

Final Report

Economic Impact of Northwestern Michigan College

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Introduction and Findings

This report provides an estimate of the total economic contribution that Northwestern Michigan College (NMC) makes on its surrounding region. Of course, the full comprehensive impact of the college on the region's social and cultural environments is much larger than its economic influence. Since its founding in 1951, the college has changed the social environment of the greater Grand Traverse region. This change has occurred informally through the presence of more young adults staying in the community to pursue their education, and formally through activities such as the Dennis Museum Center, WMC 90.7 FM, and the Rogers Observatory which have increased both the cultural offerings and cultural expectations of the region. The purpose of this report is to document the college's economic contributions to the region which, while an important measure, reflects only a portion of the college's total impact.

The report's findings are presented in three sections. First, we provide an estimate of the economic presence of Nor-74(r)-0.92.oren4-0.92.o(e15(en-15(t)M)-5)-4(r)-hde 1-2(o6s)-15(t)CiegJ -23

a two-year Associate's degree, which discounts the value of future earnings, is estimated to be between \$7.93 and \$11.14 for each dollar he/she spent on tuition and foregone income while attending school. The student's return on investment depends on whether he/she receives federal aid and attends school full or parttime. This is a conservative estimate as it does not factor in the unique, high-demand technical degrees that the college offers.

Northwestern Michigan College's economic contribution is estimated by the economic simulation model especially constructed for the communities served by the college by Regional Economic Models Incorporated (REMI). The REMI model is considered one of the best regional impact models available due to its flexibility and structure. A brief description of the model is provided in the Appendix.

NMC's impact on the region's economy is multifaceted and includes the impact of:

- x The purchases of goods and services made by the college in its ongoing operations;
- x The regional consumer expenditures made by its faculty and staff;
- x The regional consumer expenditures of its students; and
- x The growth in business activity due to its technical assistance to area businesses as well as the increased competitiveness of its businesses due to the college's technical training programs and a more educated regional employment base.

NMC's economic contribution is measured by its impact on:

- x Total year-round employment in the region, both full and part

Region 2: Grand Traverse, Antrim, Benzie, Kalkaska, Leelanau, and Wexford Counties

Region 3: Grand Traverse, Antrim, Benzie, Kalkaska, Leelanau, Wexford, Charlevoix, Emmet, Manistee, and Missaukee Counties

The presence of Northwestern Michigan College contributes \$166.9 million in total sales, \$62.6 million in personal income, and generates 1,822 jobs in the county region of Northwestern Michigan as shown in Table 1.

On average, each employee of the college (full and part and pCo>>BDC xga2galon ec5n1(s6-2h0(r)4(n16TJ 0 -4

diverse ranging from the college's purchases of long generated services to the consumer spending of its employees and students

Moreover, the consumer expenditures of University Center students are included in estimating the NMC economic presence. University Center enrollment expressed in contact hours generated, were converted to estimated student count as shown in Table 4.

Table 4 University Center Student Enrollment

Semester	Total credit hours (CH)	Undergraduate students (70% of CH at 9 CH per student)	Graduate students
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in the region, NMC's technical training programs and the NMC Training Division (part of the Michigan Manufacturing Technology Center) play a significant role in improving the competitiveness of the region's base industries—industries that sell their goods or services to customers outside the region.

The direct impact of the NMC Training Division is also shown in Table 2. In total, its activities contributed 182 jobs to the greater-county Grand Traverse region as well as \$35.2 million in total sales and a \$14.7 million increase in the region's Gross Regional Product.

In addition, Northwestern Michigan College offers courses and certificates in welding, auto tech,

Table 5 Detailed Employment Breakdown of NMCs Economic Presence

Economic Impact

To measure the economic impact of Northwestern Michigan College we must measure the difference between NMC as a comprehensive community college and a community without NMC. Grand Traverse County—with a population of nearly 90,000—is too large to not be served by a public or private higher educational institution. Therefore this analysis assumes the following assumptions:

- x A much smaller higher education entity would provide a limited, core offering to the region and receive no property tax support
- x Many of the current activities and unique training programs at NMC exist because NMC is a comprehensive community college with strategic priorities tailored to the needs and assets of the community. Specifically, this analysis assumes that the following activities exist primarily for these reasons and would, therefore, likely not exist under the hypothetical counterfactual scenario.

Hagerty Center

Great Lakes Culinary Institute

University Center

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Table 6 Economic Impact of Northwestern Michigan College

The economic impact of student expenditures is determined by estimating the percentage of students who would either leave the area to attend college elsewhere, or not attend college because of the absence of a more comprehensive and potentially more affordable option. The hypothetical institution's course offering would be limited; however

region's Gross Regional Product is \$33.0 million larger. In other words this is the regional economic impact that is supported by \$9.1 million in property taxes paid to NMC.

Finally, Table 7 provides a detailed breakdown of the college's employment impact on the region's industrial sectors.

Table 7 Detailed Employment Breakdown of Northwestern Michigan College's Economic Impact

Impact on Potential Graduate Earnings

If young adults decide not to further their academic careers because of the absence of Northwestern Michigan College, it would significantly lower their lifetime earning potential. In the following figures we show the 2012 average annual earnings and unemployment rates for working age adults living in Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska, Leelanau, Missaukee and Wexford counties⁵ As can be seen in Figure 1, the average annual income of individuals with an associate's degree is 30 percent higher than that of a person who holds only a high school diploma. Moreover, as seen in Figure 2, Associate degree holders also face lower unemployment rates than persons with only a high school diploma.

⁵ The geographic limitation of the IPUMS database, which provides a five percent sample of individual

Figure 1 Average Annual Income by Educational Attainment

SOURCE Ruggles et al, IPUMS USA 2012.

Figure 2 Unemployment Rate by Educational Attainment

SOURCE Ruggles et al, IPUMS USA 2012.

It should be noted that

There is much debate on this topic: too low of a discount rate will overvalue long-term returns, while the opposite is true if the discount rate is set too high.

As shown in Table 8, we provide three separate estimates for the return on investment for students completing their Associate degree at NMC. These three scenarios are as follows:

Appendix

Description of the REMI Model

The W.E. Upjohn Institute maintains an economic computer model specially designed to estimate the economic impact of changes in the greater Grand Traverse Region. This model was constructed by Regional Economic Models Incorporated (REMI) and contains three separate components that together capture the resulting total impact to the local economy due to a change in employment. These components are:

- x An input-output model that estimates the impact of changes in industry purchases on the local economy. This component of the model captures the impact of an increase in orders to local suppliers of goods and services, as well as the impact of households increasing their purchases of consumer goods and services.
- x A relative wage component that estimates the impact of the expected changes in the area's cost structure due to changes in economic activity. For instance, when a major employer moves into the area, it can cause wages to increase across almost all industries due to the increased demand for workers and other local resources. This boost in wages while generating additional consumption expenditures, increases the cost of doing business in the area, making the area slightly less attractive to other industries. On the other hand, an increase in the number of skilled workers enhances the area's productivity, and thereby lowers the cost per unit of production, making the region more competitive.
- x A forecasting and demographic component that forecasts the resulting changes in future employment and population levels due to a change in economic activity. This model generates an annual forecast which averages seasonal jobs by their duration. For example, four summer jobs that have durations of three months each are modeled as only one year.