



**ECONOMIC IMPACT OF THE
OPPORTUNITY MAINE
INITIATIVE**

Analysis by Clifford Ginn

I. EXECUTIVE SUMMARY

Background Facts About Higher Education in Maine

Number of degree earners

- The number of Maine high school students is projected to decrease 20% between 2008 and 2018.
- 14,274 Mainers graduated from high school in 2005, and roughly 3,010 Mainers earned their GED.
- Out of 17,284 diploma earners, 9,852 (57%) will pursue associate's or bachelor's degrees.
- Out of the 9,852 who pursue degrees, 6,798 (69%) will complete degree programs.
- Out of the 6,798 who earn degrees, 2,108 (31%) will earn associate's degrees and stop there, while 4,690 (69%) will earn at least a bachelor's degree.
- Thus, 39% of diploma earners will earn degrees, and 27% of diploma earners will earn at least a bachelor's degree.
- Of the 39% of diploma earners who earn degrees, 53.6% leave the State, though many of those return later in their careers.

Benefits of a degree

- We estimate that the median individual in 2008 would earn \$16,666 more with a bachelor's degree than with a high school diploma, and \$10,000 with an associate's degree.
- Some education researchers would put the 2008 numbers at \$21,243 and \$10,304.
- Each degree cuts annual spending on unemployment, welfare, Medicaid, and incarceration by \$905.

Debt Profile

- 61% of students pursuing associate's and bachelor's degrees in Maine have student loans.
- This year, average debt load for Maine bachelor's degree graduates with loans will be \$22,301. Average debt load for associate's degree graduates will be \$11,150. By 2008, assuming growth at the rate of inflation, these numbers would be \$22,992 and \$11,496, respectively.
- Applying the national ratio between mean and median debt suggests median 2008 bachelor's and associate's degree debt loads of \$20,072 and \$10,036, respectively.

Goals over the first ten years after enactment:

- Go from 57% of diploma earners enrolling in degree programs to 82%.
- Go from 69% completion rate to 83%.
- Go from 46.4% staying in the State after earning their degrees to 75%.

Economic Impact between 2008 and 2018¹

- In 2008, average full-time tuition and fees are projected to be \$3,969 per year at the Maine Community College System and \$7,166.25 at the University of Maine System.
- For individuals graduating in 2008, the credit caps will be \$1,532 for associate's degree earners and \$5,532 for bachelor's degree earners.
- The average tax credit claimed would be \$1,003.60 for associate's degree earners. The average tax credit claimed should be \$2,007.20 per year for bachelor's degree earners. It is unlikely that the averages would be larger than \$1,150 and \$2,300. To be conservative, Opportunity Maine uses the higher numbers in its projections.
- As of 2008, the median associate's degree premium would be \$10,000, and the median bachelor's degree premium would be \$16,666.
- Assuming that 13.4% of that additional income is paid in State and local taxes, the associate's degree premium would produce \$1,340 per year in additional revenue, while the bachelor's degree premium would produce \$2,233 in additional revenue. Applying the standard Maine income multiplier of 1.65, the revenue benefit from the premiums would be \$2,211 and \$3,685, respectively.
- Under these assumptions, with a realistic progression toward the goals stated above, the Opportunity Maine initiative should boost State and local tax revenues by roughly \$824,000 in 2009, growing to \$70,446,000 in 2018, while the costs of tax credits will grow from \$1,186,000 to \$55,867,000. The initiative should begin to pay for itself by 2015, and even in its most expensive year (2012), tax credit costs only exceed the State and local tax boost by \$2,754,479. The net benefit for 2018 will thus be \$14,580,000.
- After the first ten years, the cost of the tax credit will plateau, but the revenue boost will continue to grow. Year eleven is the first time that one graduating class stops claiming the credit, and from then on, each new class claiming the credit will be largely offset by an earlier class ending their loan repayments. However, studies show that people who spend the early years of their careers in a state tend to stay there. The new graduates that Opportunity Maine "created" will thus continue living in Maine, earning higher incomes and producing higher tax revenues.
- If the analysis includes the public spending reductions predicted by Professors Trostel and Gabe, the Opportunity Maine initiative should boost State and local tax revenues by roughly \$875,000 in 2009, growing to \$74,809,000 in 2018, while the costs of tax credits will grow from \$1,186,000 to \$55,867,000. The initiative should begin to pay for itself by 2014, and even in its most expensive year (2012), tax credit costs only exceed the State and local tax boost by \$2,140,185. The net benefit for 2018 will thus be \$18,942,000.

Reasonableness of Opportunity Maine's Goals

Opportunity Maine's goals are more than reasonable, and these initial projections are based on more conservative models than other policy analyses have used. Opportunity Maine projects that it will "create" 21,801 more degree earners in Maine over ten years.

¹ The model converts all figures to 2008 dollars, assuming average inflation. Post-2008 projections are kept in 2008 dollars.

The Maine Compact for Higher Education has proposed a similar program, along with other reforms, and estimates that together their policies would lead to 39,500 more degree holders over ten years. The goals for increased enrollment in college by diploma earners and retention in degree programs mirror the Compact's goals in those areas.

II. BACKGROUND FACTS ABOUT HIGHER EDUCATION IN MAINE

A. Number of Degree Holders

At a time when Maine needs to increase the proportion of degree holders in its workforce, the number of high school students in the population is steadily declining. According to the Maine Department of Education, 14,274 Mainers graduated from high school in 2005.² The Maine Compact for Higher Education's (MCHE) analysis of Maine Department of Education data and U.S. Census Bureau Current Population Survey (CPS) data suggests that 3,010 individuals in a given high school class earn diplomas later than their classmates, for a total of 17,284 diploma earners per age cohort.³ Maine State Planning Office projections indicate that over ten years, the number of graduates will decrease by 20 percent, due to declines in school age population.⁴

According to the MCHE's analysis of CPS data, 57% of Maine's diploma earners pursue associate's or bachelor's degrees, which would mean 9,852 of 2005's 17,284 diploma earners.⁵ That same analysis suggests that 69% of those students (6,798) will complete degree programs, with 31% (2,108) earning associate's degrees and stopping there, and 69% (4,690) earning at least a bachelor's degree.⁶ In total, then, 39% of diploma earners earn degrees, with only 27% of diploma earners earning at least a bachelor's degree. According to a study by the Finance Authority of Maine (FAME), 53.6% of degree earners leave Maine, though many return later in their careers.⁷

B. Benefits of a Degree

It is well documented that a post-secondary degree significantly increases an individual's earning potential. According to the Maine Center for Economic Policy, in Maine, the "income premium" from a bachelor's degree, measured as the difference in median income between high school diploma earners and bachelor's degree earners, was \$14,880 in 2004.⁸ If that premium grows with inflation, the 2008 bachelor's degree premium will

² Maine Department of Education, Table, available at <http://www.maine.gov/education/enroll/grads/comprate/05comprate.htm>

³ Maine Compact for Higher Education, *Greater Expectations: College as a Right and Responsibility for all Maine People* (2004), [hereinafter *Greater Expectations*], available at http://www.collegeforme.com/action_plan.pdf.

⁴ Maine State Planning Office, *Residents Educated at Public Expense by Municipality to 2017* (Dec. 2003), available at <http://www.maine.gov/spo/economics/projections>.

⁵ *Greater Expectations, supra*.

⁶ *Id.*

⁷ Finance Authority of Maine, *Maine's College Graduates: Where They Go and Why (Revisited)* (Feb. 2006), [hereinafter *Where They Go and Why*], available at http://www.famemaine.com/content/pdf/education/Where_They_Go_and_Why_2.pdf.

⁸ Maine Center for Economic Policy, *State of Working Maine 2005* (2005). The report cites an hourly wage differential of \$7.44 per hour, which yields a yearly income difference of \$14,880 over 50 weeks at

be \$16,666. Similarly, an analysis by Professors Philip A. Trostel and Todd M. Gabe, two of Maine's leading economists, puts the bachelor's degree premium in Maine at \$16,245 (or 63%) in a 2007 report.⁹

Researchers typically put the Maine associate's degree premium at about 60% of the Maine bachelor's degree premium. For example, Professors Trostel and Gabe put it at 39%, which is 62% of the bachelor's degree premium. This translates to a \$10,056 premium for 2007. Opportunity Maine's projections rely on a \$10,000 associate's degree premium for 2008, applying the 60% figure to the \$14,880 bachelor's degree premium and adjusting for inflation.

There are reasons to believe that as the proportion of degree holders in Maine's workforce increases, the bachelor's degree premium will increase. MCHE implicitly assumes as much in using national figures to measure degree premiums (2001 figures of \$17,782 for bachelor's degrees and \$8,626 for associate's degrees, translating to 2008 inflation-adjusted figures of \$21,243 and \$10,304, respectively).¹⁰ A report by FAME indicates that Maine college graduates who remain in the State after graduation are more likely to work in comparatively lower paying helping professions than their peers who leave Maine.¹¹ The trends are reversed in business and technology employment.¹² In any state, there is a comparatively fixed number of helping profession jobs that must be filled in government, education, health care, and public service. The jobs created by raising the proportion of degree holders in a workforce are thus more likely to be in higher-paying areas like business and technology. As the balance of professional jobs in Maine shifts away from the helping professions and toward private enterprise, degree premiums may come to resemble national ones more closely.

Other individual benefits include decreased likelihood of unemployment, and improved health status, though these benefits are not factored into Opportunity Maine's analysis.¹³

Professors Gabe and Trostel have also determined that each bachelor's degree earned results in \$905 less in annual public spending on unemployment, welfare, Medicaid, and incarceration.¹⁴ It is likely that similar results would obtain for associate's degrees.

C. Debt Profile of Maine Students

According to the U.S. Department of Education's Institute of Education Sciences, 60.74% of Maine students pursuing bachelor's degrees have take out student loans, at an

40 hours per week. The Maine Center's numbers are based on Economic Policy Institute analysis of U.S. Census CPS data and U.S. Bureau of Labor Statistics Current Employment Statistics data.

⁹ Trostel & Gabe, *Fiscal and Economic Benefits of College Attainment* (2007), [hereinafter *Fiscal and Economic Benefits*], available at www.opportunitymaine.org.

¹⁰ *Greater Expectations*, *supra*.

¹¹ *Where They Go and Why*, *supra*.

¹² *Id.*

¹³ Institute for Higher Education, *The Investment Payoff: A 50-State Analysis of Public and Private Benefits of Higher Education* (2005), available at <http://www.luminafoundation.org/publications/InvestmentPayoff2005.pdf>.

¹⁴ *Fiscal and Economic Benefits*, *supra*.

average level of \$3,564.¹⁵ 78.4% received financial aid of some kind.¹⁶ This latter number is almost identical to the 78% of full-time Maine Community College System students receiving some form of financial aid, suggesting that the student loan figures for bachelor's and associate's degree programs are apt to be similar.¹⁷

Nationwide, the mean debt load for Class of 2002 bachelor's degree earners was \$18,900, and the median was \$16,500.¹⁸ These numbers, like college tuition, are growing much faster than inflation.

Estimates for Maine's 2007 graduates vary.¹⁹ The National Center for Public Policy and Higher Education finds that average debt load (counting loans with a federal component) for four years full time bachelor's degree students in Maine would be \$13,196.²⁰ Some studies suggest that total of all debt principle may be higher, at \$14,256.²¹ Applying the current Stafford loan rate of 6.8% to the former number over eight years (a common term for student loans), adds 69% interest costs to the principle, for a total of \$22,301. Debt load for community colleges would tend to be half that amount, or \$11,150. By 2008, assuming growth at the rate of inflation, these numbers would be \$22,992 and \$11,496, respectively. Applying the national ratio between mean and median debt, this would suggest \$20,072 and \$10,036.

These figures are consistent with other published numbers. One study pegged Maine's average debt for its four-year college class of 2005 to be \$20,239, which would be \$22,245 in 2008 dollars if debt load increased at the rate of inflation.²² The figures calculated in the previous paragraph are also in line with published figures from Maine institutions that would tend to have lower debt loads. According to the University of Maine Foundation, "the average UMaine student graduates with more than \$18,000 in student loan debt."²³ A similar figure of \$18,500 applies to graduates of the Maine

¹⁵ U.S. Dept. of Education, Institute of Education Sciences, Integrated Postsecondary Education Data System, Tbl 38 (Average percentage receiving and average student financial aid received for full-time, first-time students in Title IV institutions, by sector and state: Fall 2003), available at <http://nces.ed.gov>.

¹⁶ *Id.*

¹⁷ Maine Community College System, <http://www.mccs.me.edu/student/affordingcollege.html>. The similarity is not surprising. In Maine, on average, a family must pay 34% of its income to pay for a member's attendance at a public four-year college, compared to 29% for attendance at a community college. National Center for Public Policy and Higher Education, *Measuring Up 2004: The State-by-State Report Card for Higher Education*, [hereinafter *Measuring Up 2004*], available at <http://measuringup.highereducation.org/docs/statereports/ME04.pdf>. The average family income of associate's degree candidates is almost certainly lower than that of bachelor's degree candidates at public institutions, with the former having less income to spare for nonessential expenditures, so it seems reasonable that the need for financial assistance for both kinds of degree programs would be similar.

¹⁸ Baum & O'Malley, *2002 National Student Loan Survey* (2003), available at http://www.nelliemae.org/library/research_10.html.

¹⁹ Sources cited in this paragraph give one-year borrowing levels for four-year students in 2003 (who are scheduled to graduate in 2007). Estimating that they will borrow the same amount in future years, while tuition is rising, likely understates debt levels.

²⁰ *Measuring Up 2004, supra.*

²¹ U.S. Dept. of Education, Institute of Education Sciences, Integrated Postsecondary Education Data System, Tbl. 38, available at <http://nces.ed.gov>.

²² The Project on Student Debt, *Student Debt and the Class of 2005: Average Debt by State, Sector, and School* (2006), available at http://www.pewtrusts.org/pdf/Student_Debt_Report_0806.pdf.

²³ *Legacies: News from the University of Maine Foundation* (May 2006).

Maritime Academy.²⁴ National figures are in a similar place, with a four-year principle of \$12,400.²⁵

III. OPPORTUNITY MAINE'S GOALS

The Opportunity Maine Initiative seeks to raise the proportion of degree holders in Maine's work force by improving Maine's numbers at each step from graduation from high school to commencement of career. These improvements will be gradual over ten years, with some happening at different rates and times than others.

First, the initiative would increase the current figure of 57% of diploma earners enrolling in degree programs to 82%. This is the same level of improvement that the MCHE determined could be achieved through its proposed reforms.²⁶ MCHE's proposals included: scholarships to cover unmet needs for low income families after all other financial aid sources are exhausted; an early college initiative to give high school students early college experiences; a college transition initiative for adults; a tax credit to cover half of student loan payments made by employers on employees' behalf; and a public education campaign to promote higher education. The sum of the MCHE's proposals does not go nearly as far as the Opportunity Maine Initiative in making college affordable, but includes numerous worthwhile programs that the Opportunity Maine Initiative does not. It seems reasonable to predict similar results, given the primacy of financial barriers in preventing pursuit of postsecondary degrees. Improvement would be slower in earlier years and faster as the ten-year horizon approached.

Second, the initiative would increase the degree completion rate from 69% to 83%.²⁷ According to the National Center for Higher Education Management Systems, Maine's six-year graduation rate for bachelor's students is 56.1%.²⁸ The highest rate among the states is in Massachusetts, with 66.9%.²⁹ It seems reasonable that if Maine had the strongest college affordability policy in the country, structured in a way that effective reduction of debt is conditioned on completion of degree programs, Maine could catch up with Massachusetts's rate of 67%. Applying this rate of improvement to Maine's overall completion rate of 69% yields 83%. There should be strong improvements in early years,

²⁴ Maine Maritime Academy, www.mainemaritime.edu.

²⁵ U.S. Dept. of Education, Institute of Education Sciences, *Student Financing of Undergraduate Education: 2003-2004, with a Special Analysis of the Net Price of Attendance and Federal Education Tax Benefits*.

²⁶ *Greater Expectations, supra*. MCHE projects an increase of direct college enrollment of graduating high school seniors from 52% to 75%, and applying that rate of improvement to the 57% of diploma earners who enter college yields an enrollment rate of 82%.

²⁷ These numbers are for four-year bachelor's degree programs. They are applied to both associate's and bachelor's degrees to simplify the model. Given the higher proportion of bachelor's degree earners and their comparatively stronger role in increasing state revenues through higher tax payments, this simplification is unlikely to distort the model. In any case, like its completion rates for bachelor's degrees, Maine's completion rates for associate's degrees are slightly above the national average but far behind national leaders, so similar rates of improvement can reasonably be projected. National Center for Higher Education Management Systems, *Three-Year Graduation Rates for Associate Students (2005)*, available at <http://www.higheredinfo.org>.

²⁸ National Center for Higher Education Management Systems, *Six-Year Graduation Rates of Bachelor's Students (2005)*, available at <http://www.higheredinfo.org>.

²⁹ *Id.*

as already-enrolled students suddenly have a strong incentive to finish their degree programs.

Third, the initiative would increase the percentage of graduates remaining in Maine after graduation from 46.4% to 75%. Possible achievements in this category are hardest to quantify. At the same time, the three leading reasons that students give for settling outside of Maine would all be addressed by the initiative. These were: better career opportunities outside Maine; found a desirable job outside of Maine; pay and benefits are better outside of Maine.³⁰ In FAME's survey study on this subject, student debt was a constant theme in unsolicited comments on why students could not stay in Maine. Given the certainty that the Opportunity Maine initiative will be able to cut student loan debt, effectively reducing the living standard gap with other states, and the high likelihood in light of existing research that it will produce more and more varied high paying jobs,³¹ the initiative goes a great distance in addressing the concerns of Maine graduates who settle elsewhere. These individuals overwhelmingly expressed a desire to live in Maine if feasible,³² so addressing their concerns makes dramatic improvements in retention likely.

In keeping with the general goal of keeping estimates of projected benefits conservative, Opportunity Maine has not set any goals for bringing individuals "from away" into Maine to attend college and settle here after graduation. From a fiscal standpoint, the benefit from these individuals is as great as that from native Mainers educated and retained. There is reason to believe that the initiative will in fact attract a number of individuals who grew up outside Maine to obtain degrees here and settle here afterwards.

IV. FISCAL PROJECTIONS

Below are fiscal projections for the Opportunity Maine Initiative, the major findings of which are described in the Executive Summary. The model holds all numbers constant in 2008 dollars, and assumes that all figures increase with inflation. Though this is a highly imperfect assumption, imperfections tend to cancel out in the model. For example, tuition costs and student debt tend to grow faster than inflation, but so does the value of the degree premium. Moreover, a major factor driving tuition increases in Maine is the failure of state higher education funding to grow with inflation. Thus, if that spending grows with other spending, there will be lower tuition increases and smaller tax credits down the road.

The analysis uses the standard Maine income multiplier of 1.65, and assumes that 13.4% of individual income is paid in state and local taxes. It increases enrollment, retention, and reduction in out-migration in accordance with the relative speeds one would expect those increases.

³⁰ *Where They Go and Why, supra.*

³¹ *Fiscal and Economic Benefits, supra.*

³² *Where They Go and Why, supra.*

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Totals
Diploma Earners	16268	15943	15624	15312	15006	14706	14412	14124	13842	13565	13294	
% Enrolling in Deg. Progs	57	57	57	57	57	57	57	57	57	57	57	
% Enrolling in Deg. Progs w/ OM	57	58.5	60	62	64	66.5	69	72	75	78.5	82	
% Completion by Enrollees	69	69	69	69	69	69	69	69	69	69	69	
% Completion by Enrollees w/ OM	69	70.5	72	74	77	79	81	82	83	83	83	
% Degree Earners Staying	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	46.4	
% Degree Earners Staying w/ OM	46.4	48	50	52.5	55.7	58.9	62.1	65.3	68.5	71.7	75	
% Dip. Earners Completing Degrees, Staying in ME	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	
% Dip. Earners Completing Degrees, Staying in ME w/ OM	18.2	19.8	21.6	24.1	27.4	30.9	34.7	38.6	42.6	46.7	51	
Proj. Ass Deg.	1952	1913	1875	1837	1801	1765	1729	1695	1661	1628	1595	19451
Proj. Ass. Deg. w/ OM	1952	2006	2059	2143	2256	2357	2458	2544	2629	2697	2761	25862
Proj. Bach. Deg.	4446	4357	4270	4185	4101	4019	3939	3860	3783	3707	3633	45313
Proj. Bach. Deg. w/ OM	4446	4569	4690	4882	5139	5369	5597	5795	5988	6142	6287	58904
Proj. Total Deg.	6398	6270	6145	6022	5902	5784	5668	5555	5444	5335	5228	63751
Proj. Total Deg. w/ OM	6398	6575	6749	7025	7395	7726	8055	8339	8617	8839	9048	84766
Proj. Total Deg., Staying in ME	2961	2902	2844	2787	2731	2676	2623	2571	2519	2469	2420	29503
Proj. Total Deg., Staying in ME w/ OM	2961	3157	3375	3690	4112	4544	5001	5452	5897	6335	6780	51304
Proj. New Deg., Staying in ME w/ OM	0	255	531	903	1381	1868	2378	2881	3378	3866	4360	21801
Portion Enrolling in Deg. Progs	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	
Portion Enrolling in Deg. Progs w/ OM	0.57	0.585	0.6	0.62	0.64	0.665	0.69	0.72	0.75	0.785	0.82	
Portion Completion by Enrollees	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	
Portion Completion by Enrollees w/ OM	0.69	0.705	0.72	0.74	0.77	0.79	0.81	0.82	0.83	0.83	0.83	
Portion Degree Earners Staying	0.464	0.464	0.464	0.464	0.464	0.464	0.464	0.464	0.464	0.464	0.464	
Portion Degree Earners Staying w/ OM	0.464	0.48	0.5	0.525	0.557	0.589	0.621	0.653	0.685	0.717	0.75	
Portion Dip. Earners Completing Degrees, Staying in ME	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	
Portion Dip. Earners Completing Degrees, Staying in ME w/ OM	0.182	0.198	0.216	0.241	0.274	0.309	0.347	0.386	0.426	0.467	0.51	
Cost per yearly cohort	0	1186274	2536380	3729741	5222322	5770971	6351370	6924149	7489308	8045577	8610736	
Cost per year	0	1186274	3722654	7452395	12674717	18445688	24797058	31721207	39210515	47256092	55866828	
Cohort Revenue Benefit Per Year Tax Revenues	0	823994	1715846	2917907	4462492	6036158	7684146	9309514	10915494	12492392	14088678	
Cohort Revenue Benefit Per Year Revenues Plus Cuts	0	875018	1822097	3098594	4738824	6409937	8159973	9885989	11591417	13265961	14961094	
Total Revenue Benefit Per Year Tax Revenues	0	823994	2539840	5457747	9920239	15956397	23640543	32950057	43865551	56357943	70446621	
Total Revenue Benefit Per Year Revenues Plus Cuts	0	875018	2697115	5795709	10534533	16944470	25104443	34990432	46581849	59847810	74808904	
Net Fiscal Impact Tax Revenues	0	362280	1182814	1994648	2754478	2489291	1156515	-1228850	-4655036	-9101851	-14579793	
Net Fiscal Impact Revenues Plus Cuts	0	311256	1025539	1656686	2140184	1501218	-307385	-3269225	-7371334	-12591718	-18942076	