressed areas and to firms in targeted industries that meet higher employment and investment thresholds (Regionally Significant Project).

Commercial Tax Credit: This credit is in place to give opportunity to facilitate the production of commercials as well as help create and maintain jobs. The credit is capped at $7 million per year to be distributed to qualified production companies. The $7 million per year consists of three components for companies: shooting commercials Downstate ($3 million), shooting Upstate ($3 million), and those demonstrating incremental "growth" in commercial production ($1 million). An applicant can receive a credit of 5% on qualified production expenses under the Upstate and Downstate components of the Commercial Tax Credit Program. An additional 20% credit is available under the Growth component for eligible incremental growth in production expenses from one year to the next.

In addition, New York's State Film Tax Credit objective is to strength the film production industry in the state. It has the same benefits as the Empire State Music and Theatrical Production Tax Credit.

State and Incentive Program	New York - NY Start-up Program
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the New York State Development site
Is the Incentive Program guided by a dedicated Law or Statue?	Yes
In which year has the Incentive Program been established and/or updated?	The program was established June 2015.
Which institution or organization is responsible for implementing the Incentive Program?	Office of Empire State Development
Is the Incentive Program location-bound?	Yes, the firm needs to be a new business in New York State, or an existing New York business relocating to or expanding within the state.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, Partner with a New York State college or university. Here is a list of ineligible businesses: Retail and wholesale businesses, Restaurants, Law and accounting firms, medical or dental practices, Real estate management companies/brokers, Hospitality, Retail banking, Utilities and energy production, Finance and financial services, Businesses providing personal services, Businesses providing business administration support and services.
What is the policy objective of the Incentive Program?	START-UP NY helps new and expanding businesses through tax-based incentives and innovative academic partnerships. START-UP NY offers new and expanding businesses the opportunity to operate tax-free for 10 years on or near eligible university or college campuses in New York State. Partnering with these schools gives businesses direct access to advanced research laboratories, development resources and experts in key industries.
Eligibility and Benefits	

State and Incentive Program	New York - NY Start-up Program
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) Be a new business in New York State, or an existing New York business relocating to or expanding within the state. 2) Partner with a New York State college or university. 3) Create new jobs and contribute to the economic development of the local community 4) list of ineligible businesses: Retail and wholesale businesses, Restaurants, Law and accounting firms, Medical or dental practices, Real estate management companies/brokers, Hospitality, Retail banking, Utilities and energy production, Finance and financial services, Businesses providing personal services, Businesses providing business administration support and services.
What is the application procedure?	Step 1 – Using our schools directory (see below), find the right school for you to partner with based on geography and academic mission. Step 2 – Contact and work directly with the school of your choice to apply.
What are the available benefits?	The ability to operate tax free for a period of ten years. This benefit will commence once the firms receives approval from the ESD.
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	If approved, they are only available for a period of ten consecutive years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Empire State Development.

Iowa

Iowa offers programs that have a focus of innovation and reinvention.

High-quality Jobs: The program provides qualifying businesses aid to off-set some of the costs incurred to locate, expand or modernize an Iowa facility. This flexible program provides loans, forgivable loans, tax credits, exemptions and/or refunds. The Iowa Economic Development Authority (IEDA) offers this program to promote growth in businesses, which employ Iowans in jobs defined as high-quality by state statute.

Iowa Innovation Acceleration Fund: The objective is to offer assistance to companies that transfer technology to companies that create high-paying jobs. This is used to accelerate the pace of market development. The fund is split into two programs, PROPEL and INNOVATION EXPANSION. PROPEL grants up to and is capped at $300,000 for companies that have critical management in place, have a validated business model and an established customer base that's generating substantive revenue. INNOVATION EXPANSION grants $500,000 to encourage expansion of product lines in companies that have a complete management infrastructure, a demonstrated historical profitability and an established customer base.

Redevelopment Tax Credit: Companies can receive tax credits for redeveloping properties know as brownfield and grayfield sites. Tax credits of up to 24% for qualifying costs of a brownfield project and 30% if the project meets green building requirements. Tax credits of up to 12% of qualifying costs of a grayfield project and 15% if the project meets green building requirements. The program is capped at $10 million per fiscal year with a maximum award per project of $1 million.

Targeted Jobs Withholding Tax Credit: The Targeted Jobs Withholding Tax Credit is a pilot program that allows diversion of withholding funds paid by an employer to be matched by a designated pilot city to create economic incentives directed toward the growth and expansion of targeted businesses locally. The company must be located in Burlington, Council Bluffs, Fort Madison, Keokuk or Sioux City; or relocating to these areas. Withholding agreement allows up to 3% of gross wages paid by the employer to be directed to the project budget on a quarterly basis. This credit has a life of ten years.

In addition, **Iowa's New Jobs Tax Credit** is available to participants in the New Jobs Training (260E) Program. Iowa offers this credit as an incentive for businesses that provide additional training to employees and expand their workforce. It is a one-time tax credit. Tax credit amount depends upon wages paid and the year in which the tax credit is first claimed. The company must commit to expand their Iowa employment base by 10% or more.

Competitive State Incentive Benchmark Template – High-Quality Jobs Program

State and Incentive Program	Iowa - High-Quality Jobs Program
Structure and Targets	
Is the program traceable (i.e.	Yes. The Incentive Program is listed on the Iowa Economic Development site

State and Incentive Program	Iowa - High-Quality Jobs Program
transparent)?	
Is the Incentive Program guided by a dedicated Law or Statue?	The program is established in Iowa Code chapter 15, part 13, sections 15.326 through 15.337. The administrative rules for the program is found at 261 IAC 68.
In which year has the Incentive Program been established and/or updated?	The Iowa Department of Economic Development administered the NJIP for a period of 10 years from 1995 to 2005. Then, in 2005, the program was overhauled and renamed the High-Quality Job Creation program. The basic concept of the NJIP was retained. Then, in 2009, the program's contract administration provisions were standardized with those of the Grow Iowa Values Fund and the name of the program was changed to simply the High -Quality Jobs program.
Which institution or organization is responsible for implementing the Incentive Program?	The Iowa Economic Development Authority (IEDA)
Is the Incentive Program location-bound?	Yes, the firm needs to be based in Iowa and incentivizing jobs located in Iowa.
Does the Incentive Program target specific sector(s), and if so, what are they?	Not explicitly mentioned.
What is the policy objective of the Incentive Program?	The High Quality Jobs (HQJ) program provides qualifying businesses assistance to off-set some of the costs incurred to locate, expand or modernize an Iowa facility. This flexible program includes loans, forgivable loans, tax credits, exemptions and/or refunds. The Iowa Economic Development Authority (IEDA) offers this program to promote growth in businesses, which employ Iowans in jobs defined as high-quality by state statute.
Eligibility and Benefits	

State and Incentive Program	Iowa - High-Quality Jobs Program
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) Must apply prior to the beginning of the project 2) Priority to projects with significant local economic impact 3) Must meet wage threshold requirements: Created jobs must pay at least 100% of the qualifying wage threshold at the start and 120% of the qualifying wage threshold by project completion and through the maintenance period unless in a distressed area Retained jobs must pay at least 120% of the qualifying wage threshold by project completion and through the maintenance period 4) Must provide a sufficient benefits package to all full-time employees, which includes at least one of the following: Business pays 80% of medical premiums for single coverage plans, OR Business pays 50% of medical premiums for family coverage plans, OR Business pays for some level of medical and dental coverage and provides the monetary equivalent value through other employee benefits
What is the application procedure?	Complete the Iowa Project Questionnaire (IPQ) pre-application so IEDA staff can provide individual assistance and guidance to ensure access to programs that best fit your needs. Upon completion of the IPQ, applicants invited to apply for financial assistance may complete the Application for Financial Assistance.
What are the available benefits?	1) Actual award amounts based on the level of need; quality of the jobs; percentage of created or retained jobs defined as high-quality; and the project's economic impact 2: Local property tax exemption of up to 100% of the value added to the property to a period not to exceed 20 years may be available 3) Investment tax credit equal to a percentage of qualifying investment: amortized over 5 years, which offsets Iowa income taxes owed, tax credit earned when corresponding asset is placed in service, credit can be carried forward for up to 7 additional years or until depleted, whichever occurs first 4) Refund of state sales, service or use taxes paid to contractors or subcontractors during construction 5) Refund of sales and use taxes paid on racks, shelving and conveyor equipment for distribution projects 6) State's refundable research activities credit may be increased while participating in the program

State and Incentive Program	Iowa - High-Quality Jobs Program
Are the benefits capped?	Actual award amounts based on the level of need; quality of the jobs; percentage of created or retained jobs defined as high-quality; and the project's economic impact
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Iowa Economic Development.

Ohio

Ohio offers a variety of tax credits and incentives:

State Small Business Credit Initiative: This initiative was granted $55 Million to encourage lending to small businesses. The initiative includes two programs that help finance small businesses and manufacturers that are creditworthy. These firms are not receiving the financing they need from the private sector to expand and create jobs. The first program is the Collateral Enhancement Program, which presents cash deposits as additional collateral for small businesses to be granted loans. The second program is the Ohio Capital Access Program, which Provides financing to for-profit and nonprofit businesses that are having difficulty obtaining business loans through conventional underwriting standards.

JobsOhio Workforce Grant: The objective of the grant is to cultivate economic development, job creation and business expansion in the State of Ohio. Grant decisions are based on a number of project factors, including but not limited to job creation, additional payroll, fixed-asset investment commitment, project return on investment, and project location. The program requires job creation and training within a specific time-period and only specific projects are eligible. Such eligible projects are as follows: Information technology, Maintenance, skilled trades, Leadership skills, Product knowledge, Quality management and processes, Safety training (industry specific), Supervisory, Technical processes, Technical training, On-the-Job training, Equipment, Materials and Travel costs (domestic and international).

JobsOhio Economic Development Grant: The grant was created to promote economic development, business expansion, and job creation by providing funding for eligible projects in the State of Ohio. The grant focuses on fixed-asset and infrastructure investment by companies. Only specific projects are eligible.

Competitive State Incentive Benchmark Template – JobsOhio Economic Development Grant

State and Incentive Program	Ohio - JobsOhio Economic Development Grant
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the JobsOhio website.
Is the Incentive Program guided by a dedicated Law or Statue?	The program is authorized within Chapter 166 Section 01 of the Economic Development Programs for the State of Ohio.
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned.
Which institution or organization is responsible for implementing the Incentive Program?	JobsOhio is a private enterprise, funded by the government.
Is the Incentive Program location-bound?	Apart from being located in Ohio, no.
Does the Incentive Program target specific sector(s), and if so, what are they?	The grant can only be awarded to fund these specific projects: • Land; • Building; • Leasehold improvements; • Machinery and equipment; • Moving and relocation costs of machinery and equipment (freight shipping) related to the project; • Infrastructure including utility, telecommunications, information technology, etc.; • Site development; • Fees and material costs related to planning or feasibility studies; • Engineering Services; and • Software development.

State and Incentive Program	Ohio - JobsOhio Economic Development Grant
What is the policy objective of the Incentive Program?	The purpose of the grant is to promote economic development, business expansion, and job creation by providing funding for eligible projects in the State of Ohio. Grant decisions are based on a number of project factors, including but not limited to job creation, additional payroll, fixed-asset investment commitment, project return on investment, and project location.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. Requires job creation and training of employees within a specified period of time and may consider the amount of proceeds per job created and employee trained. JobsOhio may consider providing assistance for eligible projects that improve operational efficiencies or production expansion, along with the retention of jobs. JobsOhio will set a wage floor based on multiple wage consideration. Also, only specific projects are eligible, as stated before.
What is the application procedure?	Not explicitly mentioned. Must contact JobsOhio to receive application.
What are the available benefits?	Not explicitly mentioned.
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	The JobsOhio Workforce Grant term is based upon the project's completion date.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Ohio Development Series Agency.

Competitive State Incentive Benchmark Template – Jobs Ohio Workforce Grant

State and Incentive Program	JobsOhio Workforce Grant
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes, the Program is listed on the JobsOhio website
Is the Incentive Program guided by a dedicated Law or Statue?	The program is authorized within Chapter 6301 Section 01 of the Workforce Development System Definitions for the State of Ohio
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned
Which institution or organization is responsible for implementing the Incentive Program?	JobsOhio is a private enterprise, funded by the government.
Is the Incentive Program location-bound?	Apart from locating in the State of Ohio, no.
Does the Incentive Program target specific sector(s), and if so, what are they?	The grant can only be awared to fund these specific projects: • IT; • Maintenance, skilled trades; • Leadership skills; • Product knowledge; • Quality management and processes; • Safety training; • Supervisory; • Technical processes; • Technical training; • On-the-job training; • Equipment; • Materials; ahd • Travel costs (domestic and international).
What is the policy objective of the Incentive Program?	The JobsOhio Workforce Grant was created to promote economic development, business expansion, and job creation by providing funding for the improvement of worker skills and abilities in the State of Ohio.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Requires job creation and training of employees within a specified period of time and may consider the amount of proceeds per job created and employee trained. JobsOhio may consider providing assistance for eligible projects that improve operational efficiencies or production expansion, along with the retention of jobs. Also, only specific projects are eligible, as stated before.

What is the application procedure?	Not explicitly mentioned. Must contact JobsOhio to receive application.
What are the available benefits?	The JobsOhio Workforce Grant is reimbursement-based and requires supporting documentation.
Are the benefits capped?	Not explicitly mentioned
What is the duration of the benefits?	The JobsOhio Workforce Grant term is based upon the project's completion date.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on JobsOhio website

Georgia

Georgia offers one of the leading workforce development programs in the country:

Quick-Start Program: This is a free program customized for companies in numerous industries. A Quick Start training regimen is shaped specifically for the skills that a company is looking to develop in its employees. The program is provided at no charge by the Technical College System of Georgia. The program is also versatile in what they train employees for. Quick Start has prepared workers to assemble intricate aircraft components, grow bacteria for vaccines, manufacture plastic and metal products and field inquiries from customers, by phone or online. It is ranked No. 1 in the U.S. in all published surveys of site selection professionals for the past 14 years.

State and Incentive Program	Georgia - Quick Start Program
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program hosts it's own website
Is the Incentive Program guided by a dedicated Law or Statue?	Not explicitly mentioned.
In which year has the Incentive Program been established and/or updated?	It was established in the 1960's.
Which institution or organization is responsible for implementing the Incentive Program?	Georgia Quick Start.
Is the Incentive Program location-bound?	Yes, the firm must reside in Georgia.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, advanced manufacturing, automotive, aviation, bioscience/healthcare, food, distribution and business operations.
What is the policy objective of the Incentive Program?	Quick Start helps companies maintain a competitive advantage by preparing workers for skill sets needed tomorrow as well as today.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Information that will facilitate the evaluation process includes: 1) Number of jobs to be created; 2) Breakdown of jobs by type (job descriptions, function, etc.); 3) Timetable for operational start-up; 4) Hiring timeline (broken out by job type hired monthly or quarterly); 5) Industry sector; 6) Any additional information regarding products, processes, technology, unique requirements, company background, etc.

State and Incentive Program	Georgia - Quick Start Program
What is the application procedure?	The program considers a number of factors when assessing a prospective project. If you want to see if your proposed project might qualify for their services.
What are the available benefits?	A Quick Start training regimen is shaped specifically for the skills that a company is looking to develop in its employees; Training is conducted in classrooms, mobile labs or onsite at the company; Quick Start is provided at no charge by the Technical College System of Georgia; The program is versatile: Quick Start has prepared workers to assemble intricate aircraft components, grow bacteria for vaccines, manufacture plastic and metal products
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Georgia Quick Start Program.

North Carolina

North Carolina offers a couple of grants and incentive programs that aid in biotechnology and green environments.

Pollution Control and Abatement & Recycling:

Pollution Control & Abatement: Pollution control and abatement equipment for manufacturing is excluded from sales and use tax, but is subject to a 1% privilege tax, capped at a maximum of $80 per article. In addition, chemicals purchased by manufacturers to be used in air or stream pollution abatement equipment or processes are also excluded from sales and use tax, but are subject to the same tax privilege, capped at the same value. North Carolina does not levy property tax on real and personal property that is used exclusively for air cleaning, waste disposal or to abate, reduce or prevent air and/or water pollution. To claim an exclusion on property tax liability, a taxpayer must apply to the county for exclusion during the annual listing period and apply to the North Carolina Department of Environmental Quality for exclusion certification.

Recycling: In an effort to divert materials from the waste stream while supporting company growth, expansion and job creation in North Carolina, RBAC offers Recycling Business Development grants to eligible organizations. Funds are typically used for sustainable investments in equipment and buildings necessary to increase the capacity of a recycling company. Funding is made available through an annual request for proposal process that begins in the fall. Applicants may request a maximum of $40,000 and must provide at least a 50% cash match.

N.C. Biotechnology Center, Economic Development Award: The EDA Program provides performance-based grants to local units of government in support of life science company projects. Grants are linked to job creation and retention milestones for specific company projects in the locality of interest. grants awards are made in amounts of up to $100,000 per project based on project job-creation estimates. As for all of its funding programs, the Center has established an application, review and award process for the EDA Program.

R&D and Software Publishing Sales Tax Exemptions: Sales of equipment, or an attachment or repair part for equipment for companies primarily engaging in research and development activities in the physical, engineering, and life sciences, including in the industry group, 54171 NAICS code is exempt from sales and use tax. Sales of equipment, or an attachment or repair part for equipment for companies primarily engaging in software publishing activities for software publishers, including in the industry group, 5112 NAICS code is exempt from sales and use tax.

Competitive State Incentive Benchmark Template – N.C. Biotechnology Center, Economic Development Award

State and Incentive Program	North Carolina - N.C. Biotechnology Center, Economic Development Award
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program in presented on the state's development website

State and Incentive Program	North Carolina - N.C. Biotechnology Center, Economic Development Award
Is the Incentive Program guided by a dedicated Law or Statue?	Not explicitly mentioned.
In which year has the Incentive Program been established and/or updated?	It was established in the 1984.
Which institution or organization is responsible for implementing the Incentive Program?	North Carolina General Assembly through the North Carolina Biotechnology Center organization.
Is the Incentive Program location-bound?	Yes, the firm and/or University must reside in North Carolina.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, research and development in biotechnology.
What is the policy objective of the Incentive Program?	The North Carolina Biotechnology Center works toward six goals: 1) Strengthen North Carolina's academic and industrial biotechnology research capabilities. 2) Foster North Carolina's biotechnology industrial development. 3) Work with business, government and academia to move biotechnology from research to commercialization in North Carolina. 4) Inform North Carolinians about the science, applications, benefits and issues of biotechnology. 5) Enhance the teaching and workforce-training capabilities of North Carolina's educational institutions. 6) Establish North Carolina as a preeminent international location for the biotechnology industry.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Information that will facilitate the evaluation process includes: 1) The firm and/or university must be in the biotechnology industry; 2) The local government administers the grant and allocates funds to the company to be used for project-related investments providing sustainable benefit to the company and community.
What is the application procedure?	Companies and local units of government apply for this program by invitation from the Center's Bioscience Industrial Development staff.
What are the available benefits?	EDA grants awards are made in amounts of up to $100,000 per project based on project job-creation estimates.

State and Incentive Program	North Carolina - N.C. Biotechnology Center, Economic Development Award
Are the benefits capped?	Yes, the onetime grant will be capped at $100,000 per grant.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Economic Development Partnership of North Carolina.

Research and Development Assessment

Goals of Maine's Research and Development Programs

The State of Maine established its current R&D program in 2007. It seeks to encourage companies to create jobs and innovation throughout the State. As part of its wider program of economic development assistance, the R&D program focuses on technical advancement within existing and operating companies. The individual programs are the following:

- The Research Expense Tax Credit;
- The Research and Development Super Credit; and
- The High-Technology Investment Tax Credit.

These are all based on the Federal Credit for Increasing Research Activities of the Internal Revenue Code Section 41; qualifying for the Federal R&D Tax Credit is a pre-requisite. All are credits against State taxes.

Sales tax exemptions and loans for R&D activity are not examined here. Neither are venture capital programs. Sale tax exemption programs and loans are similar between states and are rarely differentiating incentives. Venture capital programs tend to nurture new ideas and businesses from within a state and not an attraction mechanism since young companies are rarely mobile and often have little financial substance.

Research Expense Tax Credit

This is a tax credit for qualified research expenses, including in-house and contracts, seeking to uncover technological information that can be used in developing new businesses or improving existing ones. Key components include:

- Based on excess of three-year base period;
- Credit limited to 5.0% of excess of qualified research plus 7.5% of basic research payment under IRC § 41(e)(1)(A);
- Limited to 100% of the first $25,000 in tax liability, plus 75% in excess of $25,000;
- May not reduce the tax due to less than zero; and
- Carry-forward period is up to 15 years.

The Research and Development Super Credit

This credit is in addition to the Research Expense Tax Credit for larger increases over the base year period. Key components include:

- Applies to qualified research that exceeds the average Maine research expense for the three taxable years immediately preceding June 12, 1997, increased by 50%;
- Limited to tax years beginning before January 1, 2014;
- Credit is limited to 50% of the tax otherwise due after all other credits are taken;
- The credit cannot reduce the tax liability below amount due on the previous year after credits taken; and

- No carry-back, but can be carried forward up to ten years but in no event may the credit in any single year exceed 25% of the taxpayer's tax due after the allowance of any other credits.

High-Technology Investment Tax Credit

This credit is based on the adjusted basis of eligible high-tech equipment purchased or leased by the business engaged primarily in high year activities. "High-technology activity" refers to the design, creation and production of computer software, computer equipment, supporting communications components and other accessories that are directly associated with computer software and computer equipment and the provision of internet access services and advanced telecommunications services. This includes:

- Purchasers and lessors of eligible equipment may qualify for this credit;
- "Eligible equipment" is defined as all computer equipment, electronics components and accessories, communications equipment and computer software placed into service in Maine and used primarily in high-technology activity (certain transmission conditions apply);
- The credit cannot reduce the tax liability below amount due on the previous year after credits taken;
- No carry-back, but can be carried forward up to five years; and
- Except for the credit allowed with respect to the carry-over of unused credit amounts, the tax credit does not apply to tax years beginning on or after January 1, 2016.

The State also has full or partial sales tax exemption programs for machinery and equipment related to manufacturing, R&D, custom computer programming, fuel and electricity and biotechnology.

Maine Technology Institute

In 1999 the state established the Maine Technology Institute (MTI) to encourage the growth of technology companies that create high-quality jobs. Funded by the Department Economic and Community Development (DECD), MTI is a private, non-profit organization and offers assistance in the form of early-stage capital, loans and grants, as well as commercialization assistance. The center, based at the Brunswick Landing Campus, focuses its effort on seven technology sectors leveraging off strengths in knowledge and skill sets within the State:

1. Biotechnology – genetics, genomics, diagnostic products;
2. Composites and Advanced Materials –boat building, industrial and renewable energy;
3. Environment Technologies – services and engineering;
4. Forest Products & Agriculture – variations on tradition product lines, biofuels, bioplastics, specialty and locally-produced foods and beverages;
5. Information Technology – geospatial technologies, new media, bioinformatics and application to other clusters;
6. Marine Technology and Aquaculture – sustaining and preserving fisheries; and
7. Precision Manufacturing – metal products and electronics, network development, training and certification in aviation manufacturing, and bio manufacturing.

These seven technology sectors represent a mix of mature as well as emerging industries. Though the focus of the center is on new technology and the companies that are being created to develop them, the

State actively pursues to develop clusters in these seven technology sectors to contribute to sustainable economic growth and competitiveness. Maine does so by nurturing and strengthening cluster development across these seven sectors, which includes (financial, fiscal and technical) support to encourage expansion of research and development, expansion the workforce, creation of new firms and the development to networks and alliances for financing and product development.

Through its range of financial instruments and products (i.e. funds, grants and loans), MTI supports entrepreneurs and companies with accelerating their progress to the market, leverage additional private and public investment, and ultimately, support their success while expanding their economic impact in Maine. MTI's core activities revolve around three critical stages in the business life cycle, being funding, growing and connecting.

Fund

Within MTI, the Business Ventures Group administers funds geared towards investment in innovative companies and research institutions that are developing products and process that have commercial potential.

One of the key activities of the Business Ventures Group is the management of the Business Innovation Program, which supports technology-based Maine businesses along their development cycle of bringing new products to market while simultaneously accelerating their capacity for profitability and growth.

The Business Innovation Program first and foremost provides its recipients with greater access to coaching and capital for growing businesses. With regards to the seven technology sectors, the Business Innovation Program looks to support companies in Maine's traditional industries such as precision manufacturing, forestry and agriculture as well as emerging industries such as biotechnology and information technology. This includes:

- TechStart Grant;
- Seed Grant;
- Development Loan;
- Business Accelerator Grant;
- Equity Capital; and
- Technical Assistance to help secure the next stages of funding through traditional means, angel investors or other sources in the R&D stages (e.g. national Small Business Innovation Research (SBIR) program and Phase 0 KickStarter).

Source: Maine Technology Institute (2016)

Besides the Business Innovation Program, MTI also administers the Cluster Initiative Program, Renewable Energy Technology Fund and the State's bond fund, Maine Asset Technology Fund. In the past, MTI also managed the Marine Research Fund and Biotechnology Research Fund (both closed).

Grow

Moving beyond the funding phase of innovative and promising companies, MTI also supports companies in their expansion phase. Working with a team of experienced business executives, active investors and resource organizations across the state, MTI offers and links entrepreneurs to assistance to help them create profitable enterprises, raise follow-on capital and grow meaningful jobs in Maine. To support the growth of businesses, MTI supports promising and expanding companies with preparing proposals for funding applications, accommodating award and performance measures and developing collaboration networks to guarantee growth of the business after MTI-support has phased out.

In order to support companies with their expansion ambitions, MTI organizes GROW workshops and webinars where GROW advisors mentor, train and provide counseling opportunities. Other MTI support events include annual events, panels, MTI and Maine Angels Network Mentoring and the SBIR Technical Assistance Program. Finally, the Maine Accelerates Growth Initiative ("MxG") - a new consortium to support the increased growth in Maine's innovation, startup and creative technology community - has been established as a successor of the successful Blackstone Accelerates Growth ("BxG").

Connect

Even though some program supporting the funding and growing phases of innovative and promising companies support the creation of networks, a number of initiatives have been developed that focus exclusively on connecting mentors and partner organizations. A consortium consisting of technology trade associations, leading business executives, active investors, resource organizations across the state, and MTI offers and links entrepreneurs to assistance to help them create profitable enterprises, raise follow-on capital and grow meaningful jobs in Maine.

To successfully connect entrepreneurs and companies with other organizations, MTI has forged partnerships with a number of other economic development organizations, educational institutions and fund managers across the state, including Maine Department of Economic and Community Development (DECD), Maine International Trade Center (MITC), Maine Venture Fund (MVF), Maine's Public Universities/University of Maine System, Maine Procurement Technical Assistance Center (PTAC), Maine Center for Entrepreneurial Development (MCED), Maine Small Business Development Centers (SBDC) and Maine Manufacturing Extension Partnership (MEP).

Competitive State Programs

From the latest version of the Incentive Transparency Index (Benchmark 4 of the Economic Development Assessment section), it appears Maine has risen in the ranks of the states in terms of transparency of its incentive programs. This calls for a further investigation into the distinctive incentive

programs and the characteristic features these competing states offer. The selection of Vermont, Rhode Island, Massachusetts, Connecticut, New York, Ohio, Iowa, Georgia, North Carolina and New Hampshire for the competitive state incentive programs benchmark is furthermore justified given their modest economic size and structure, which is similar to that of Maine and the comparable economic position of these states. Also, as can be concluded from the Incentive Productivity Benchmark (Benchmark 3 of the Economic Development Assessment section), Maine's incentive productivity can be grouped together with that of Vermont, Rhode Island, Massachusetts, Connecticut, New York, Ohio, Iowa, Georgia, North Carolina and New Hampshire.

This competitive state incentive programs benchmark is structured as follows. The first section introduces the incentive regimes across the three competitive benchmark states after which the focus exclusively shifts to R&D incentive programs. Per state, one key R&D incentive programs has been selected and evaluated in-depth.

To safeguard consistency, a customized template has been designed to compare these selected competitive incentive programs across state borders. This template consists of multiple questions which have been categorized according to three components: Structure and Targets, Eligibility and Benefits and Performance and Evaluation. The R&D incentive programs that have been benchmarked by means of this template have been selected based on their uniqueness and competitiveness in combination with the fiscal and financial impact for potential recipients. A total of nine of competitive R&D incentive programs have been selected to be benchmarked:

- New Hampshire's Research and Development Tax Credit;
- Rhode Island's Research and Development Expense Credit; and
- Vermont's Research and Development Tax Credit.
- Massachusetts's Life Science Tax Incentive Program
- Connecticut's Research and Experimental Expenditures Tax Credit
- New York's Life Sciences R&D Tax Credit
- Iowa's Research Activities Program
- Ohio's Research and Development Tax Incentive Program
- North Carolina's N.C. Biotechnology Center, Economic Development Award

The most prominent incentive programs New Hampshire, Rhode Island, Massachusetts, Connecticut, Iowa, Ohio, North Carolina and Vermont offer have been summarized in the table below. The incentive programs have been grouped according to the type of incentive. A broad distinction can be made between direct financial or fiscal incentives (e.g. tax credits and cash grant) as opposed to indirect incentives (e.g. technical incentives). Direct incentives can be further grouped into investment incentives, land and infrastructure incentives, training and employment incentives and incentives related to R&D. Indirect incentives can be split into regulatory and administrative incentives on the one hand and technical incentives on the other hand. For this section, the focus will solely be on the R&D incentives as marked in green in the table below.

New Hampshire

The only exclusive R&D incentive program offered within New Hampshire is the New Hampshire Research and Development Tax Credit. This incentive consists of a direct fiscal incentive which allows companies to deduct R&D expenses against business profits and enterprise taxes.

Competitive State Incentive Benchmark Template – Research and Development (R&D) Tax Credit (NH)

State and Incentive Program	New Hampshire - Research and Development (R&D) Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the website of the New Hampshire Department of Revenue Administration.
Is the Incentive Program guided by a dedicated Law or Statue?	Chapter 162-P Research And Development Tax Credit Program and Chapter 77-A:5 Credits.
In which year has the Incentive Program been established and/or updated?	Last revised in 2015 through Senate Bill 1. It repealed the prospective repeal date of the credit. During the 2015 session, House Bill 2 (Chapter 276, Section 241, Laws of 2015) was passed increasing the award to $7,000,000, effective July 1, 2017
Which institution or organization is responsible for implementing the Incentive Program?	New Hampshire Department of Revenue Administration.
Is the Incentive Program location-bound?	No.
Does the Incentive Program target specific sector(s), and if so, what are they?	Apart from companies undertaking research and development, no clear sector approach has been taken.
What is the policy objective of the Incentive Program?	Supporting businesses with undertaking research and development.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. The tax credit is for expenditures made or incurred during the fiscal year for "qualified manufacturing research and development". Expenditures related to "qualified manufacturing research and development" are defined as wages paid or incurred to an employee of the business organization. Such wages: 1) Shall be treated as wages for qualified research expenses under section 41(b) of the United States Internal Revenue Code; 2) Are paid or incurred because of services undertaken for the purpose of discovering information which constitutes qualified research and development of a new or improved manufacturing process or business component of the business organization; and 3) Qualify and are reported as a credit by the business organization under section 41 of the United States Internal Revenue Code.
What is the application procedure?	Applicants need to fill out the Research and Development Tax Credit Application Form DP-165. Applications for the first fiscal year of the credit shall be filed with the Department of Revenue Administration on or before June 30 following the tax year during which the research and development occurred. The Department will send acknowledgement letters to all applicants by July 31. Applicants will be notified of tax credit amounts granted to them by September 30.
What are the available	A tax credit to cover expenditures of research and development. The credit

State and Incentive Program	New Hampshire - Research and Development (R&D) Tax Credit
benefits?	is first applied against the business profits tax. Any remainder may be applied against the business enterprise tax. The tax credit is calculated at 10% of the business organization's qualified manufacturing research and development expenditures for the taxable year. A total budget of $2,000,000 has been allocated for R&D tax credits across New Hampshire per fiscal year. In the event that the aggregate amount of tax credits applied for, in any given fiscal year, exceeds $2,000,000, all credits for that year shall be reduced proportionately.
Are the benefits capped?	Yes. The amount of the credit shall be the lesser of 10% of the business organization's qualified manufacturing research and development expenditures for the taxable year over the base amount or $50,000.
What is the duration of the benefits?	Unused portions of the credit may be carried forward for up to five years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on New Hampshire Economic Department

Rhode Island

Out of the peer states, Rhode Island and Ohio are tied in offering the largest number of R&D incentive programs. Rhode Island offers a number of tax credits, deductions and exemptions directly related to the costs of conducting research and development:

R&D Expense Credit: a tax credit of 22.5% for increases in qualified research expenses. This credit is available Rhode Island companies filed as a C-corporation. If the increase above base period expenditures exceeds $111,111, the credit equals 16.9% of the excess. Unused credits may be carried forward for up to seven years.

R&D Property Credit: a tax credit of 10.0% for expenditures paid or incurred for the construction, reconstruction or acquisition of any property that is principally used or to be used for R&D in the experimental or laboratory sense. The property must be owned, depreciable and have a useful life of three years or more. Similar to the R&D Expense Credit, unused credit may be carried forward for up to seven years.

Elective Deduction for R&D Facilities: Instead of depreciation or the investment tax credit, a taxpayer is allowed a one-year write-off for expenditures paid or incurred during the taxable year for the construction, reconstruction or acquisition of all qualifying depreciable tangible property, including buildings, which is used or to be used for the purpose of R&D in the experimental or laboratory sense. The deduction is allowed under the corporate income tax.

R&D Sales Tax Exemption: exemption of Rhode Island Sales and Use Tax that normally would have been applied for the sales or use of scientific equipment, computers, software and related items to a qualifying firm to be used predominantly for research and development purposes.

Apart from these R&D incentive programs, Rhode Island offers multiple grant programs that fund R&D assistance, partnerships and co-operation. The main R&D grant program is the Industry Cluster Grants, which consist of grants from $75,000 up to $250,000 to fund planning and organization of innovative industry clusters and grants from $100,000 up to $500,000 to implement programs that strengthen the capacities of the cluster (e.g. R&D, workforce development marketing, transfer of technologies).

Other R&D grant programs include the Innovation Vouchers (grants of up to $50,000 to fund R&D assistance from a Rhode Island university, research center or medical center), Innovation Networking Matching Grants (co-investment grants starting at $50,000 for small business development in technical assistance, access to capital or space on flexible terms) and the Innovative Rhode Island Small Businesses Fund (grants of up to $3,000 offsetting the costs associated with SBIR/STTR Phase I applications and matching grants of up to $45,000 to encourage SBIR/STTR Phase I recipients to apply for more substantial SBIR/STTR Phase II, $100,000, awards).

Competitive State Incentive Benchmark Template – Research and Development (R&D) Expense Credit (RI)

State and Incentive Program	Rhode Island - Research and Development (R&D) Expense Credit
Structure and Targets	
Is the program traceable (i.e.	Yes. The Incentive Program is listed on the website of the Rhode Island

State and Incentive Program	Rhode Island - Research and Development (R&D) Expense Credit
transparent)?	Commerce Corporation.
Is the Incentive Program guided by a dedicated Law or Statue?	Regulation CR 03-07 Research and Development Expenses Credit and Rhode Island General Laws § 44-32-3 Credit for Qualified Research Expenses.
In which year has the Incentive Program been established and/or updated?	This regulation has been effective as of January 1, 2003 and amends and supersedes regulation CR 96-07 promulgated January 1, 1996.
Which institution or organization is responsible for implementing the Incentive Program?	Division of Taxation of the Rhode Island Department of Revenue.
Is the Incentive Program location-bound?	No.
Does the Incentive Program target specific sector(s), and if so, what are they?	Apart from companies that carry out research, no specific sectors are targeted.
What is the policy objective of the Incentive Program?	Not specifically mentioned but generally support companies with conducting R&D.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	The credit is available to corporations, sole proprietors, or passed through from partnerships, joint ventures or subchapter S corporations for qualified research expenses. The qualified research expenses are equal to the qualified research expenses of the Federal R&D Tax Credit defined in section 41 of the Internal Revenue Code, provided, however, that such expenses shall have been incurred in Rhode Island after July 1, 1994.
What is the application procedure?	Filling out Form RI-7695E in addition to Federal Form 6765 - Credit For Increasing Research Activities and Form RI-1120C.
What are the available benefits?	In addition to the Federal R&D Tax Credit, this program provides a 5% credit of the excess (if any) of the qualifying research expenses in the taxable year over the base period research expenses. The qualifying research expenses must have been incurred in Rhode Island after July 1, 1994. For periods January 1, 1998 and thereafter, the credit is 22.5% for qualified research expenses up to $111,111 and 16.9% for the remaining expenses over $111,111.
Are the benefits capped?	The tax credit rate is reduced from 22.5% to 16.9% if the remaining qualified research expenses exceed $111,111 (for the period from January 1, 1998 onwards). In addition, the R&D Property Credit and Investment Tax Credit shall be used before this credit. The credit is limited to one-half the tax otherwise payable after all other credits available to the taxpayer have been used.
What is the duration of the benefits?	Unused credits may be carried forward for up to seven years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Rhode Island Commerce Corporation

Vermont

Vermont offers only one incentive program that is exclusively geared towards encouraging R&D. The Vermont R&D Tax Credit is complementary to the Federal R&D Tax Credit and may equal up to 27.0% of the Federal R&D Tax Credit allowed in the taxable year. Eligibility criteria are similar to those of the Federal R&D Tax Credit which are defined under section 41 of the United States Internal Revenue Code. Contrary to New Hampshire, where the tax credit may be carried forward up to 5 years if the credit cannot be applied in the year earned, the taxpayer in Vermont can carry forward the credit for up to 10 years.

Competitive State Incentive Benchmark Template – Research and Development (R&D) Tax Credit (VT)

State and Incentive Program	Vermont - Research and Development (R&D) Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Limited information is available on the website of the Department of Taxes and the Vermont Agency of Commerce & Community Development.
Is the Incentive Program guided by a dedicated Law or Statue?	The tax credit has been enacted by Vermont's General Assembly but no dedicated Law or Statue is explicitly mentioned.
In which year has the Incentive Program been established and/or updated?	The tax credit was enacted by the Vermont General Assembly in 2009 and is effective for tax years 2011 onwards.
Which institution or organization is responsible for implementing the Incentive Program?	Department of Taxes.
Is the Incentive Program location-bound?	No.
Does the Incentive Program target specific sector(s), and if so, what are they?	Apart from companies that carry out research, no specific sectors are targeted.
What is the policy objective of the Incentive Program?	First and foremost, the credit is expected to spur innovation and economic growth by promoting investment in R&D jobs. In addition, due of the previous recession, Vermont expects future federal government R&D tax credits to run on the low side.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Vermont companies that make eligible R&D expenditures in Vermont can claim this tax credit. Eligible R&D investments are the same as those defined by the Federal R&D Tax Credit under Section 41(a) of the IRS Code but must have been made within Vermont. This credit can be applied against personal income tax or business or corporate income tax.
What is the application procedure?	Not explicitly mentioned.
What are the available benefits?	A tax credit equal to 30.0% of the Federal R&D Tax Credit allowed in the taxable year. However, it seems the tax credit rate has recently been reduced to 27.0% of the Federal R&D Tax Credit.
Are the benefits capped?	No.
What is the duration of the benefits?	Unused credits may be carried forward for up to ten years.
Performance and Evaluation	

State and Incentive Program	Vermont - Research and Development (R&D) Tax Credit
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned. However, the Department of Taxes publishes an annual overview of companies that have filed a claim for this tax credit.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Vermont Agency of Commerce & Community Development

Massachusetts

Massachusetts has two major R&D incentive programs. Both offerings are tax credits for the robust research and development industry:

Life Science Tax Incentive Credit: The primary goal is to create new long-term jobs in the Commonwealth for companies engaged in life sciences research and development, commercialization, and manufacturing. The program offers competitively awarded tax incentives to companies that meet specified hiring goals, including the Life Sciences Investment Tax and Research Credits.

Research and Development Tax Credit: The Massachusetts R&D Tax Credit is divided into two categories. The first credit category is a ten-percent credit designed for Qualified Expenses which are defined as any research expense incurred which would qualify for the Federal R&D tax credit. The second credit category is a fifteen-percent credit available to Basic Research Payments for any costs related to donations and contributions made to research organizations such as hospitals and universities. Unlike many other states, the Massachusetts R&D tax credit is permanent. The R&D tax credit can be taken in conjunction with the state's Investment Tax Credit of three-percent (or five-percent as part of the Economic Development Incentive Program). The R&D tax credit may reduce the corporation's tax to the minimum tax of $456.

Competitive State Incentive Benchmark Template – Life Science Tax Incentive Program

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed on the Government website of the Massachusetts
Is the Incentive Program guided by a dedicated Law or Statue?	Tax Incentive Program pursuant to chapter 23I of the General Laws
In which year has the Incentive Program been established and/or updated?	The program was established in 2008. These incentives are effective from January 1, 2009 through December 31, 2018.
Which institution or organization is responsible for implementing the Incentive Program?	The Life Sciences Tax Incentive Program is jointly administered by the Massachusetts Life Sciences Center and the Department of Revenue.
Is the Incentive Program location-bound?	Yes, applicants must be engaged in the Commonwealth of Massachusetts.

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, applicants must be engaged in life sciences research, development, manufacturing or commercialization.
What is the policy objective of the Incentive Program?	The primary goal of the program is to incentivize life sciences companies to create new long-term jobs in Massachusetts.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. A company qualified to benefit from this Incentive Program must: 1) The company must be located in the Commonwealth of Massachusetts 2) Applicants must commit to creating and retaining 10 new new full time equivalent employees (FTE's). Applicants must also have 10 active full time equivalent employees (FTE's) at the time of application. 3) Must constitute as a "Life Science" company
What is the application procedure?	Companies interested in applying for awards under the Program should first review the Program Solicitation and application, which will be available starting on January 5, 2017 at the MLSC's web site: http://www.masslifesciences.com/programs/tax. Each company may submit only one application.
What are the available benefits?	1) Life sciences investment tax credit (refundable) 2) FDA user fees credit (refundable) 3) Extension of net operating losses from 5 to 15 years 4) Elimination of throwback provision 5) 90% refund of already-available excess §38M research credits (refundable) 6) 38W life sciences research credit 7) Deduction for qualified orphan drug expenses 8) Designation as R&D company for sales tax purposes 9) Sales tax exemption for certain property 10) Life sciences jobs incentive credit (refundable)
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	

State and Incentive Program	Massachusetts - Life Science Tax Incentive Program
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on MassEcon.

Connecticut

Connecticut has two major R&D tax credits. As described below:

Research and Development Expenses Tax Credit: A tax credit may be applied against the tax imposed under Chapter 208 (Corporation Business Tax) for research and development expenses incurred in Connecticut. A qualified small business is entitled to a tentative tax credit equal to 6% of its research and development expenses. If it results in a greater tentative tax credit, companies headquartered in an Enterprise Zone, with revenues in excess of $3 billion, employing more than 2,500 employees, shall multiply their research and development expenses by 3.5%.

Research and Experimental Expenditures Tax Credit: A tax credit may be applied against the tax imposed under Chapter 208 (Corporation Business Tax) for the incremental increase in research and experimental expenditures conducted in Connecticut. Multiply by 20% the excess of the research and experimental expenditures conducted in Connecticut during the current income year over the amount spent on such expenditures during the preceding income year. The tax credit shall be carried forward for 15 successive income years until the tax credit is fully taken. No carryback is allowed.

Competitive State Incentive Benchmark Template – Research and Experimental Expenditures Tax Credit

State and Incentive Program	Connecticut - Research and Experimental Expenditures Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program in presented on the state's development website
Is the Incentive Program guided by a dedicated Law or Statue?	the tax imposed under Chapter 208 (Corporation Business Tax). Conn. Gen. Stat. §§ 12-217j and 12-217ee; IRC §174
In which year has the Incentive Program been established and/or updated?	It was established in the 1986.
Which institution or organization is responsible for implementing the Incentive Program?	Connecticut Department of Revenue Services
Is the Incentive Program location-bound?	Yes, the firm must reside in Connecticut.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, research and experimentation.

State and Incentive Program	Connecticut - Research and Experimental Expenditures Tax Credit
What is the policy objective of the Incentive Program?	The North Carolina Biotechnology Center works toward six goals: 1) Strengthen North Carolina's academic and industrial biotechnology research capabilities. 2) Foster North Carolina's biotechnology industrial development. 3) Work with business, government and academia to move biotechnology from research to commercialization in North Carolina. 4) Inform North Carolinians about the science, applications, benefits and issues of biotechnology. 5) Enhance the teaching and workforce-training capabilities of North Carolina's educational institutions. 6) Establish North Carolina as a preeminent international location for the biotechnology industry.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Information that will facilitate the evaluation process includes: 1) Expenditures incurred in connection with the taxpayer's trade or business that represent research and development costs in the experimental or laboratory sense; 2) All costs incident to the development or improvement of a product, including any pilot model, process, formula, invention, technique, patent, or similar property. The product can be used by the corporation in its trade or business or can be held for sale, lease, or license; or 3) Costs of obtaining a patent, such as attorneys' fees expended in making and perfecting a patent application.
What is the application procedure?	Complete Form CT-1120RC, Research and Experimental Expenditures Credit, and attach it to Form CT-1120K, Business Tax Credit Summary. The following information should be attached to Form CT-1120RC: 1) A full and complete description of the nature of the research projects conducted by the company during the income year, and the location(s) where the research is conducted; 2) A full and complete description of the methods used to obtain the amount spent directly on research and experimental expenditures conducted in Connecticut; 3) A detailed description of each source of information used to complete the tax credit, including the methods and calculations of expense allocation, if any; and 4) The job title and detailed description of each employee whose wages are included in the research expenditures.

State and Incentive Program	Connecticut - Research and Experimental Expenditures Tax Credit
What are the available benefits?	Multiply by 20% the excess of the research and experimental expenditures conducted in Connecticut during the current income year over the amount spent on such expenditures during the preceding income year.
Are the benefits capped?	Not explicitly mentioned.
What is the duration of the benefits?	The tax credit shall be carried forward for 15 successive income years until the tax credit is fully taken. No carryback is allowed.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on State of Connecticut Department of Revenue Services

New York

New York has a singular R&D tax incentive for the state. However, it has an immense annual endowment. The Life Sciences Tax Credit Program credits of $10 million per year can be allocated and used to encourage new businesses to conduct their research and development in the State. Qualified life sciences companies may be eligible to receive a fully refundable credit based on qualified research and development expenditures incurred in New York State (NYS). The credit is 15 percent for a company that employs 10 or more persons and 20 percent for a company that employs 10 or less. The credit is allowed for up to three consecutive years beginning with the first taxable year on or after January 1, 2018 during which the qualified life sciences company meets the eligibility criteria. The credit is capped at $500,000 per year for a lifetime cap of $1.5 million.

Competitive State Incentive Benchmark Template – Life Science R&D Tax Credit

State and Incentive Program	New York - Life Sciences R&D Tax Credit
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program in presented on the state's development website
Is the Incentive Program guided by a dedicated Law or Statue?	Not explicitly mentioned.
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned.
Which institution or organization is responsible for implementing the Incentive Program?	Empire State Development
Is the Incentive Program location-bound?	Yes, the firm must reside in New York State.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, the research and development sector.
What is the policy objective of the Incentive Program?	The Life Sciences Research and Development Tax Credit Program is designed to support new life sciences businesses locating, inventing, commercializing and producing in New York State.

State and Incentive Program	New York - Life Sciences R&D Tax Credit
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Information that will facilitate the evaluation process depends on the definition of life sciences. Life sciences means agricultural biotechnology, biogenetics, bioinformatics, biomedical engineering, biopharmaceuticals, academic medical centers, biotechnology, chemical synthesis, chemistry technology, medical diagnostics, genomics, medical image analysis, marine biology, medical devices, medical nanotechnology, natural product pharmaceuticals proteomics, regenerative medicine, RNA interference, stem cell research, medical and neurological clinical trials, health robotics and veterinary science.
What is the application procedure?	Click here to see the extensive list.
What are the available benefits?	Program credits of $10 million per year can be allocated and used to encourage new businesses to conduct their research and development in the State. Qualified life sciences companies may be eligible to receive a fully refundable credit based on qualified research and development expenditures incurred in New York State (NYS). The credit is 15 percent for a company that employs 10 or more persons and 20 percent for a company that employs 10 or less. The credit is allowed for up to three consecutive years beginning with the first taxable year on or after January 1, 2018 during which the qualified life sciences company meets the eligibility criteria.
Are the benefits capped?	Yes, the credit is capped at $500,000 per year for a lifetime cap of $1.5 million.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Empire State Development.

Iowa

Iowa has two major R&D incentive offerings. One is a program while the other is a fund. Both offerings' goals are to innovate and accelerate the growth of this industry in Iowa:

Research Activities Program: Iowa companies earn refundable tax credits for research and development investments that may be paid directly in cash to the company once its tax liabilities have been met. A company must meet the qualifications of the federal research credit in order to be eligible. Supplemental research credits are also available through the High-Quality Jobs (HQJ) program. Tax credits are available for expenditures including, wages paid to an employee for performing or supporting a research activity conducted at an Iowa facility or for an employee in Iowa who directly supervises or directly supports research activities; Supplies including tangible property other than land, improvements to land and depreciable property; 6.5% of expenses related to contract research. Research may include manufacturing process improvements and time spent by engineers, management and other employees designing and testing new manufacturing processes. Tax credit calculation is based on the total amount of research expenses, the company's gross receipts and a fixed base percentage, which changes based on the number of years the company has been incurring qualified research expenditures in Iowa.

Iowa Innovation Acceleration Fund: The fund provides financing to eligible businesses through two program components that correspond to different stages of growth for investment-grade, high-growth enterprises. Awards in the form of royalty arrangements or loans with a 1:1 (private:public) match. The fund is split into two Programs, PROPEL and INNOVATION EXPANSION. PROPEL awards up to $300,000 to accelerate market development for companies that have critical management in place, have a validated business model and an established customer base that's generating substantive revenue. INNOVATION EXPANSION awards up to $500,000 to encourage expansion of product lines in companies that have a complete management infrastructure, a demonstrated historical profitability and an established customer base; funding provides assistance for product refinement and market expansion activities for unique, innovative and competitive products.

Competitive State Incentive Benchmark Template – Research Activities Program

State and Incentive Program	Iowa - Research Activities Program
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program in presented on the state's development website
Is the Incentive Program guided by a dedicated Law or Statue?	Not explicitly mentioned.

State and Incentive Program	Iowa - Research Activities Program
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned.
Which institution or organization is responsible for implementing the Incentive Program?	Economic Development Association
Is the Incentive Program location-bound?	Yes, the firm must reside in Iowa.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, research and development in life sciences.
What is the policy objective of the Incentive Program?	Refundable tax credits for research and development investments make companies more profitable.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	A company must meet the qualifications of the federal research credit in order to be eligible.
What is the application procedure?	Companies should contact a tax advisor to determine if activities and expenditures qualify

State and Incentive Program	Iowa - Research Activities Program
What are the available benefits?	Tax credits are available for expenditures including: 1) Wages paid to an employee for performing or supporting a research activity conducted at an Iowa facility or for an employee in Iowa who directly supervises or directly supports research activities. 2) Supplies including tangible property other than land, improvements to land and depreciable property 6.5% of expenses related to contract research.
Are the benefits capped?	The cap of 6.5% of expenses.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Economic Development Association.

Ohio

Ohio offers three key R&D incentive programs. Ohio offers loan fund servicing and tax grants.

Research and Development Investment Loan Fund: The purpose of the Research and Development Investment Loan Fund is to facilitate R&D capabilities as well as high-wage jobs. The loan's path to accomplish this goal is by providing low-interest loans partnered with a tax credit to Ohio businesses. This program may finance allowable project costs with R&D Loans typically ranging in size from $500,000 to $5,000,000. The amount of R&D Loan will consider additional financing offered through other State loan programs total financing from State programs should typically range from 20% to 40% of the project investment. Corporations meeting the business requirements are also eligible for a loan repayment tax credit against their Ohio Commercial Activity Tax liability. The credits are equal to the amount of principal and interest repaid on the loan up to a maximum annual credit of $150,000. The credit is non-refundable, and any unused credits may be carried forward until expended.

Research and Development Center Grant: Objective of the Research and Development Center Grant is to create a physical facility within the State of Ohio in order to support the development and commercialization of emerging technologies and/or products that align with one or more of JobsOhio's targeted industries. These industries include: Advanced Manufacturing, Aerospace & Aviation, Automotive, BioHealth, Financial Services, Food Processing, Information Technology, Logistics & Distribution and Shale Energy & Petrochemicals. The presentation of this grant to a company involves an upfront commitment by a corporation to develop and commercialize multiple products and innovations over a 10+ year life expectancy. An R&D Center could also include existing space that is re-purposed for a new R&D Center. An R&D Center Grant may provide funding for a portion of the costs related to a new center over 5 years. The R&D Center Grant program will have an initial total funding authorization of $50 million.

Innovation Ohio Loan Fund: The purpose of the Innovation Ohio Loan Fund is to aid in the presence of constant innovation by promoting assistance to existing Ohio companies in developing next generation products and services within certain Targeted Industry Sectors. The IOF Loan is intended to provide capital to Ohio companies with limited access to capital and funds from conventional financing sources due to technical and commercial risk factors associated with the development of new products or services. The IOF Loan may finance up to 75% of allowable project costs with loans typically ranging in size from $500,000 to $1,500,000. The target industry sectors are that of: Advanced Materials, Instruments, Controls and Electronics, Power and Propulsion, Biosciences, Information Technology.

Competitive State Incentive Benchmark Template – Research and Development Investment Loan Fund

State and Incentive Program	Ohio - Research and Development Investment Loan Fund
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The Incentive Program is listed presently on the JobsOhio site

State and Incentive Program	Ohio - Research and Development Investment Loan Fund
Is the Incentive Program guided by a dedicated Law or Statue?	The program is authorized within Chapter 166, Section 21 of the Ohio Revised Code – Economic Development Program.
In which year has the Incentive Program been established and/or updated?	Not explicitly mentioned.
Which institution or organization is responsible for implementing the Incentive Program?	JobsOhio – A private enterprise funded by the government
Is the Incentive Program location-bound?	Yes, the corporation must to be located in Ohio.
Does the Incentive Program target specific sector(s), and if so, what are they?	The sector of Research and Development. Within this sector, eligible projects include: • Land and/or building purchase if the project involves the purchase of an existing building, the business must occupy at least 51% of the premises • Machinery & equipment purchase • Building construction and/or renovation costs if the project involves new construction the business must occupy at least 60% of the premises • Long-term leasehold improvements • Capitalizable costs directly related to a fixed-asset purchase
What is the policy objective of the Incentive Program?	To facilitate R&D capabilities as well as high-wage jobs. The loan's track to accomplish this goal is by providing low-interest loans partnered with a tax credit to Ohio businesses.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Yes. The corporation must be included in the target industry of Research and Development. Within this Industry, the specific projects that are eligible for the fund are stated above.
What is the application procedure?	Not explicitly mentioned. The corporation should contact JobsOhio for further details.

State and Incentive Program	Ohio - Research and Development Investment Loan Fund
What are the available benefits?	The program may finance allowable project costs with R&D Loans typically ranging in size from $500,000 to $5,000,000. The amount of R&D Loan will consider additional financing offered through other State loan programs total financing from State programs should typically range from 20% to 40% of the project investment.
Are the benefits capped?	There is a soft cap on the loan at $5,000,000. The cap on the other state loan programs within the same project should be 40%.
What is the duration of the benefits?	The R&D Loan term is based upon the useful life of the allowable project costs/uses financed. The term for real estate is up to 15 years and the term for machinery and equipment is up to 10 years.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Ohio Development Series Agency.

North Carolina

North Carolina has two major R&D programs. This is surprising considering that the Research Triangle Park in Durham is recognized nation-wide for the numerous biotechnology companies stationed there.

N.C. Biotechnology Center, Economic Development Award: The EDA Program provides performance-based grants to local units of government in support of life science company projects. Grants are linked to job creation and retention milestones for specific company projects in the locality of interest. grants awards are made in amounts of up to $100,000 per project based on project job-creation estimates. As for all of its funding programs, the Center has established an application, review and award process for the EDA Program.

R&D and Software Publishing Sales Tax Exemptions: Sales of equipment, or an attachment or repair part for equipment for companies primarily engaging in research and development activities in the physical, engineering, and life sciences, including in the industry group, 54171 NAICS code is exempt from sales and use tax. Sales of equipment, or an attachment or repair part for equipment for companies primarily engaging in software publishing activities for software publishers, including in the industry group, 5112 NAICS code is exempt from sales and use tax.

Competitive State Incentive Benchmark Template – N.C. Biotechnology Center, Economic Development Award

State and Incentive Program	North Carolina - N.C. Biotechnology Center, Economic Development Award
Structure and Targets	
Is the program traceable (i.e. transparent)?	Yes. The program in presented on the state's development website
Is the Incentive Program guided by a dedicated Law or Statue?	Not explicitly mentioned.
In which year has the Incentive Program been established and/or updated?	It was established in the 1984.
Which institution or organization is responsible for implementing the Incentive Program?	North Carolina General Assembly through the North Carolina Biotechnology Center organization.
Is the Incentive Program location-bound?	Yes, the firm and/or University must reside in North Carolina.
Does the Incentive Program target specific sector(s), and if so, what are they?	Yes, research and development in biotechnology.

State and Incentive Program	North Carolina - N.C. Biotechnology Center, Economic Development Award
What is the policy objective of the Incentive Program?	The North Carolina Biotechnology Center works toward six goals: 1) Strengthen North Carolina's academic and industrial biotechnology research capabilities. 2) Foster North Carolina's biotechnology industrial development. 3) Work with business, government and academia to move biotechnology from research to commercialization in North Carolina. 4) Inform North Carolinians about the science, applications, benefits and issues of biotechnology. 5) Enhance the teaching and workforce-training capabilities of North Carolina's educational institutions. 6) Establish North Carolina as a preeminent international location for the biotechnology industry.
Eligibility and Benefits	
Does the Incentive Program make any notion of specific eligibility criteria and if so, which are the most frequently mentioned ones?	Information that will facilitate the evaluation process includes: 1) The firm and/or university must be in the biotechnology industry; 2) The local government administers the grant and allocates funds to the company to be used for project-related investments providing sustainable benefit to the company and community.
What is the application procedure?	Companies and local units of government apply for this program by invitation from the Center's Bioscience Industrial Development staff.
What are the available benefits?	EDA grants awards are made in amounts of up to $100,000 per project based on project job-creation estimates.
Are the benefits capped?	Yes, the onetime grant will be capped at $100,000 per grant.
What is the duration of the benefits?	Not explicitly mentioned.
Performance and Evaluation	
Does the Incentive Program have M&E systems and procedures in place?	Not explicitly mentioned.
Does the Incentive Program have clawback systems and procedures in place?	Not explicitly mentioned.

Source: Investment Consulting Associates (ICA), based on Economic Development Partnership of North Carolina.