

THE ECONOMIC OPPORTUNITY IMPACT OF THE UNIVERSITY OF MICHIGAN-DEARBORN



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A university education provides a number of benefits to the students who study there and the society of which they are a part. One of the ways a university contributes is by providing an environment where students can enhance their future career prospects and economic well-being. The University of Michigan-Dearborn's 50,000th graduate completed her studies in December 2015. These 50,000 degrees represent people working – mostly in the state of Michigan – in better careers and with higher incomes than they would have been able to achieve without their Dearborn education. This study uses information on the alumni of the University of Michigan-Dearborn to quantify this aspect of the value of the university to its alumni and to the people of Michigan.

Many economic impact reports for an event or for an institution center on the spending associated with that event. For example, Super Bowl XL, held in Detroit, brought many people to the city who spent considerable amounts of money while in town. This money represented income to the people providing the goods and services to the football fans. Considering both the direct impact of these visitors (e.g. the money spent in hotels and restaurants) and the indirect impact of these visitors (e.g. the hotel and restaurant staff spending the extra income they earned), a study concluded² that the economic impact of the Super Bowl was \$274 million. Similarly, studies of the economic impact of airports have shown that spending by the people they bring to town creates economic impact of billions of dollars.

Economic impact studies have also been done³ measuring the importance of university associated expenditures to local economies. Having a university in town supports a large amount of economic activity and employment through tuition dollars, state aid, and research grants brought into the community. However, the present study takes a different approach. The long-term economic benefits students are working towards arise not from the money they spend while they are on campus, but from the added economic opportunities that their work on campus will generate throughout their working lives.

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² See http://usatoday30.usatoday.com/money/2006-03-16-sb-detroit_x.htm for a description of the study. A study written before the Super Bowl and predicting the economic impact is at www.andersoneconomicgroup.com/Portals/0/upload/SuperBowlImpact_WP.pdf

³ See for example *The Economic Impact of Michigan's Fifteen Public Universities* at <http://www.masu.org/policyreports/otherreportsstudies/>

The study finds that the economic opportunity impact of the University of Michigan-Dearborn is that each year its alumni earn \$1.8 billion more than they would have without the education they worked for at the university. This number, which is far greater than the roughly \$150 million the university spends each year, is a strong demonstration of the real long-term economic importance of the education the University of Michigan-Dearborn provides.

This added income results in about \$128 million more in taxes paid to state and local governments by alumni who live in Michigan. Since state aid to the campus is \$24 million, the University of Michigan-Dearborn is contributing a substantial net amount to the government budgets of the state.

DETAILS OF THE STUDY

The estimates of the overall economic opportunity impact students create through their work at the University of Michigan-Dearborn was done by conducting a survey of alumni and scaling that effect up to the total number of degrees awarded by UM-Dearborn. The study is particularly interested in the working age population, taken to be those who graduated in the last 40 years (academic years 1975-2014). The University of Michigan-Dearborn awarded 37,911 undergraduate degrees and 10,808 graduate degrees⁴ during this period.

An online survey was conducted in late 2014. The survey was sent to the latest known email addresses of all University of Michigan-Dearborn alumni as provided by the Alumni Relations Office. 20,000 surveys were sent out of which 1,272 completed the survey. Alumni were offered the chance to win a gift card as an incentive to participate.

In terms of calculating the overall economic opportunities represented by UM-Dearborn degrees, the most important is the income the alumni are earning. Because the present study wishes to evaluate the incremental earnings due to the alumni studying at Dearborn, it is useful to isolate two groups of people who earned their last degree at UM-Dearborn. First, those who earned their bachelor’s degree at the university and did not earn a degree elsewhere. This segment of undergraduate alumni is analytically useful since it helps isolate the earnings power of a UM-Dearborn

undergraduate degree. Students who earned a bachelor’s at Dearborn and then went on to earn a medical degree somewhere else will of course have higher earnings that are not entirely attributable to their undergraduate degree. For

purposes of the study, those who earned “More Than \$150,000” from working are considered to have labor income of \$175,000, and income in other brackets is presumed to be uniformly distributed across the range shown. As is shown in the adjacent table, slightly more than half of working undergraduate alumni report earnings from working of \$75,000 and above, and the estimated average income from working is approximately \$81,000 (median of \$81,101)



*Figure 1: Earnings from working of alumni without graduate degrees
(% of surveyed alumni in each income range)*

⁴ Note that this is a count of degrees, not alumni. Some alumni have more than one degree from the university.

The second group we look at are the group of alumni whose last degree was a graduate degree⁵ from the University of Michigan-Dearborn. Since these people benefit from both an undergraduate degree (perhaps from UM-Dearborn) and a graduate education they would be expected to have a higher



Figure 2: Earnings from working of graduate alumni whose last degree is from UM-Dearborn (% of surveyed alumni in each income range)

income from working, and indeed this is the case. As can be seen in the adjacent figure, slightly more than half of those whose last degree was a *graduate* degree from UM-Dearborn report earning incomes of over \$100,000. Again presuming those reporting “more than \$150,000” have average earnings of \$175,000 the average reported earnings are \$107,800 with a median of \$105,600.

The value added of a university degree is the difference between what someone would earn with the degree and what she would have earned without the degree. Of course, we can never know this counterfactual amount with uncertainty, particularly for those in mid-career or later who earned their degree long ago and whose careers have taken many twists and turns along the way. However, the U.S. Department of Labor does publish median incomes for those working full time (and aged above 25) having various levels of educational attainment. Full-time workers with a high-school diploma typically had \$668 in weekly earnings, those with an associate’s degree had \$792 in weekly earnings, and full-time workers with a bachelor’s degree earned \$1,101 per week. These numbers can be used as estimates of the economic impact of the University of Michigan-Dearborn degree earned. For example, given that those with a bachelor’s degree nationwide typically earned \$57,252 per year (\$1,101 times 52), and those whose last degree is a master’s degree from the university earn \$105,600, the Dearborn degree can be estimated to provide slightly over \$48,000 in added value.

Undergraduate degrees are somewhat more difficult to determine, since the university has a large number of transfer students at the undergraduate level and so some of their earnings power is due to the courses they took before joining the university (often at a community

⁵ The University of Michigan-Dearborn now awards doctoral degrees, but these did not play an important role in our current analysis. Doctoral degrees are few in number in our sample and those who have earned them did so very recently, so it is not yet possible to estimate the value over the course of a career in holding a *doctoral* degree from the university.

college). To account for community college work, this study presumes that half of the undergraduate alumni at the university brought in an associate's degree and half brought in only a high school diploma. Averaging the national median incomes of a high-school diploma holder and an associate's degree holder annualizes to \$37,960 in income. Comparing this to the reported earnings for Dearborn degree holders of \$81,101 (for those who earned no degrees after a UM-D bachelor's) provides an estimate⁶ that the value of the Dearborn bachelor's degree is slightly above \$43,140.

In each case, this study uses the estimated value of \$43,140 and \$48,340 for undergraduate and graduate degrees even if a student subsequently earned a degree elsewhere. For example, consider someone who earned a bachelor's from Dearborn and a MD from another university and is currently earning \$230,000. Based on the data from this doctor's fellow alumni who earned a bachelor's degree from UM-Dearborn and no further degree, this study would count \$43,140 of this doctor's income as arising from the bachelor's degree.

The University of Michigan-Dearborn awarded 37,911 bachelor's degrees and 10,808 graduate degrees over the 1975-2014 academic years, which this study takes as the pool of workers in our sample. A few people earned multiple degrees, however, and based on information provided by the university we estimate that approximately 10,700 people earned graduate degrees and approximately 36,963 people earned undergraduate degrees⁷ during this period.

Of course, in any given year, not all alumni will be working – whether due to inability to find a job or an individual choice not to look for a job. However, national data suggest that a high fraction of working-age college graduates will indeed be employed, and our survey data bear this out for alumni of the University of Michigan-Dearborn. Our survey showed that about 90% of undergraduate alumni and 89% of graduate alumni are employed. Again, the other 10-11% are not all “unemployed” in the sense that they want to work and are unable to find work. Most of these people are likely choosing not to work, for example to care for a young family. The 89-90% who are working mean that in order to estimate the overall economic impact of the university educations in any given year we must scale down the total number of alumni by multiplying by either 0.89 or 0.90.

Combining these gives us the chance to see the overall economic impact (in terms of annual incomes) of the degrees students have earned at the University of Michigan-Dearborn. In each case the number consists of multiplying the number of people having the degree times the percentage working, and multiplying that by the earnings differential from having that degree. This gives the estimated totals shown on the next table:

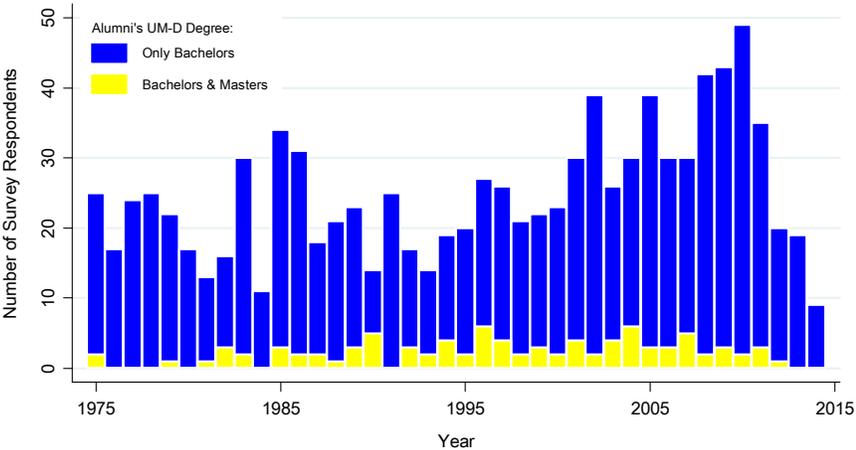
⁶ Note that we are comparing medians rather than means for data availability reasons.

⁷ Note that this step eliminates the double-counting only of people who earned multiple undergraduate degrees from the university *OR* who earned multiple graduate degrees from the university. The more common case of those who earned one undergraduate and one graduate degree from the university will be dealt with later.

Type of Degree	Economic Impact
Undergraduate Degrees	\$1.435 billion in extra annual incomes
Graduate Degrees	\$460 million in extra annual incomes

Before adding these to calculate the university's economic opportunity impact, however, an adjustment for double-counting is required for those who earned an undergraduate *and* a graduate degree, both from the University of Michigan-Dearborn. As the adjacent figure shows, it is a reasonably common phenomenon for students who benefited from an undergraduate Dearborn degree to choose to return for a graduate degree. The calculation issue arises in the methodology of this study because surveyed University of Michigan-Dearborn alumni earn more than the typical bachelor's degree holder nationwide, and can perhaps can be best seen by an example.

Survey Respondents with UM-Dearborn Bachelor's Degrees
Number of respondents by year Bachelor's Degree awarded



Tabulations from 2014 Alumni Survey
Respondents report UM-Dearborn Bachelor's or Master's degree awarded after 1974
Year is year received UM-Dearborn Bachelor's degree
Alumni who report UM-Dearborn doctorates or implausible age/degree data combinations are excluded

Figure 3: UM-Dearborn undergraduates who pursue UM-Dearborn graduate degrees

Consider an alumnus who has a master's degree from Dearborn and is earning \$100,000. The study estimates the value of the graduate degree as the difference between what a typical UM-Dearborn graduate alumnus earns and what the national median is for bachelor's degree holders (\$57,252). For this student, that appears to be \$42,748. However, if this alumnus also has a bachelor's degree from Dearborn, then this study shows the earnings would likely have been about \$81,000 without any graduate education, in which case the actual increased income from graduate income was more like \$19,000 rather than \$42,748.

To correct for this, we apply a double-counting adjustment which involves subtracting approximately \$23,850 (the difference between the \$81,000 Dearborn undergraduate alumni earn and the \$57,252 national equivalent) for each student who has **both** an undergraduate and a graduate degree from the University of Michigan-Dearborn. This is shown on the table on the following page.

Type of Degree	Economic Impact
Undergraduate Degrees	\$1.435 billion in extra annual incomes
Graduate Degrees	\$460 million in extra annual incomes
Double-Counting Adjustment	\$79 million
Total Economic Impact	\$1.816 billion in extra annual incomes

As the above table shows, University of Michigan-Dearborn degrees are associated with \$1.816 billion in extra annual incomes each year. A bit more precisely, this number means that in 2014, we estimate that the entire alumni body of the university earned \$1.816 billion more than they would have had they not earned the degree they earned at the University of Michigan-Dearborn. To a large extent, of course, this is a demonstration of the economic power of a university education in general and the economic importance of having it be widely available.

Our survey shows that 75% of alumni live in the State of Michigan. Having a large number of economically successful alumni remain in the State of Michigan is good news for state and local government budgets in Michigan. The Tax Foundation⁸ estimates that state and local taxes in the state of Michigan are 9.4% of income (as of 2012). Based on this, the additional incomes earned by University of Michigan-Dearborn alumni mean Michigan alumni living in Michigan are paying additional \$128 million in state and local taxes⁹, as opposed to the revenues that would be raised if those people had incomes associated with their pre-Dearborn education levels. This number is five times more than the \$24 million in state aid provided to the University of Michigan-Dearborn’s general fund. In other words, due to its role in expanding economic opportunity, the University of Michigan-Dearborn is having a considerable *positive* net effect on the fiscal picture of Michigan government.

This study has not incorporated any externality effect of the alumni earnings. For example, people having high incomes and good educations in the community may be profitable customers for local businesses or have valuable skills that they contribute on a volunteer basis to the community. Any effects such as these would increase the economic impacts reported in this study.

It is appropriate to end this section with a note of caution. As referenced earlier, a study of this nature is necessarily inexact, with a number of variables potentially influencing the results. For example, this study is primarily based on a survey of alumni of the university. The study therefore relies on the participants providing accurate information. We have promised confidentiality as a way to encourage this. There is also the possibility of response bias – if those who replied to our survey are not a representative sample of alumni, the results will be affected.

⁸ Their studies for a variety of years and states can be found at <http://taxfoundation.org/article/state-and-local-tax-burdens-1977-2012>

⁹ Note that this is \$128 million in state and local taxes paid by alumni who are residents of Michigan. Some of this money will be paid to governments of other states, for example when alumni travel. Similarly, some alumni who live in Toledo, Ohio will make purchases across the border in Michigan.

COLLEGE OF BUSINESS ALUMNI

The University of Michigan-Dearborn has four colleges – the College of Arts, Sciences, and Letters (CASL); the College of Engineering and Computer Sciences (CECS); the College of Education, Health, and Human Services (CEHHS); and the College of Business (COB).

Most undergraduate alumni of the College of Business have earned the Bachelor of Business Administration degree, although other undergraduate degrees have been offered over the history of the

college. Our survey shows that these alumni have been highly successful. The adjacent figure represents COB survey respondents whose last degree was a bachelor's degree from the College of Business. The percentage of alumni with income in each bracket is shown.

Presuming again that the 23% who report income greater than \$150,000 have average income of \$175,000, the average income of someone whose only degree is an undergraduate degree from the College of Business is about \$100,400 with a median of \$89,400.



Figure 4: Incomes of COB alumni without graduate degrees
(% of surveyed alumni in each income range)

The College of Business also offers a number of degrees at the master’s level, including the Master of Business Administration degrees and a number of Master of Science programs.

Again, our survey shows that these alumni are very successful. The smaller sample size means that the estimates are less precise than for the overall university totals, but the estimated average income from working for those whose last degree is a Master’s degree from the College of Business is about \$120,200 with a median of \$125,900



Figure 5: Incomes of alumni whose last degree is a Master's degree from the COB (% of surveyed alumni in each income range)

The College of Business has approximately 7,800 undergraduate and 2,600 graduate alumni from the 1975-2014 window. With the reminder that the smaller sample size makes all estimates less precise and the double-counting adjustment becomes more difficult when the view is restricted to one part of campus, it is again possible to calculate the economic opportunities that College of Business alumni are able to generate based on the work they started at the University of Michigan-Dearborn. As the table below shows, the total added income associated with their education is \$498 million per year.

Type of Degree	Economic Impact
Undergraduate Degrees	\$363 million in extra annual incomes
Graduate Degrees	\$158 million in extra annual incomes
Double-Counting Adjustment	\$23 million
Total Economic Impact	\$498 million in extra annual incomes

OTHER SURVEY RESULTS

The primary purpose of the survey was to discover the economic opportunities alumni of the University of Michigan-Dearborn have enjoyed based in part on the work they have done at the university. However, as the appendix shows, a number of other questions were included in the survey which can add to the understanding of the UM-Dearborn community. Some of the results are included here. Note that this section includes alumni from all years whereas the previous results were for alumni from the last 40 years only.

Dearborn’s alumni include a large portion of first-generation graduates. In our survey, 62% of respondents indicated that neither of their parents had a bachelor’s degree. For these people, the university is a powerful tool providing a gateway to educational and career opportunities for generations to come.

Alumni also work in every sector: the for-profit private sector (62%), the not-for-profit private sector (14%), and government work (24%).

Many of our undergraduate alumni pursue graduate studies or plan to, and they feel the university has prepared them well for this work. On a 7-point Likert scale, 88% agreed that they were well prepared.

Strongly Disagree	Q17: Has your UM-Dearborn degree prepared you well to continue your university studies?					Strongly Agree
1	2	3	4	5	6	7
2%	3%	2%	6%	10%	28%	50%

Similarly, our students felt well-prepared for their career as a result of their studies at Dearborn. 60% of them had a job upon graduation and a total of 84% had a job within one year of graduating. At some point in their careers, 24% have started a business or been self-employed. Currently, based on our sample, 78% are employed, an additional 7% are self-employed, with 13% retired or not looking for work and only 2% unemployed (in the standard sense of looking for paid work but not currently employed).

The survey also asked questions as to whether the alumni were employed in positions that reflect their education. A question about whether their current job¹⁰ is one which generally involves college-educated workers shows that a large majority of alumni are employed in positions that presume this educational background.

Strongly Disagree	Q27: Most people in my current or most recent job have a college degree					Strongly Agree
1	2	3	4	5	6	7
3%	2%	2%	3%	5%	10%	74%

¹⁰ These questions asked about “current or most recent” job to cover cases such as retirees.

Another question asked whether their work is related to the subject material they studied at Dearborn. While there is more variation here – many of the abilities developed at a university are applicable in a number of fields – over two-thirds of alumni report a match between their field studied at Dearborn and their current line of work.

Strongly Disagree	Q28: My current or most recent job is in a field closely related to my UM-Dearborn degree					Strongly Agree
1	2	3	4	5	6	7
7%	7%	6%	10%	12%	15%	44%

Given that the study has shown that University of Michigan-Dearborn alumni have economically successful careers that reflect both the level and field of their studies, it is perhaps not surprising that they consider that their work at Dearborn has prepared them well for the subsequent career. A survey question asking this directly shows this to be the case: 83% of students feel their degree has prepared them for their career.

Strongly Disagree	Q29: My UM-Dearborn degree has prepared me for my career.					Strongly Agree
1	2	3	4	5	6	7
3%	3%	4%	8%	15%	24%	44%

Appendix: Survey Instrument

Note that only the appropriate questions were asked, based on replies to previous answers. In most cases, a list of choices were presented to the participant.

- 1) What is your gender?
- 2) What is your race/ethnicity?
- 3) You have which degree(s) from UM-Dearborn? (check all that apply)
 - a. Bachelor's
 - b. Master's
 - c. Doctorate
- 4) Which of these best represents the area(s) in which you received your undergraduate degree (select all that apply)
- 5) What year did you receive your undergraduate degree?
- 6) Which of these best represents the area in which you received your graduate degree?
- 7) What year did you receive your graduate degree?
- 8) Which of these best represents the area in which you received your doctorate degree?
- 9) What year did you receive your doctorate degree?
- 10) Do you live in the United States?
- 11) Please enter the zip code of your home residence.
- 12) Please enter the country you live in.
- 13) Did either of your parents/guardians earn a bachelor's degree?
- 14) What year were you born?
- 15) Have you earned any additional degrees from a university or college since you left UM-Dearborn?
- 16) Are you currently studying for a degree at a degree-granting university or college?
- 17) Has your UM-Dearborn degree prepared you well to continue your university studies?
- 18) What additional degree have you earned or are you working for?
- 19) Are you currently employed in paid work?
- 20) How long did it take you to find a job after leaving UM-Dearborn?
- 21) How many hours per week do you usually work on average?
- 22) Which of the following best describes the industry of your current or most recent employer (or if self-employed, your own business)?
- 23) Which of the following best describes your role in your current or most recent job?
- 24) Which of the following describes your current or most recent employer?
 - a. Private sector for-profit
 - b. Government
 - c. Not-for-profit
- 25) Have you ever started your own business or been self-employed?
- 26) Approximately how many full-time positions does your company have?
- 27) Most people in my current or most recent job have a college degree.
- 28) My current or most recent position is in a field closely related to my UM-Dearborn degree.
- 29) My UM-Dearborn degree has prepared me for my career

- 30) What is your current annual income from working before taxes (include wages, commissions, bonuses, etc.)?
- 31) How did your UM-Dearborn degree prepare you for your future?