



Minnesota Tuition Reciprocity: 2018 Annual Report

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About the Minnesota Office of Higher Education

The Minnesota Office of Higher Education is a cabinet-level state agency providing students with financial aid programs and information to help them gain access to postsecondary education. The agency also serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

The Minnesota State Grant Program is the largest financial aid program administered by the Office of Higher Education, awarding up to \$180 million in need-based grants to Minnesota residents attending accredited institutions in Minnesota. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Plan, licensing and early college awareness programs for youth.

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Introduction

Minnesota's tuition reciprocity agreements, most of which have been in operation for over 40 years, establish a common market for postsecondary education that promotes student choice. Specifically, the agreements aim to expand education opportunities for Minnesota residents by allowing Minnesota residents (and residents of participating states) to be treated as a resident for the purposes of admission and tuition, thereby allowing students to attend the institution that best matches and fits their educational needs.

Researchers find positive effects on the likelihood of enrollment, graduation, and workforce outcomes, as a result of students choosing a best-match, best-fit institution.^{1,2} Economists Cohodes and Goodman (2013) explored the impact of a scholarship program in Massachusetts that incentivized low-income students to attend less-selective state schools rather than more selective institutions. The authors found that participating in the incentive reduced the students' likelihood of graduating on time by 40 percent.³ Studies have also shown that improving a student's college match is associated with a 20 percent increase in their wages following their postsecondary education (Hoekstra, 2009, November).⁴ Minnesota's tuition reciprocity agreements play an important role in providing Minnesota residents with more postsecondary opportunities, some of which may be perceived by students and their families as being of equivalent quality and at a lower cost.

In order to fulfill the requirements of *Minnesota Statutes 136A.08, Subd. 7*, the Minnesota Office of Higher Education (OHE) prepares an annual report on the tuition reciprocity programs for the Minnesota Legislature that presents data on:

- Participation
- Interstate payments
- Tuition rates
- Reciprocity graduates from Minnesota public institutions

The body of this report describes: the statutory basis for reciprocity agreements; reciprocity agreements' geneses; student participation; Minnesota's interstate payment calculations; and student outcomes.

¹ Kurlaender, M. & Grodsky, E. (2013). Mismatch and the paternalistic justification for selective college admissions. *Sociology of Education*. 86: 294-310.

² Pender, M., Smith, J., Hurwitz, M., & Howell, J. (2012, October). College choice: Informing students' trade-offs between institutional price and college completion. The College Board. Policy Brief.

³ Cohodes, S. & Goodman, J. (2013, March). Merit Aid, College Quality and College Completion: Massachusetts' Adams Scholarship as an in-Kind subsidy," Harvard Kennedy School working paper.

⁴ Hoekstra, M. (2009, November). The effect of attending the flagship state university on earnings: A discontinuity-based approach. The Review of Economic and Statistics. Retrieved from: <http://econweb.tamu.edu/mhoekstra/flagship.pdf>.

Statutory Authority

Minnesota Statutes 136A.08 Subd. 2 states that the purpose of tuition reciprocity is for “. . . the mutual improvement of educational advantages for residents of this state and other states or provinces with whom agreements are made.”

The mutual improvement of educational advantages for Minnesota residents and other states or provinces has been administratively operationalized as removing non-resident admission and tuition barriers at participating public institutions.⁵ Under the agreements, when applying for admission to an eligible public postsecondary institution, a Minnesota resident is to be considered like a Wisconsin, North Dakota, South Dakota or Manitoba resident for admission and tuition purposes.⁶ Similarly, residents of reciprocity states are treated as residents of Minnesota when applying for admission to eligible Minnesota public postsecondary education institutions.⁷

Minnesota Statutes 136A.08 Subd.2 authorizes OHE to enter into tuition reciprocity agreements in consultation with the Commissioner of Minnesota Management and Budget (MMB) and each affected Minnesota public postsecondary governing board. Tuition reciprocity agreements are not valid until approved by the University of Minnesota (UMN) Board of Regents and the Minnesota State Colleges and Universities’ (Minnesota State) Board of Trustees as provided for in *Minnesota Statutes 136A.08, Subd. 6*. The agreements are ongoing and reviewed annually by OHE, and can exist as long as the participating states deem them to be beneficial.

OHE staff administer Minnesota’s tuition reciprocity agreements in consultation with UMN and Minnesota State staff, the Minnesota Governor’s Office, and the Minnesota Legislature. In addition, OHE works with comparable agencies in states and jurisdictions that have a tuition reciprocity agreement with Minnesota. Details regarding reciprocity tuition rates and program operations are contained in annual administrative memoranda. Annual administrative memoranda documents are signed by the executive directors of the higher education boards or agencies in each state before the start of the academic year and disseminated to public postsecondary education campuses.

⁵ For example, under tuition reciprocity Minnesota resident undergraduates enrolling at UW-Madison are charged \$7,030 for 15 credits in the fall of 2017 compared to \$17,391 for non-residents (<https://registrar.wisc.edu/tuition & fees.htm>).

⁶ Minnesota’s tuition reciprocity agreements include public postsecondary education institutions in participating states. Typically, all undergraduate and graduate programs of study are available to reciprocity students; however, professional programs may or may not be included in the agreements. Minnesota’s agreement with Wisconsin does not include Wisconsin technical colleges, because Wisconsin’s technical colleges are operated at the local rather than the state level. Minnesota residents can apply directly to Wisconsin technical colleges, and if admitted, pay the Wisconsin technical college Wisconsin resident tuition rate.

⁷ Removal of nonresident admission and tuition barriers, along with interstate payments, differentiates Minnesota’s state-wide tuition reciprocity agreements from student exchange programs, such as the Midwest Higher Education Compact’s Student Exchange Program. The Midwest Higher Education Compact’s Student Exchange Program sells excess capacity in a limited number of programs and public institutions at a discounted price, which is typically higher than the reciprocity rate.

History

Minnesota signed its first reciprocity agreement with Wisconsin in 1969. The initial agreement limited the number of students and the number of public institutions participating from each state. Recognizing the value of the program, Minnesota and Wisconsin expanded the program every year until 1973. In 1973, following a Minnesota and Wisconsin Governors' initiative to establish a 'common market' for college education, the two states signed an unrestricted statewide tuition reciprocity agreement.⁸ The impetuses behind the expanded reciprocity agreement were to:

- expand postsecondary education opportunities for state residents, and
- avoid postsecondary institution and program duplication.⁹

Over the next decade, Minnesota entered reciprocity agreements with North Dakota, South Dakota, and a limited agreement with select institutions in Iowa (Table 1).¹⁰

Table 1: Minnesota Reciprocity Agreements by Date of Inception

Reciprocity State	Date of Inception
Wisconsin	1969
North Dakota	1975
South Dakota	1978
Iowa	1979
Manitoba	1989

Periodically, OHE has asked the Iowa Board of Regents to consider expanding tuition reciprocity to include all public institutions in Minnesota and Iowa, although the Office of Higher Education has not done so in recent years. To date, the Iowa Board of Regents has not been interested in establishing state-wide tuition reciprocity with Minnesota.¹¹ Minnesota's reciprocity agreement with the Canadian province of Manitoba in 1989 represents the last major expansion of the program.¹²

⁸ See Associate Press, *Common Market, New Plan Eliminates Out-Of-State Tuition Fees*, September 14, 1973.

(<http://news.google.com/newspapers?nid=1346&dat=19730914&id=xIROAAAIBAJ&sjid=cfoDAAAIBAJ&pg=7067,3779501>)

⁹ Specifically, the agreement allowed Wisconsin to secure seats for their residents in Minnesota's School of Veterinary Medicine.

¹⁰ The state of Minnesota has had a limited reciprocity agreement between Iowa Lakes Community College and Minnesota West Community and Technical College since 1979. Reciprocity students attending the participating institutions pay the resident tuition rate at the institution attended.

¹¹ For further information see: Erin Jordan and Lisa Ross: *Colleges look to 'steal' students from outside to further growth*, Des Moines Register, September 7, 2006, Frank Santiago: *Out-of-state colleges lure few*, Des Moines Register, February 8, 2001, and *In-state tuition, out of state*, Chicago Tribune, November 19, 2007.

¹² In addition to signing reciprocity agreements, Minnesota has also participated in interstate contracting, which allows states to purchase/reserve seats in specific programs at an institution in a participating state for their residents. Historically, these contractual relationships have been limited to professional schools that have limited capacity. For example, the University of Minnesota allowed Wisconsin residents to reserve seats in the College of Veterinary Medicine until Wisconsin established its own Veterinary Medical program (see: Minnesota Higher Education Coordinating Board. (1985, April 12). The contractual arrangements allowed states to cooperatively provide educational services without incurring the costs associated with developing the program infrastructure needed to offer the same program within their own state's borders.

Participation

Overview

In a traditional postsecondary market, students may be disincetivized, or even deterred, from enrolling in an out-of-state institution due to non-resident tuition costs - which can approach two hundred percent of the resident tuition rate.^{13,14} While non-resident tuition revenue remains important for institutional budgets, it may limit postsecondary options for lower- and middle-income and traditionally underserved students, including the institutions located closest to students, which they may otherwise consider.

Reciprocity agreements establish a new “common market,” expanding affordable postsecondary options for Minnesota residents and residents of participating states. Additionally, they allow states to leverage participating states’ postsecondary infrastructure and programs, enhancing postsecondary regional efficiencies.¹⁵ Specifically, participating states under the agreements treat out-of-state students as residents for purposes of tuition and admission – promoting student choice by making out-of-state institutions more affordable for Minnesota students and their families.

In practice, however, although all of Minnesota’s reciprocity agreements utilize the resident tuition rate as a baseline, the agreements vary in their tuition setting approaches/frameworks - creating differing incentives/disincentives that may differentially impact states’ student participation (Table 2). The differences in tuition setting approaches highlight the challenge of balancing tensions between what’s best for students, states, and institutions. These tensions, and whether the policies should be aligned, are discussed in the tuition setting approach section. Despite these differences, the common market created by Minnesota’s reciprocity agreements provides Minnesota students and families with increased affordable postsecondary options compared to a traditional postsecondary market at a time when published tuition and fees continue to increase at a rate faster than median family income.¹⁶

Table 2: Tuition Rate Setting Approaches Currently Utilized

1. Resident tuition at the institution attended (with or without a surcharge)	2. The higher of the two-states' resident tuition rates at a comparable institution	3. Resident tuition at comparable institution in the student's state of residence
Minnesota residents attending North Dakota institutions, and participating institutions in Manitoba and Iowa	South Dakota and Wisconsin agreements, and North Dakota residents attending a Minnesota institutions	Not currently used

¹³ Minnesota institution’s 2017-18 resident and non-resident tuition rates can be found here: <http://www.ohe.state.mn.us/sPages/TuitionChart.cfm?SchState=MN&pageID=651>

¹⁴ Some Minnesota State Universities do not charge a non-resident rate that differs from their resident rate.

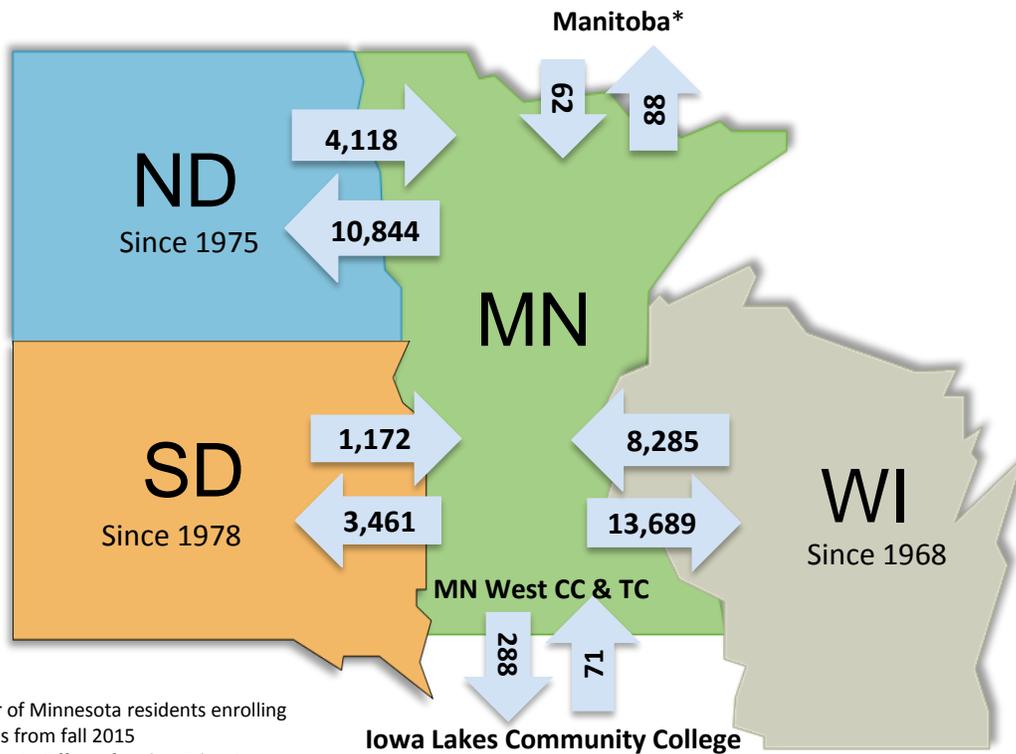
¹⁵ The enrollment of North Dakota students at Minnesota State Community Technical College and Northland Community and Technical College may be an example of a regional efficiency (see Figure 5).

¹⁶ Ma, J., Baum, S., Pender, M., & Bell, D. W. (2015). Trends in College Pricing, 2015. Trends in Higher Education Series. *College Board*. <https://files.eric.ed.gov/fulltext/ED572540.pdf>

Student Flow

Figure 1 shows reciprocity enrollments by participating states.¹⁷ In fall 2016, a total of 42,078 students participated in tuition reciprocity (93% were undergraduate students).¹⁸ Of the participating students, 28,370 (67%) were Minnesota residents enrolled in reciprocity institutions in participating states, while 13,925 were residents of participating states enrolled in Minnesota public postsecondary institutions. Minnesota’s reciprocity agreements with Wisconsin and North Dakota represent the bulk of all reciprocity enrollments (88%). Minnesota’s agreement with South Dakota composes an additional 11 percent of the total participation, while Minnesota’s agreements with Iowa and Manitoba enroll relatively few students each year.¹⁹

Figure 1: Reciprocity Participation by State, Fall 2016 Enrollment



Historically, Minnesota residents participated in reciprocity in greater numbers than residents of participating states, largely because Minnesota’s population dwarfs that of most of its participating neighbors (Wisconsin being the exception, see Figure 13 in Appendix A); however, the participation gap has widened over the past 7 years.²⁰ Since 2010, participation of Minnesota residents under the reciprocity agreements with Wisconsin, North Dakota, and South Dakota (Minnesota’s three largest agreements in terms of student flow) remained

¹⁷ See Table 7 in Appendix B for historical fall enrollment data.

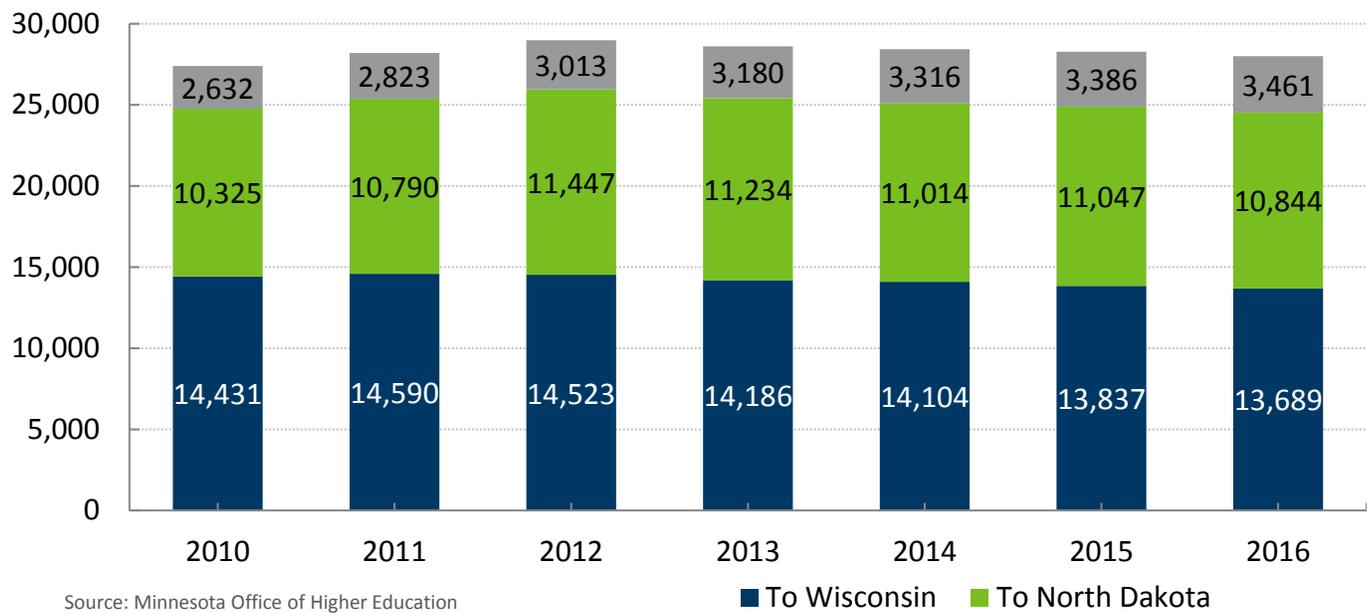
¹⁸ The number of Minnesota residents enrolling in Manitoba is from fall 2015. At the time of the report’s release, Minnesota had not yet received Manitoba’s fall 2016 enrollment numbers.

¹⁹ As previously stated, the agreement with Iowa allows Iowa residents to attend Minnesota West Community & Technical College and Minnesota residents to attend Iowa Lakes Community College.

²⁰ Data from the mid-1980s show the same trends.

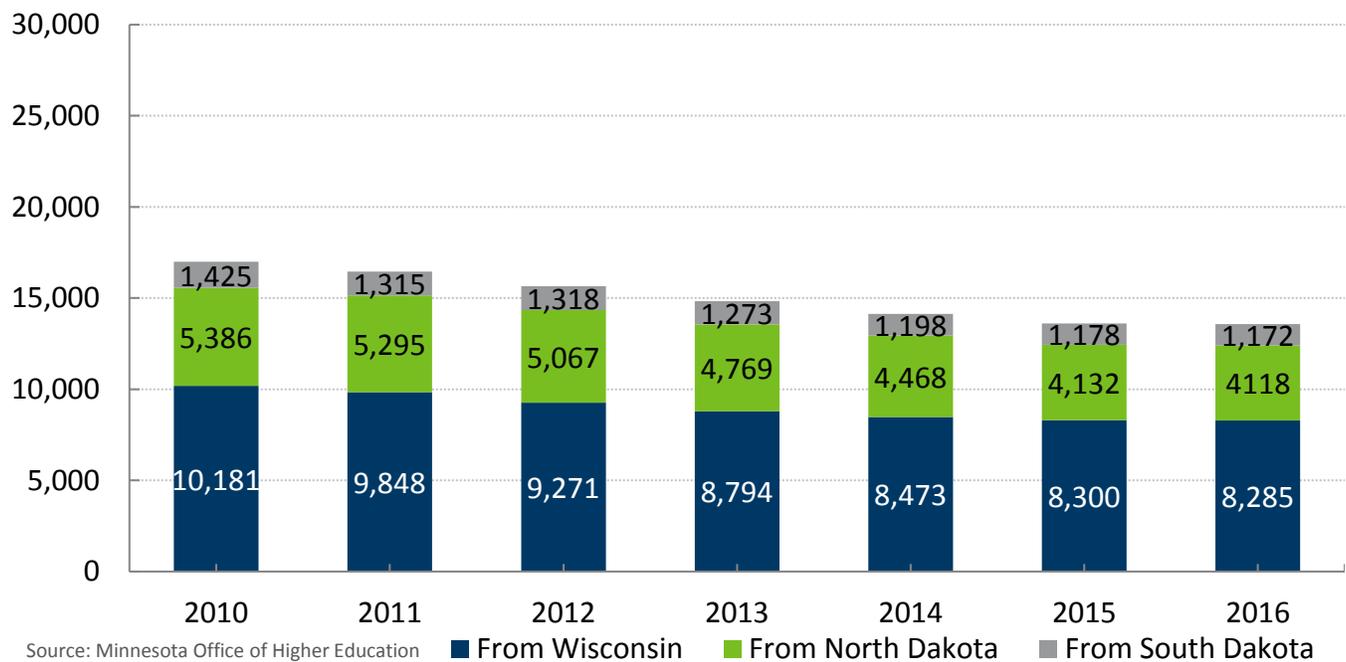
relatively flat - from 27,388 students in fall 2010 to 27,994 students in fall 2016 – indicating that growth in the participation gap did not result from increases in Minnesota participation (Figure 2).

Figure 2: Reciprocity Participation of Minnesota Residents, Fall 2010 to Fall 2016



Over the same period, reciprocity participation by residents of Wisconsin, North Dakota, and South Dakota decreased 20 percent, from 16,992 students in fall 2010 to 13,575 students in fall 2016 (Figure 3). Specifically, Wisconsin’s participation decreased by almost 19 percent, and North Dakota’s decreased by almost 24 percent. The next two sections examine where students chose to enroll under Minnesota’s two largest reciprocity agreements (Wisconsin and North Dakota), whether the tuition rate approach utilized may incite differences in participation between the states, and what impact the enrollment trends may have on the interstate payments.

Figure 3: Reciprocity Participation at Minnesota Institutions by Students’ State of Origin, Fall 2010 to Fall 2016

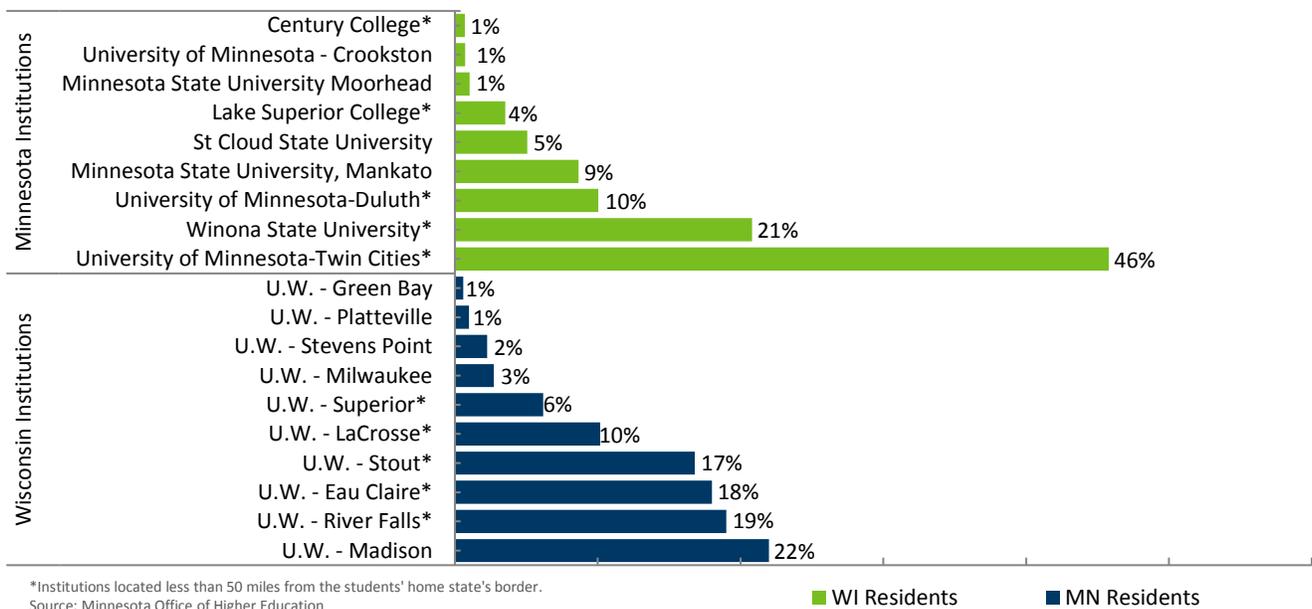


Minnesota - Wisconsin Agreement

Minnesota’s reciprocity agreement with Wisconsin represents Minnesota’s largest in terms of student flow. In fall 2016, 13,689 students from Minnesota chose to enroll at a Wisconsin institution through reciprocity, while 8,285 Wisconsin students attended a Minnesota institution. Students participating under the Minnesota – Wisconsin agreement pay the higher of the two states’ resident tuition rates at a comparable institution, meaning both Minnesota and Wisconsin students typically pay Minnesota tuition rates.²¹ Under this approach, Wisconsin students may be disincentivized from attending a Minnesota institution compared to the costs of enrolling in a comparable Wisconsin institution. Minnesota students, however, are neither incentivized nor disincentivized from enrolling in a Wisconsin institution in terms of tuition because they pay the same tuition rate they would have paid to attend a comparable Minnesota institution. While residents of both states benefit from additional postsecondary options – as the program intended – only Minnesota residents gain additional postsecondary options at an equivalent price to what they would have paid in their home state.²²

Figure 4 shows the top 10 Minnesota and Wisconsin institutions students chose to enroll in under the agreement in fall 2016. The top ten institutions in Wisconsin and Minnesota comprise 99 and 98 percent of all reciprocity enrollment under the agreement, respectively.²³ Almost half of all Wisconsin students enrolled at the University of Minnesota – Twin Cities (3,793 students or 46%). Correspondingly, the majority of Minnesota students enroll at the University of Wisconsin – Madison (3,003 students or 22%) – both prestigious research universities. Despite the price disincentive, Wisconsin students continue to enroll in significant numbers at the University of Minnesota – indicating they see attending the Twin Cities campus as a reasonable value despite incurring higher tuition costs. The data suggest, however, that the same enrollment behavior may not be true at regional universities.

Figure 4: Top 10 institutions for reciprocity enrollments under the MN-WI agreement, Fall 2016



²¹ Minnesota’s tuition rates are typically higher than Wisconsin, except the University of Wisconsin Colleges (two-year colleges).

²² Obviously, both sides benefit when compared to the traditional non-resident rate. In practice, however, even if reciprocity ended, students would likely only pay a portion of the non-resident rate if they chose to utilize the Midwest Higher Education Compact’s Student Exchange Program, which charges 150% of the resident rate (<http://msep.mhec.org/>).

²³ For a detailed breakout of enrollment by institution, see Table 8 in Appendix B.

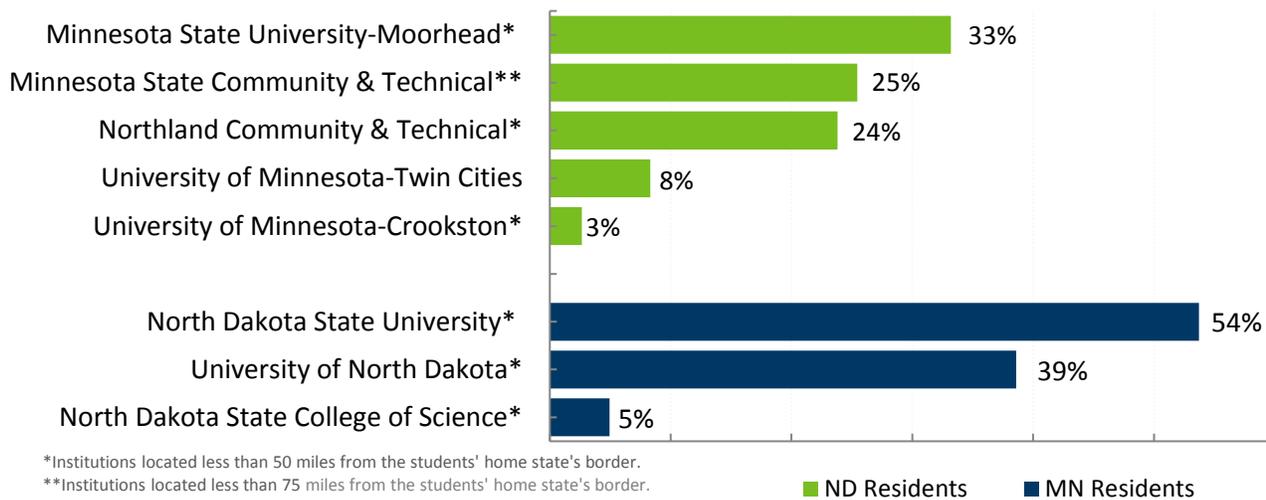
Enrollment of Minnesota students at Wisconsin’s regional public four-year universities also remains strong - 8,809 Minnesota students (64%) enrolled in four regional universities (River Falls, Eau Claire, Stout, and LaCrosse), all of which are located within 50 miles of Minnesota’s border – indicating proximity may play a key role in students’ decisions. Conversely, the next four largest Minnesota institutions in terms of Wisconsin reciprocity participation (Winona State, UMD, MSU-Mankato, and SCSU) only enrolled 3,691 (45%) students - representing less than half of Minnesota’s participation at regional universities. While the price disincentive likely impacts Wisconsin students’ enrollment decisions at Minnesota regional universities, its magnitude is unclear. The differences in enrollment at the regional universities account for a significant proportion of the overall difference in the student flow between the two states.

In terms of the interstate payment, all else being equal, if the participation gap continues to grow, Wisconsin’s obligation to Minnesota should increase. If the gap narrows, Wisconsin’s obligation would decrease. The tuition paid by both Minnesota and Wisconsin students exceed the program costs. As a result, the state with the larger overpayment, typically Minnesota, receives an interstate payment equal to the net overpayment amount from the other state. Specifically, as fewer Wisconsin students participate, Wisconsin’s total overpayment amount should decrease, resulting in a larger interstate payment from Wisconsin (assuming participation of Minnesota students remains static). The *Interstate Payment* section provides a detailed explanation of the program cost formula and the resulting interstate payment.

Minnesota - North Dakota Agreement

In fall 2016, 10,844 Minnesota students chose to attend a reciprocity institution in North Dakota (Figure 5). Comparatively, 4,118 North Dakota students chose to enroll in Minnesota. The difference in student participation levels between the states largely results from the significant size difference in the states’ populations (see Figure 13 in Appendix A). Minnesota residents attending North Dakota institutions pay the resident tuition rate at the institution attended plus a surcharge - 12 percent for undergraduates and 27 percent for graduate students. While North Dakota residents attending Minnesota institutions pay the higher of the two states’ resident tuition rates at comparable institutions. Meaning, North Dakota residents typically pay the Minnesota tuition rate, which may disincentivize them from choosing a Minnesota institution. Since 2010, the number of North Dakota students enrolled at a participating Minnesota reciprocity institution has steadily declined (see Figure 3).

Figure 5: Top institutions for reciprocity enrollments under the MN-ND agreement, Fall 2016



Source: Minnesota Office of Higher Education

North Dakota students primarily attend Minnesota institutions located close to the North Dakota boarder (85%). Almost 50 percent enrolled at two Minnesota community and technical colleges located within 50 miles of the state line – highlighting their regional role. Minnesota students overwhelmingly enrolled at two institutions (93%) – the University of North Dakota (UND) and North Dakota State University (NDSU). Several factors likely contribute to Minnesota residents’ decision to enroll at UND and NDSU including location, institutional prestige, and perceived value.²⁴

The Carnegie Foundation for the Advancement of Teaching classifies institutions according to their mission. An unintended consequence, however, has been the use of the classification as a barometer of prestige.²⁵ Table 3 shows the classifications for two University of Minnesota institutions (UMN-TC and UMD), Minnesota State Universities, and UND and NDSU.²⁶ According to the classifications, UND and NDSU are more similar in mission to UMN-TC than to Minnesota State Universities, but their published tuition is more similar to Minnesota State Universities. If Minnesota students and their families perceive UND and NDSU to be more similar in quality to UMN-TC, their enrollment, regardless of whether or not they applied and were accepted to the UMN-TC, may indicate they are making an informed consumer decision by attending an institution of similar quality (whether perceived or actual) at a significantly lower price.

Table 3: Carnegie Classification (2015, Basic) of select Minnesota and North Dakota reciprocity institutions

Carnegie Classification (2015, Basic)		Institution	2017-18 Tuition Charges for MN Residents (Fees not Included)*
Doctoral Universities	Highest Research Activity	University of Minnesota-Twin Cities	\$12,800.00
	Higher Research Activity	North Dakota State University	\$8,065.00
	Higher Research Activity	University of North Dakota	\$7,780.00
Master's Colleges & Universities	Larger Programs	University of Minnesota-Duluth	\$12,016.00
	Larger Programs	Minnesota State University-Mankato	\$7,179.00
	Larger Programs	Saint Cloud State University	\$7,095.00
	Larger Programs	Metropolitan State University	\$6,826.00
	Medium Programs	Minnesota State University Moorhead	\$7,410.00
	Medium Programs	Winona State University	\$7,377.00
	Small Programs	Bemidji State University	\$7,630.00

* The rates shown for UND and NDSU are the Minnesota reciprocity rates that include the surcharge
Source: Minnesota Office of Higher Education

Understanding where Minnesota students enrolling at UND and NDSU live in Minnesota may provide insights into students’ enrollment decisions. For example, if the majority of Minnesota students enrolling at UND and NDSU live close to the campuses then location likely plays a significant factor in their decision. Figure 6 shows concentrations of current Zip Codes for all first-time Minnesota reciprocity participants that enrolled at UND and NDSU in fall 2016. The map shows that a majority of students live in the Twin Cities metro area and surrounding suburbs. Additionally, as one would expect, students are heavily concentrated around major interstates (e.g. the

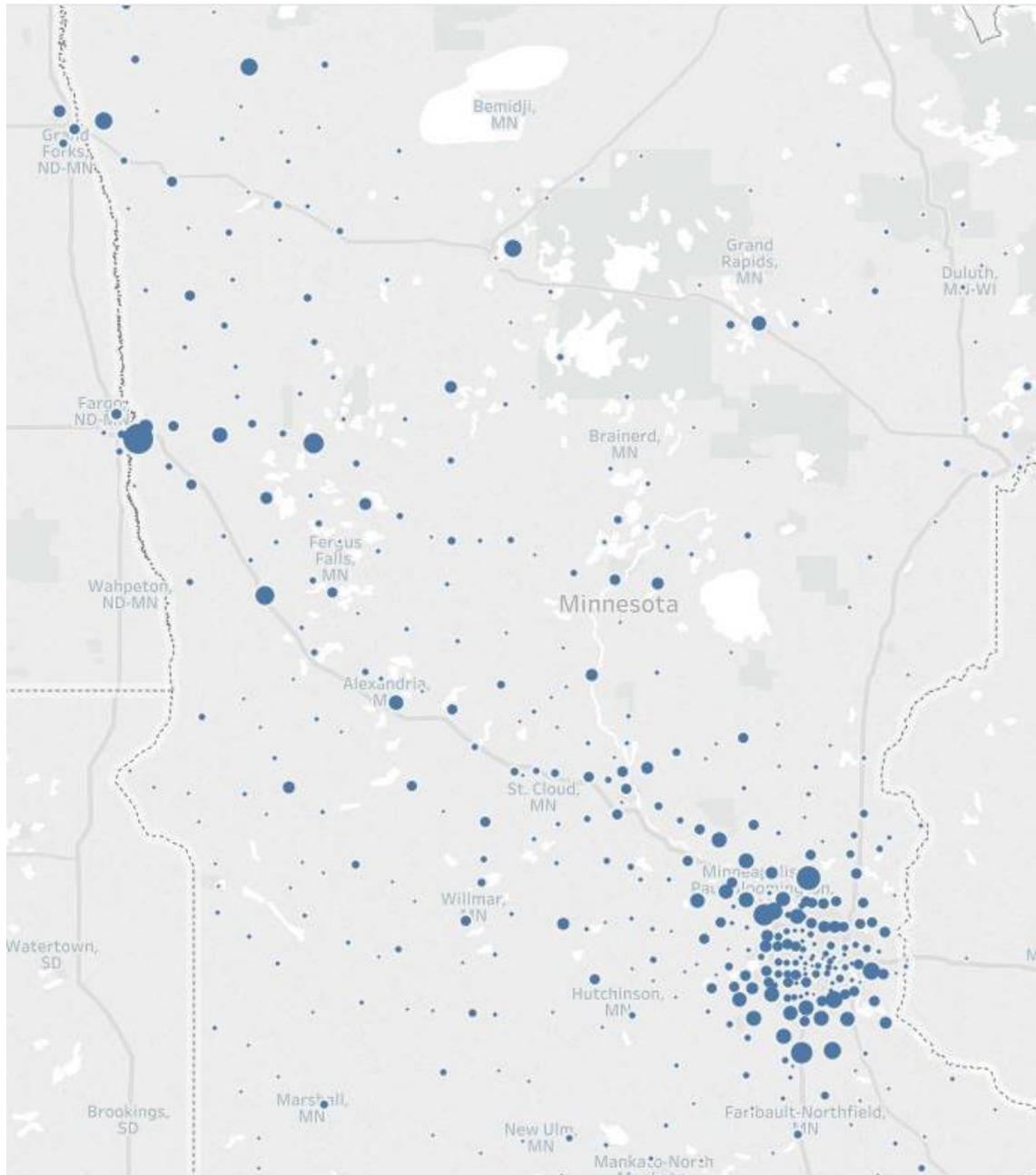
²⁴ Obviously, students’ college choice decisions incorporate numerous other factors in addition to those previously mentioned.

²⁵ Morphew, C. C., & Baker, B. D. (2004). The cost of prestige: Do new research I universities incur higher administrative costs? The Review of Higher Education, 27(3), 365-384.

²⁶ Although Table 2 shows the 2015 Carnegie Classification, UND’s and NDSU’s relative position remains the same across all the rankings since 1994. Carnegie modified their classifications over time in an attempt to try to discourage their use as a measure of prestige.

I-94 corridor) and highways (e.g., U.S. Hwy 10 & U.S. Hwy 2). It also appears that several Minnesota participants live very close to the campuses; however, because students report their current zip code, some participants may have reported their on-campus address rather than their permanent resident address, which overstates the size of this population. Because the majority of new Minnesota residents attending UND and NDSU in the fall of 2016 came from the Twin Cities metro area and surrounding suburbs, it seems reasonable to assume that factors other than location (including price) likely drive these students' decision to enroll at UND and NDSU.²⁷

Figure 6: Residence Zip Code of first-time Minnesota reciprocity students enrolled at UND and NDSU, Fall 2016



²⁷ For a description of North Dakota's success in attracting out-of-state residents to North Dakota see: (<http://online.wsj.com/article/SB10001424052702304231204576406042109860376.html>).

As previously mentioned, Minnesota's reciprocity agreement with North Dakota utilizes two different tuition policies for participating students. Minnesota residents attending North Dakota institutions pay the resident tuition rate at the institution attended plus a surcharge, while North Dakota residents attending Minnesota institutions pay the higher of the two states' resident tuition rates at comparable institutions. The reciprocity agreement with North Dakota is Minnesota's only agreement that utilizes two different tuition policies for participating students. The agreement's tuition setting approach diverged as a result of changes to the agreement in 2013 that reduced Minnesota's interstate payment obligation. Prior to 2013, both Minnesota and North Dakota students essentially paid the higher of the two state rates at a comparable institution. Under the prior agreement, Minnesota State Universities were identified as the comparable institutions to UND and NDSU, rather than the University of Minnesota – Twin Cities.²⁸

Minnesota's annual interstate payment to North Dakota is largely determined by the difference in student flow between the states and the amount of tuition Minnesota students paid. Because more Minnesota residents enrolled in North Dakota institutions than the reverse, and the tuition paid by Minnesota participants does not cover the marginal instructional costs, Minnesota issues an interstate payment to North Dakota.

In 2017, OHE renegotiated Minnesota's agreement with North Dakota to accomplish two broad goals:

1. ***To limit Minnesota's annual financial obligation*** – the revised agreement limits Minnesota's interstate payment obligation to the lesser of the program costs for each fiscal year or the annual amount appropriated by the state legislature for the current biennium – resulting in a lower interstate payment beginning with the 2018 fiscal year.²⁹ In exchange, North Dakota can increase the surcharge charged to Minnesota residents without Minnesota's approval if Minnesota lowers its annual appropriation amount.
2. ***Ensure state parity*** – The modified agreement also allows either North Dakota or Minnesota to increase the surcharge with the mutual agreement of the other state (except in the circumstances described above). Previously, only North Dakota could initiate an increase in the surcharge (with Minnesota's approval). Under the previous agreement, Minnesota could not initiate a surcharge increase. A termination clause was also added that allows either North Dakota or Minnesota to cancel the agreement. To be clear, neither state expressed a desire or is seeking to terminate the agreement.

The *Interstate Payment* section provides a detailed explanation of the program cost formula and the resulting interstate payment.

²⁸ The agreement only utilizes tuition, and does not include fees.

²⁹ Assuming Minnesota would have increased its appropriation to cover the required obligation in future biennium.

Interstate Payments

Marginal Instructional Cost

In order to understand the costs associated with participating in reciprocity agreements for students and states, it is essential to understand the concept of a “marginal instructional cost.” A marginal instructional cost is the economic cost of incremental enrollment. For purposes of tuition reciprocity agreements, the agreements assume that each participating state has existing instructional costs (both fixed and variable) associated with educating their own residents (infrastructure, personnel, etc...) and that incrementally adding additional non-residents will not increase the cost of instruction at a rate that is equal to or greater than the average full instructional cost.³⁰ In Minnesota’s reciprocity agreements, the marginal instructional cost is set at 64 percent of the per-student instructional costs.³¹

Interstate Payments

Students, through tuition payments, and participating states, through interstate payments (if the reciprocity agreement requires an interstate payment), bear the responsibility for covering the marginal instructional cost. According to *Minnesota Statutes 136A.08, Subd. 3 and 4*, Minnesota’s reciprocity agreements may include a provision for interstate tuition reciprocity payments according to a formula mutually acceptable to the participating states. Currently, Minnesota has long-standing interstate payment agreements with Wisconsin, North Dakota, and South Dakota. Minnesota and South Dakota, however, have historically agreed to waive the interstate payment in the annual memorandum of understanding due to the small student flow between the states.

A cost-based formula that accounts for the total reciprocity tuition paid by students and the number of enrolled reciprocity students determines a state’s interstate payment. In its simplest form, the cost formula first takes into account the tuition a reciprocity student pays for his or her education. The remaining marginal instructional costs are the responsibility of the general fund of a reciprocity student’s state of residence, as shown in the following formula.

$$\begin{aligned} & \text{Marginal Instructional Costs per Student} \\ & - \text{Reciprocity Tuition Paid per Student} \\ & = \text{State General Fund Obligation per Student} \end{aligned}$$

All else being equal, increasing the tuition paid per student decreases a state’s general fund obligation for tuition reciprocity. Conversely, decreasing the tuition paid per student increases a state’s general fund obligation.

³⁰ The tenability of these assumptions has not been studied for the tuition reciprocity program. It is also unclear whether the large number of students participating in the program results in a violation of the assumption that the cost of instruction will not increase at a rate that is equal to or greater than the average full instructional cost. Given the high participation, it may be the case that some states and/or institutions are simply swapping enrollments. A review of the higher education literature does suggest that the marginal instructional cost for incremental enrollment is less than the average instructional costs for undergraduate instruction (Vedder, 2004).

³¹ It is OHE’s current understanding that the 64 percent marginal instructional cost rate estimate was originally based on historical research. OHE, however, has been unable to identify the original source document.

Tuition Rate Setting Approaches

The tuition students pay under the reciprocity agreements, along with the student flow between the states, determine the interstate payment amounts under Minnesota's agreements with North Dakota and Wisconsin. Tuition rates used in Minnesota's tuition reciprocity agreements reflect agreement among the participating states and their public postsecondary education systems. Since the inception of tuition reciprocity in the 1960s, Minnesota's reciprocity agreements have utilized a variety of the tuition rate setting approaches, including:

1. **The resident tuition rate at the institution attended, with or without a surcharge.** The current policy for Minnesota residents attending North Dakota institutions and participating institutions in Manitoba and Iowa.
2. **The higher of the two-state resident tuition rates at a comparable institution.** The current policy in place for the South Dakota and Wisconsin agreements and for North Dakota residents attending Minnesota institutions.
3. **The resident tuition rate at a comparable institution in the student's state of residence, with or without a surcharge.** None of Minnesota's agreements currently utilize this approach.

Generally, tuition setting approaches change as a result of a state's desire to reduce its interstate payment, institutions' desire to capture more revenue (or sustain existing revenue streams), or state policy concerns - such as out-of-state students paying less tuition to attend an in-state institution than resident students. Changing the tuition setting approach utilized under an agreement to achieve a policy goal may result in other intended or unintended consequences. Historically, for example, decreasing the interstate payment meant increasing the amount students and their families pay in tuition. Understanding how a proposed change aligns with the program's purpose of promoting "the mutual improvement of educational advantages for residents" remains a core consideration. Additionally, while some of the approaches may be more beneficial to Minnesota students and their families than others, all of them benefit Minnesota students more than the traditional postsecondary marketplace where students pay conventional non-resident tuition rates. Below some of the advantages and disadvantages of the three tuition rate setting approaches are briefly described.

1. Students charged the resident tuition rate at the institution attended with or without a surcharge.

This approach functions most like a competitive market - students pay the resident rate set by the institution they attend. It also has the advantage of being readily understood by students and their families, and rewards informed consumers from higher-priced states. Under this approach, educated and savvy consumers (students and their families) benefit from attending an institution of equivalent quality (whether perceived or actual) at a lower price in a reciprocity state than a comparable institution in their home state. Minnesota residents would benefit under this approach when attending an out-of-state institution. This approach, however, may create a price incentive for students from states with higher resident tuition rates (Minnesota) to leave their state of residence, resulting in a decline in institutional tuition revenue for in-state institutions.

Minnesota's agreements with Manitoba and Iowa Lakes Community College utilize the resident tuition rate at the institution attended. Additionally, Minnesota residents attending North Dakota University System institutions pay the resident rate plus a surcharge, while North Dakota students attending Minnesota institutions pay the higher of two states' residents' rate for the type of campus attended. As previously stated, the surcharge was implemented in fall 2013 to reduce Minnesota's general fund obligation to North Dakota. The modification to the North Dakota agreement created a policy misalignment that still exists today - the tuition setting approach differs based on the students' state of residence.

Utilizing a Surcharge

Historically, states' implemented or increased a surcharge to reduce the state's interstate payment obligation (subsidy). While implementing or increasing a surcharge reduces the states obligation, it shifts more of the marginal instructional costs onto students and their families – increasing their direct costs of pursuing a postsecondary education. As the price of attending an out-of-state institution approaches more costly in-state options as a result of a surcharge, fewer students may choose to enroll – limiting student choice and the number of lower-priced postsecondary alternatives available to students. The cost shift, as a result of the surcharge, may also increase student debt - an often cited concern of policymakers.

2. Students charged the higher of the two states' resident tuition rates at a comparable institution.

In practice, because Minnesota's public postsecondary institutions tuition rates are generally higher than the tuition rates at comparable institutions in reciprocity states, Minnesota resident reciprocity students pay the higher Minnesota tuition rate charged at a comparable Minnesota institution. Under this approach, Minnesota students are neither incentivized nor disincentivized from enrolling in a participating out-of-state institution because they pay the same tuition rate they would have paid to attend a comparable Minnesota institution. This approach, however, does increase the costs Minnesota reciprocity students pay to enroll in a participating out-of-state institution compared to option #1. Conversely, reciprocity students attending Minnesota public postsecondary education institutions pay the higher Minnesota tuition rate at the institution attended, creating a disincentive for them to enroll in Minnesota institution.³²

This approach advantages institutions in the state with higher resident tuition rates as they are more likely to retain more in-state students. Additionally, assuming no changes to enrollment behavior as a result of the increased costs to students from higher priced states, out-of-state institutions would collect additional tuition revenue.³³ This approach disadvantages students and their families compared to option #1, but still provides them with a discount compared to the traditional non-resident rates. The higher of the two-state resident tuition rates at comparable institutions is current practice for all students under Minnesota's reciprocity agreements with South Dakota and Wisconsin, and for North Dakota residents attending Minnesota institutions.

3. Students charged the resident tuition rate at a comparable institution in the student's state of residence.

Under this approach, Minnesota students attending an out-of-state reciprocity institution pay a tuition rate equal to the resident rate they would have paid at a comparable Minnesota institution. Again, Minnesota's tuition rates are typically higher than the resident rates in participating reciprocity states, meaning this approach increases the cost of postsecondary education for Minnesota students and their families participating in reciprocity compared to option #1. Additionally, under this tuition setting model, institutions in the state with higher resident tuition rates (in this case Minnesota) would also collect less tuition revenue from a reciprocity student than from a resident student. For example, a Wisconsin student attending the University of Minnesota would pay the University of Wisconsin resident rate, which is lower than the University of Minnesota's resident rate. Minnesota-Wisconsin tuition reciprocity agreement used this approach prior to 2007. The agreement was modified to address three concerns: 1. The University of Minnesota wanting to capture a larger share of revenue, 2. Wisconsin students paying less tuition to attend

³² If the gap between the two states' resident tuition rates begins to narrow, the impact of the disincentive would diminish.

³³ As the gap between the two states' resident tuition rates increases, there will likely be greater fall off in reciprocity enrollment, which may offset any revenue gains acquired from the higher tuition price.

the University of Minnesota than Minnesota residents, and 3. Wisconsin’s desire to reduce its interstate payment to Minnesota.

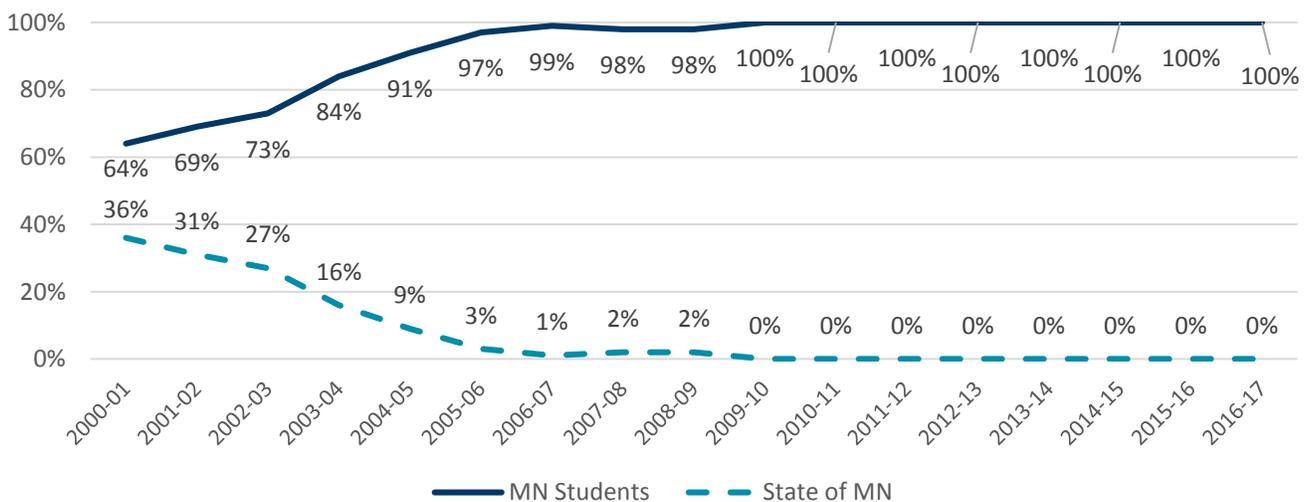
In summary, Minnesota’s current reciprocity agreements vary in their tuition setting approaches, and have changed approaches over the last 40 years to achieve state and institutional priorities, such as lowering the interstate payment and allowing institutions to capture (or maintain) revenue. Furthermore, in addition to varying across the agreements, Minnesota’s agreement with North Dakota utilizes two different tuition policies for participating students depending on their state of residence. From a policy perspective, two key questions emerge: Should Minnesota’s agreements be uniform in their tuition setting approach? And, if so, what tuition setting approach should Minnesota utilize in its agreements?

The answers to these questions likely vary depending on the stakeholders. Given the program’s purpose, however, of promoting student choice, option #1 – paying the resident tuition rate at the institution attended without a surcharge - seems to align most closely with the program’s goals. Option #1 provides Minnesota students and their families with more postsecondary options at the lowest cost – making college more affordable as public concerns over the price of college continue to grow. As discussed earlier, this approach, however, creates other consequences that would need to be carefully considered and weighed before implementing this approach universally.

Marginal Instructional Cost Split

Today, students, through the tuition they paid, cover the majority of the marginal instructional costs. Figures 7 and 8 show the marginal instructional cost split between students and the state under both the Wisconsin and North Dakota agreements. For the 2016-17 academic year, the tuition paid by Minnesota residents’ attending Wisconsin institutions exceeded the marginal instructional cost, up from 64 percent in 2000-01 (Figure 7).³⁴

Figure 7: Allocation of Marginal Instructional Costs (Agreement with Wisconsin), 2000-01 to 2016-17

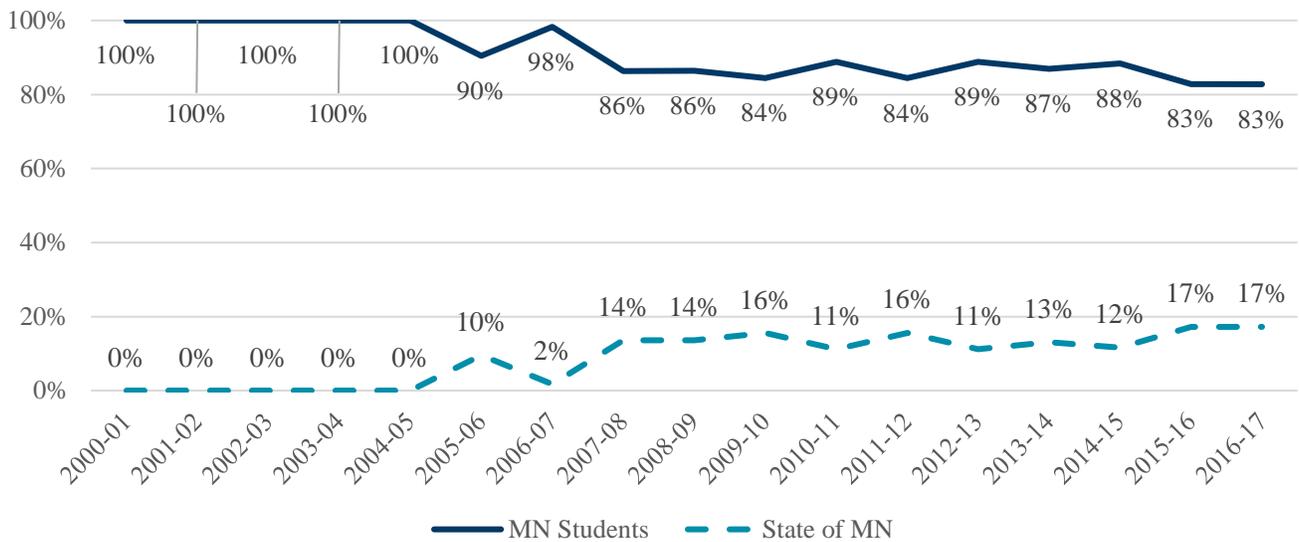


Minnesota residents’ tuition in North Dakota covered 83 percent of the marginal instructional cost (down from 100 percent in 2000-01). Minnesota, through the interstate payment, is responsible for the remaining 17 percent (Figure 8).³⁵

³⁴ The trends are the same for Wisconsin students and the State of Wisconsin’s share of the marginal instructional cost.

³⁵ Estimates are based on preliminary invoice data from North Dakota for the 2016-17 academic year.

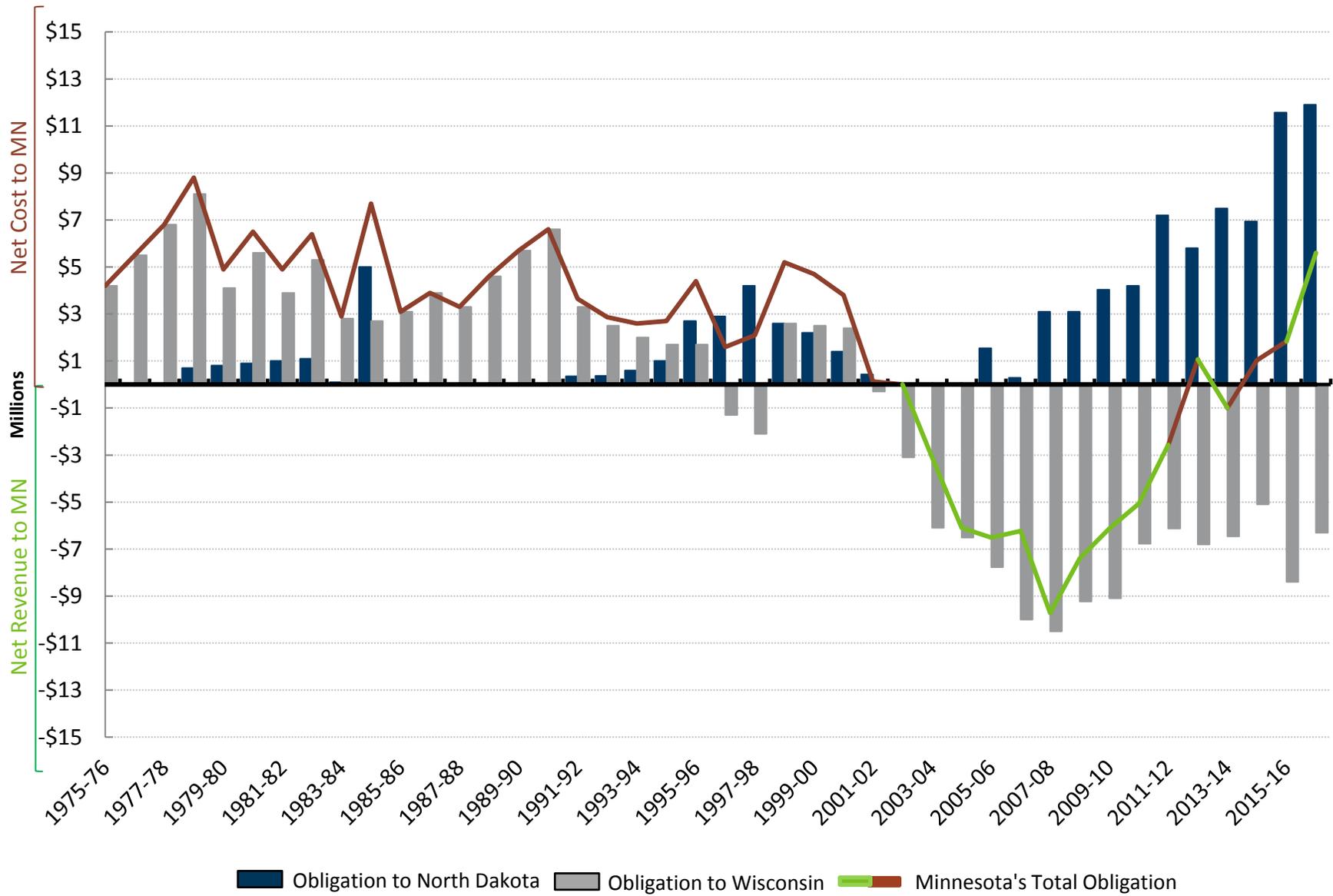
Figure 8: Allocation of Marginal Instructional Costs (Agreement with North Dakota), 2000-01 to 2016-17



Note: 2016-17 Data from North Dakota is preliminary

Historically, both of Minnesota’s reciprocity agreements with North Dakota and Wisconsin resulted in a general fund obligation for Minnesota (see Figure 9 on p. 18). Changes to the agreement with Wisconsin combined with tuition increases that eventually exceeded the marginal instructional cost resulted in Wisconsin issuing payments to Minnesota beginning with the 2002-03 academic year. Initially, the payments from Wisconsin more than offset Minnesota’s general fund cost associated with the North Dakota agreement. Over the last five years, however, the growth in Minnesota’s obligation to North Dakota resulted in an overall net program cost for Minnesota. Based on preliminary invoices from North Dakota and Wisconsin, the net cost of Minnesota’s tuition reciprocity program is projected to be \$5.6 million for the 2016-17 academic year.

Figure 9: Minnesota's General Fund Obligation, 1975-16 to 2016-17



Source: Minnesota Office of Higher Education
 Note: 2016-17 Data from North Dakota is preliminary

Minnesota-Wisconsin Interstate Payment Formula

Because the tuition paid by both Minnesota and Wisconsin students exceeds the marginal instructional cost, Wisconsin’s interstate payment to Minnesota represents the difference in the net amount of student tuition paid in excess of marginal instructional costs (Table 5). Specifically, the state that made the larger overpayment above the marginal instructional cost receives a payment for the net difference between the two states’ overpayment. For the 2016-17 academic year, Wisconsin’s estimated payment to Minnesota is \$6.3 million.

Table 4: Preliminary Minnesota-Wisconsin Interstate Payment Calculation: 2014-15 Academic Year (\$ millions)

Payment Variable	WI Obligation to MN	MN Obligation to WI
Marginal Instructional Costs	\$66.5	\$88.3
- Student Paid Tuition	\$84.1	\$112.2
= Remainder	(\$17.6)	(\$23.9)
Difference = \$6.3 million WI payment to MN General Fund		

Source: Minnesota Office of Higher Education

Minnesota-North Dakota Interstate Payment Formula

The Minnesota-North Dakota agreement uses a marginal cost formula based on the state educating the greatest number of students, defined as “GAP full-time equivalent (FTE) Students” (Table 6). Currently, more Minnesota residents enroll in North Dakota public institutions than the reverse, and their tuition fails to cover the marginal instructional costs. As a result, Minnesota issues North Dakota an interstate payment. For the 2016-17 academic year, 7,096 more Minnesota FTE students enrolled in a North Dakota than the reverse, resulting in an estimated interstate payment of \$11.9 million.³⁶ Beginning with the 2017-18 academic year, Minnesota’s interstate payment will be capped at \$11.02 million as a result of the 2017 renegotiated agreement. The renegotiated agreement caps Minnesota’s interstate payment at the lesser of: 1. the actual remaining marginal instructional cost balance, or 2. the annual amount appropriated by the Minnesota legislature. North Dakota agreed to forgo any balance that exceeds the annual appropriation amount in exchange for the ability to increase the surcharge Minnesota students pay without approval from Minnesota if the legislature reduces the annual appropriation amount.

Table 5: Preliminary Minnesota-North Dakota Interstate Payment Formula: 2016-17 Academic Year

	Operational Expenditure per FTE	\$15,148
	Marginal Expenditure Rate	0.64
x	Marginal Expenditure per FTE	\$9,695
=	Resident Tuition Rate (NDSU/UND)	(\$6,802)
-	Remaining Marginal Expenditures per FTE	\$2,893
=	GAP FTE Students	7,096
x	Gross State Obligation	\$20,525,993
-	Student Payment	\$8,671,632
=	Net State Obligation	\$11,854,361

³⁶ The North Dakota agreement uses the resident tuition rate at NDSU/UND.

In addition to more Minnesota residents enrolling in North Dakota public institutions than the reverse, which is the largest driver of Minnesota’s obligation, North Dakota’s growth in total educational revenue also plays a key role. Table 4 shows the percent change in total educational revenue per FTE, appropriations per FTE, and net tuition revenue per FTE for both Minnesota and North Dakota over the past five years. Total educational revenue per FTE is the sum of appropriations per FTE and net tuition revenue per FTE. Over the period, North Dakota increased their state support of their public institutions on an FTE basis (up 19.9% over the past five years) at a faster rate than Minnesota. Additionally, their net tuition revenue growth (12.4%) significantly outpaced Minnesota’s (-5.5%), which is primarily driven by the differences in enrollment declines each state experienced over the period. Increases in both state support and net tuition revenue resulted in increases in their total operating expenditures and, therefore, the marginal instructional cost.³⁷

Table 6: 5-year percent change: Total Educational Appropriations, Appropriations, and Tuition (per FTE)

	Total Educational Revenue Per FTE	Appropriations per FTE	Net Tuition per FTE	FTEs
Minnesota	2.4%	13.3%	-5.5%	-9.9%
North Dakota	16.2%	19.9%	12.4%	-3.7%

Source: State Higher Education Officers Association (SHEEO), SHEF: FY 2016 - State Higher Education Finance Survey

Are Interstate Payments Still Necessary?

As previously stated, interstate payments are based on the marginal instructional cost associated with incremental enrollment. Again, the model assumes that **incrementally** adding additional non-residents will not increase the cost of instruction at a rate that is equal to, or greater than, the average full instructional cost. At what point, however, does the net student flow violate the assumption of incremental enrollment? Additionally, if the incremental enrollment assumption is violated, what are the implications? Would the marginal instructional cost rate adequately account for the actual costs of instruction resulting from enrolling additional non-residents students over and above incremental enrollments? If the net student flow represents a significant portion of state’s postsecondary system, does the agreement still necessitate an interstate payment?

In order to adequately answer these questions, the instructional costs associated with these additional enrollments (any enrollments above incremental enrollments) would need to be examined by program and institution.³⁸ Alternatively, examining the student flows between participating states may provide an indicator of whether or not the net reciprocity participation under both Minnesota’s agreement with North Dakota and Minnesota’s agreement with Wisconsin seems to be consistent with the incremental assumption.³⁹

³⁷ Operating expenditure per FTE is operationalized as the total revenue (appropriations and tuition) at UND and NDSU minus specific program exclusions divided by the total FTE. Rather than using total revenue, instructional costs per FTE would be more appropriate.

³⁸ It could be the case that when aggregated at the state level, the costs of the additional enrollment may not be problematic, however, they may be at certain institutions or programs within an institution whose marginal instructional costs are not fully met.

³⁹ We focus on net reciprocity enrollments, because we assume that each state would have been able to enroll an equivalent number of students equal to the lower number of students sent between the two states without jeopardizing the marginal instructional cost rate assumption due to participation in reciprocity. For example, Minnesota sent 3,386 students in fall 2015 to South Dakota, and South Dakota sent 1,178 students to Minnesota. We assume that Minnesota and South Dakota both would have been able to enroll 1,178 students without jeopardizing the marginal instructional cost rate assumption due to participation in reciprocity. The same would be true for Minnesota’s other reciprocity agreements.

For the 2016-17 academic year, almost 93 percent (9,699) of Minnesota's total FTE participating in reciprocity in North Dakota enrolled at UND and NDSU.⁴⁰ Comparatively, in 2016-17, UND's and NDSU's combined FTE totaled 25,557,^{41,42} meaning that Minnesota reciprocity students represented 38 percent of the institutions' total FTE enrollment. Additionally, the tuition paid by Minnesota students (\$72 million) represented approximately 36 percent of UND and NDSU's tuition revenue (\$224 million).⁴³ While the interstate payment (\$11 million), which is now capped (beginning with the 2017-18 academic year), represents five percent of UND's and NDSU's total tuition revenue. Given that Minnesota residents make up such a significant proportion of UND's and NDSU's FTE and tuition revenue, it seems doubtful that the level of participation should be considered incremental.

Assuming that Minnesota's reciprocity participation in North Dakota violates the assumption of incremental enrollment, what are the consequences? If the tuition paid by Minnesota students' and the interstate payment from Minnesota fail to cover the actual instructional costs the institutions and programs incurred as a result of the additional enrollment, then the formula may be underestimating the actual costs of the reciprocity program. At the same time, the scale of Minnesota's participation at UND and NDSU indicates that the institutions heavily depend on Minnesota residents to sustain their enterprise. Minnesota students' decisions to enroll in North Dakota institutions indicates that the arrangement is mutually beneficial, and that Minnesota families perceive enrolling in North Dakota to be a good investment. Even if the tuition paid by Minnesota residents fails to cover the marginal instructional cost, the sheer size of the proportion of North Dakota's public enrollment and tuition revenue attributable to Minnesota residents raises the question: Is the interstate payment still necessary? Or, does the significant amount tuition revenue flowing across the border provide sufficient justification to maintain the reciprocity program without an interstate payment?

Comparatively, total participation of Minnesota residents at Wisconsin institutions represented less than 10 percent of each states' full-time equivalent enrollments (FTE) for the 2016-17 academic year. At least aggregated at the state level, the incremental enrollment assumption may be tenable under the Minnesota-Wisconsin agreement. Given that the tuition paid by students from both states, however, exceeds the marginal instructional costs, should the interstate payment between Wisconsin and Minnesota be re-evaluated? Again, the significant participation by residents from both states indicates that the arrangement is mutually beneficial, but does the interstate payment remain necessary?⁴⁴ Wisconsin previously expressed the desire to end the interstate payment since the payment represents an overpayment rather than a subsidy to offset any unmet program costs.

Minnesota would likely benefit from aligning all of its tuition reciprocity agreements under a common policy framework. Considering that Minnesota currently only exchanges an interstate payment under two of its five agreements, and the need for the remaining interstate payments seems unclear, aligning the North Dakota and

⁴⁰ Minnesota's total FTE enrollment in 2015-16 was 10,482. FTE enrollment is a different measure than fall enrollment.

⁴¹ The FTE count excludes enrollments in the Pharmacy, Medical, and Law schools because they are excluded in the formula calculations.

⁴² North Dakota University System (NDUS) Office (2017). Final Payment Invoice.

⁴³ For the purposes of reciprocity, tuition associated with the Pharmacy, Medical, and Law schools is removed from the total tuition revenue for the marginal cost formula; however, it has not been removed in the calculations presented – overestimating UND's and NDSU's actual tuition revenue.

⁴⁴ Additionally, consideration should be given to how the interstate payment Minnesota receives from Wisconsin is used. Currently, the payment gets deposited to Minnesota's general fund for the state to appropriate in order to achieve its priorities. In other words, the excess tuition Minnesota students pay above the marginal instructional costs ultimately ends up subsidizing other state priorities or initiatives. Indirectly, it could be argued, that the overpayment becomes part of Minnesota's biennial appropriation to higher education. Given the source of the funds – Minnesota students' and families' tuition payments under reciprocity, would a better use of the funds be to further remove any financial barriers that may keep low-income students from participating in Minnesota's reciprocity agreement in Wisconsin?

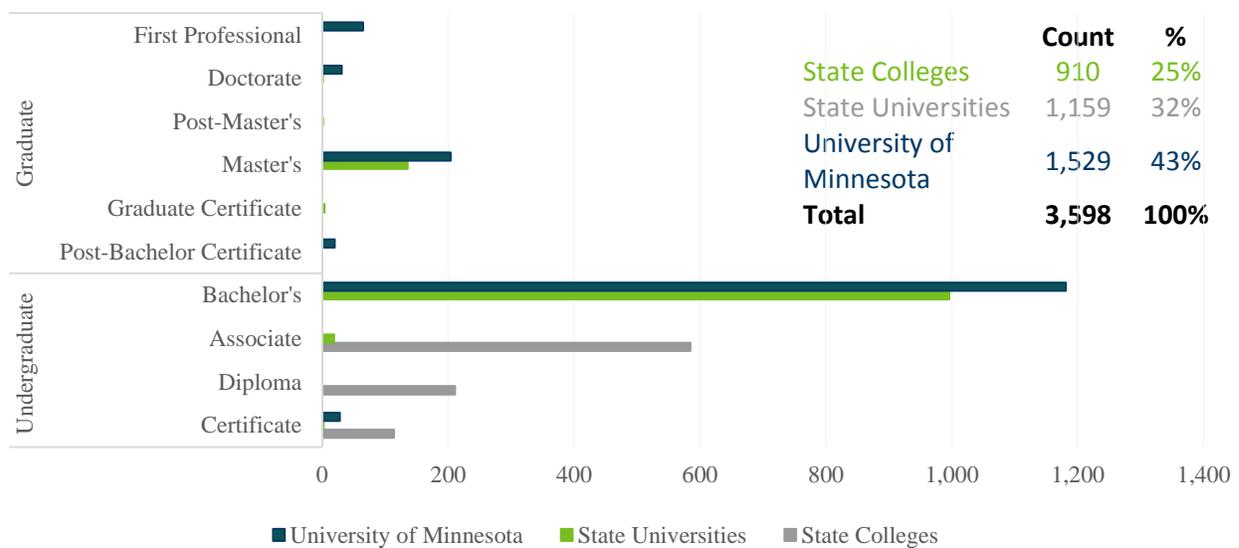
Wisconsin agreements – in terms of the interstate payment – with Minnesota’s other reciprocity agreements should be considered. Until its determined if whether a uniform policy approach would be beneficial across all Minnesota’s reciprocity agreements for students, an intermediate step may be discontinuing the interstate payments with North Dakota and Wisconsin while the other components of the existing agreement remained in place – aligning with Minnesota’s other agreements. Ultimately, if eliminating the interstate payments resulted in increased costs for Minnesota students and their families, then aligning the policies under a common framework may run counter to the program’s purpose.

Outcomes

The significant participation by Minnesota residents, and residents of participating states, indicates that Minnesota’s reciprocity agreements successfully expanded affordable postsecondary options for students and their families. This section explores the postsecondary outcomes of reciprocity students, because both students and the participating states want to ensure that participating students earn a credential of economic value. Specifically, it explores the credentials earned by out-of-state reciprocity students that enrolled at Minnesota institutions, including: the number of credentials awarded by sector, type, and trends over time.⁴⁵ Additionally, the section closes by examining whether or not Minnesota residents, and out-of-state residents enrolling in Minnesota, find jobs and participate in Minnesota’s workforce following graduation.

During the 2016-17 academic year, out-of-state residents enrolled in Minnesota institutions through reciprocity earned 3,598 postsecondary credentials (Figure 10).⁴⁶ Undergraduate degrees represented 87 percent of all the degrees awarded, with out-of-state students primarily pursuing bachelor’s degrees (61%). Graduate degrees composed the remaining 13 percent of credentials awarded. Of the 3,598 credentials conferred, Minnesota State accounted for 57 percent (State Colleges – 25%, State Universities – 32%), while the University of Minnesota conferred 43 percent.

Figure 10: Credentials Awarded by Type and Sector, 2016-17 Academic Year



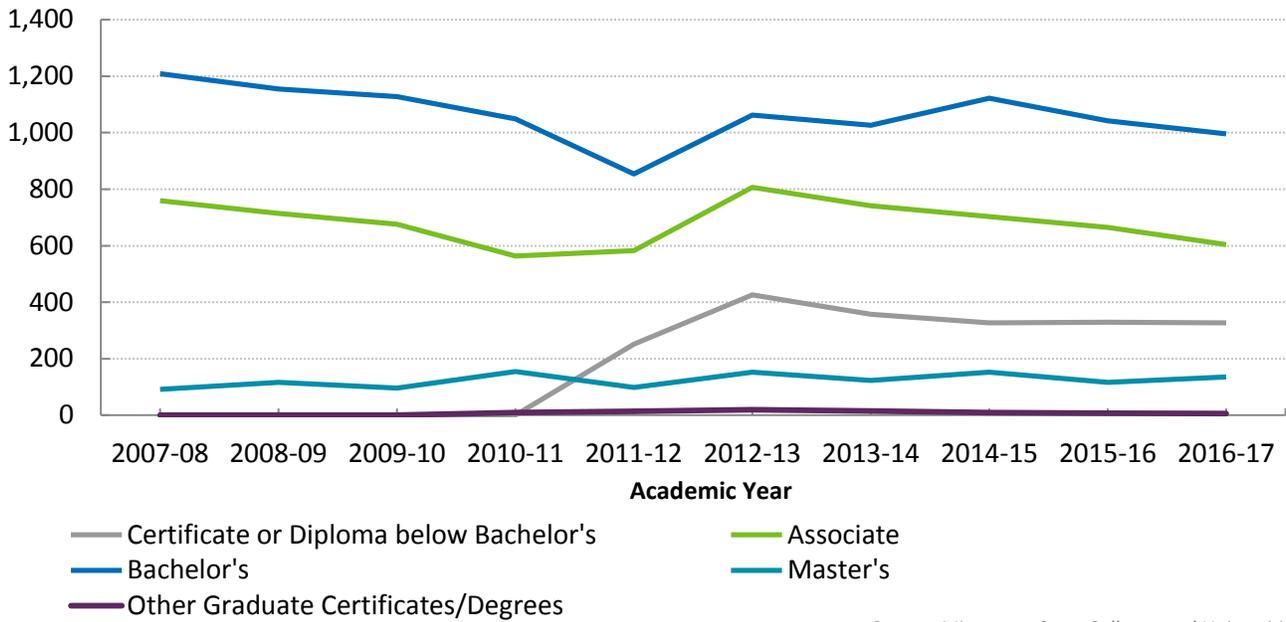
Figures 10 and 11 show that the number of reciprocity graduates slightly decreased in 2016-17 at both the University of Minnesota and at Minnesota State institutions corresponding to declines in reciprocity participation (Figure 3). Enrollments typically increase during periods of economic distress (e.g., the great recession) and decline as the economy recovers and displaced workers begin re-entering the labor market. Postsecondary enrollments are down nationally almost five percent over the last five years, with larger declines in Wisconsin (9.5%) and Minnesota (9.9%). North Dakota enrollments declined 3.7 percent over the same period.⁴⁷

⁴⁵ Credential data by participating Minnesota institutions for 2016-17 are in Appendix D.

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⁴⁷ State Higher Education Officers Association (SHEEO), SHEF: FY 2016 - State Higher Education Finance Survey

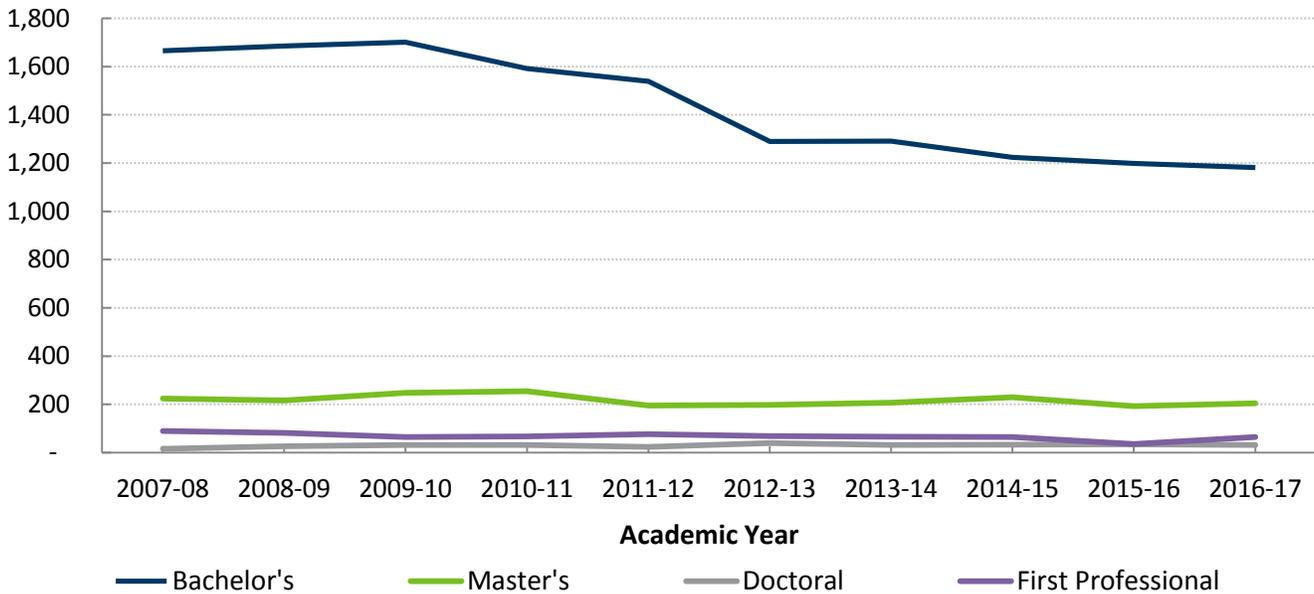
Figure 11: Minnesota State Colleges and Universities Tuition Reciprocity Graduates, 2007-08 to 2016-17



Source: Minnesota State Colleges and Universities

The number of bachelor’s degrees awarded to non-resident reciprocity participants at the University of Minnesota have declined from 1,685 in 2007-08 to 1,283 in 2016-17. Within Minnesota State, the bachelor’s degree and associate’s degree trend lines follow similar trajectories, with the number of bachelor’s degrees awarded declining from 1,209 in 2007-08 to 996 in 2016-17, and the number of associate’s degree decreasing from 715 to 604 over the same period. Again, these trends likely primarily result from the overall participation declines of out-of-state residents in the reciprocity program.

Figure 12: University of Minnesota Tuition Reciprocity Graduates, 2007-08 to 2016-17



Source: University of Minnesota

A key question asked by policymakers is: Do Minnesota students participating in reciprocity return to Minnesota to work following graduation? Previous research shows that more than 60 percent of Minnesota reciprocity participants that graduated from a participating institution in Wisconsin, North Dakota, or South Dakota returned to Minnesota's workforce within three years of graduation.⁴⁸ Specifically, 66 percent of Minnesota students graduating from a Wisconsin had wages in Minnesota within three years of graduation. Likewise, 62 percent of Minnesota students graduating from a North Dakota institution reemerged in Minnesota's workforce during the same period. While 50 percent of the Minnesota students graduating from South Dakota institutions had wages in Minnesota within three years of graduating. Additionally, Minnesota retained almost 40 percent of reciprocity graduates that attended a participating Minnesota institution from Wisconsin, North Dakota, and South Dakota.

Comparatively, data from Minnesota's Statewide Longitudinal Education Data System (SLEDS) shows that 75 percent of graduates from Minnesota institutions, including Minnesota residents and non-residents that enrolled at both private and public institutions had wages in Minnesota two years following graduation.⁴⁹ Although the measures differ in terms of:

- the populations examined (Minnesota residents enrolled out-of-state vs. Minnesota residents and non-residents enrolled in Minnesota),
- institutions included (public vs. all),
- and timing (two years following graduation compared to three),

the comparison indicates that Minnesota students participating in reciprocity return to Minnesota at reasonably high rates.

Additionally, a recent report from North Dakota showed that only 22 percent of out-of-state students that graduated from the North Dakota University System had wages in North Dakota three years following graduation.⁵⁰ The number staying in North Dakota declined each subsequent year following graduation. While the population examined in the report was broader than out-of-state reciprocity participants, Minnesota reciprocity students would have been included, providing an additional point of comparison.

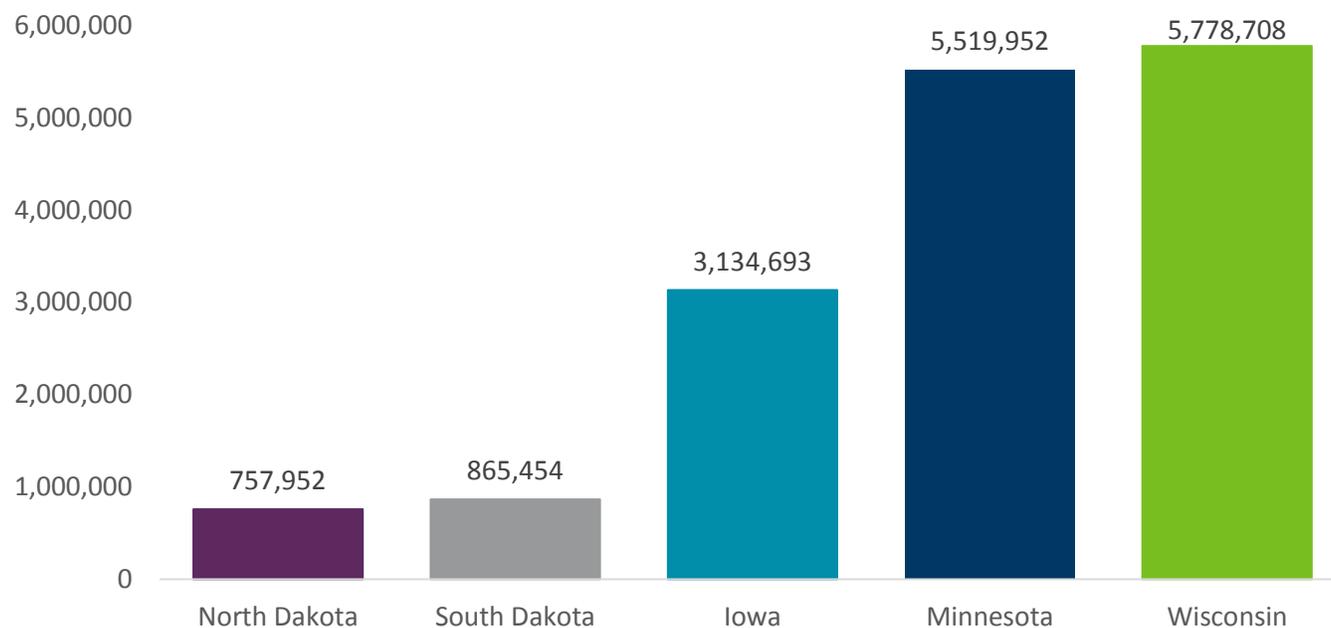
⁴⁸ Office of the Legislative Auditor (2003, September). *Evaluation Report: Higher Education Tuition Reciprocity*. St. Paul, MN, Retrieved from <https://www.auditor.leg.state.mn.us/ped/pedrep/0308all.pdf>

⁴⁹ Based on the 2013 graduation cohort, retrieved from http://www.sleds.mn.gov/#employment/orgId--999999000_groupType--state_employmentCOHORTID--2013_employmentAward--All+Awards_p--7

⁵⁰ North Dakota Statewide Longitudinal Data System (2017, January 5). NDUS Graduate Retainment and Waiver Report. Retrieved from <https://slds.ndcloud.gov/public/SiteAssets/NDUS%20Graduate%20Retainment%20and%20Waiver%20Report.pdf>

Appendix A: State Resident Populations

Figure 13: State Resident Population Estimates, 2016



Source: U.S. Census Bureau, Population Division
Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2016

Appendix B: Reciprocity Fall Headcounts

Table 7: Fall Headcounts, 2010-2016

	Minnesota & Wisconsin		Minnesota & North Dakota		Minnesota & South Dakota	
	MN Residents Attending in WI	WI Residents Attending in MN	MN Residents Attending in ND	ND Residents Attending in MN	MN Residents Attending in SD	SD Residents Attending in MN
2010	14,431	10,181	10,325	5,386	2,632	1,425
2011	14,590	9,848	10,790	5,295	2,823	1,315
2012	14,523	9,282	11,447	5,067	3,013	1,318
2013	14,186	8,794	11,234	4,769	3,180	1,273
2014	14,104	8,473	11,014	4,468	3,316	1,198
2015	13,837	8,300	11,047	4,132	3,386	1,178
2016	13,689	8,285	10,844	4,118	3,461	1,172

Source: Minnesota Office of Higher Education

Table 8: Minnesota-Wisconsin Reciprocity Participation, Fall 2016

Minnesota Residents Enrolled in Wisconsin Institutions				Wisconsin Residents Enrolled in Minnesota Institutions			
	Undergraduate	Graduate	Total		Undergraduate	Graduate	Total
U of WI-Madison	2,865	138	3,003	Anoka-Ramsey Community College	-	-	-
U of WI-Milwaukee	323	49	372	Bemidji State University	42	-	42
U of WI-Green Bay	77	3	80	Central Lakes College	-	-	-
UW College System	10	-	10	Century College	58	-	58
U of WI-Stout	2,238	60	2,298	Fond du Lac Tribal & Cmty College	1	-	1
U of WI-Eau Claire	2,453	26	2,479	Hibbing Community College	7	-	7
U of WI-LaCrosse	1,304	87	1,391	Inver Hills Community College	3	-	3
U of WI-Oshkosh	52	3	55	Itasca Community College	21	-	21
U of WI-Platteville	134	-	134	Lake Superior College	293	-	293
U of WI-River Falls	2,552	89	2,641	Mesabi Range Cmty & Tech College	3	-	3
U of WI-Stevens Point	299	10	309	Metro State University	41	9	50
U of WI-Superior	801	45	846	Minneapolis Cmty & Tech College	1	-	1
U of WI-Whitewater	62	3	65	MN State Cmty & Tech College	30	-	30
U of WI-Parkside	6	-	6	MN State Univ Moorhead	75	10	85
Total	13,176	513	13,689	MN State Univ, Mankato	691	27	718
				MN West Cmty & Tech College	15	-	15
				Normandale Community College	1	-	1
				North Hennepin Community College	-	-	-
				Northland Cmty & Tech College	7	-	7
				Rainy River Community College	12	-	12
				Ridgewater College	14	-	14
				Riverland Community College	17	-	17
				Rochester Cmty & Tech College	9	-	9
				Southwest MN State Univ	14	-	14
				St Cloud State Univ	395	24	419
				Univ of MN-Crookston	59	-	59
				University of MN-Duluth	761	70	831
				University of MN-Morris	26	-	26
				University of MN-TC	3,428	365	3,793
				Vermilion Community College	33	-	33
				Winona State University	1,668	55	1,723
				Total	7,725	560	8,285

Table 9: Minnesota-North Dakota Reciprocity Participation, Fall 2016

Minnesota Residents Enrolled in North Dakota Institutions

	Undergraduate	Graduate	Professional	Total
Bismarck State College	14	-	-	14
Dickinson State University	6	-	-	6
Mayville State University	93	-	-	93
Minot State University	5	-	-	5
NDSCS-Wahpeton	535	-	-	535
Dakota College at Bottineau	6	-	-	6
NDSU-Fargo	5,633	192	2	5,827
UND-Grand Forks	3,816	369	1	4,186
Lake Region State College	48	-	-	48
UND-Williston	-	-	-	-
Valley City State University	123	-	1	124
Total	10,279	561	4	10,844

North Dakota Residents Enrolled in Minnesota Institutions

	Undergraduate	Graduate	Professional
Anoka-Ramsey Cmty College	-	-	-
Riverland Community College	-	-	-
Bemidji State University	41	3	-
Central Lakes College	-	-	-
Vermilion Community College	-	-	-
Hibbing Community College	-	-	-
Itasca Community College	2	-	-
MN State University, Mankato	31	4	-
Minneapolis Cmty & Tech College	-	-	-
MN State University Moorhead	1,206	161	-
North Hennepin Cmty College	-	-	-
Rochester Cmty & Tech College	-	-	-
Southwest MN State University	5	-	-
St Cloud State University	51	3	-
Northland Cmty & Tech College	981	-	-
University of MN-Duluth	63	7	-
University of MN-Morris	9	-	-
MN State College-SE Technical	2	-	-
Winona State University	10	-	-
University of MN-Twin Cities	289	35	18
Mesabi Range Cmty & Tech College	-	-	-
University of MN-Crookston	109	-	-
Ridgewater College	9	-	-
MN West Cmty & Tech College	1	-	-
St Paul College	-	-	-
St Cloud Technical College	11	-	-
Fine Technical College	2	-	-
South Central Technical College	-	-	-
MN State Cmty & Tech College	1,048	-	-
Alexandria Technical College	-	-	-
Lake Superior College	1	-	-
NW Technical College-Bemidji	2	-	-
Rainy River Community College	-	-	-
Inver Hills Community College	1	-	-
Anoka Technical College	-	-	-
Normandale Community College	-	-	-
Metro State University	9	-	-
Dakota County Technical College	-	-	-
Hennipen Technical College	3	-	-
Century College	1	-	-
Fond du Lac Tribal & Cmty College	-	-	-
Total	3,887	213	18

Table 10: Minnesota-South Dakota Reciprocity Participation, Fall 2016

Minnesota Residents Enrolled in South Dakota Institutions			
	Undergraduate	Graduate	Total
Black Hills State University	23	-	23
Dakota State University	129	5	134
Northern State University	144	1	145
SDSM&T	310	15	325
SDSU-Brookings	2,264	95	2,359
USD-Vermillion	403	72	475
Total	3,273	188	3,461

South Dakota Residents Enrolled in Minnesota Institutions			
	Undergraduate	Graduate	Total
Anoka-Ramsey Cmty College	1	-	1
Riverland Community College	-	-	-
Bemidji State University	6	1	7
Central Lakes College	-	-	-
Vermilion Community College	2	-	2
Hibbing Community College	-	-	-
Itasca Community College	2	-	2
MN State University, Mankato	271	4	275
Minneapolis Cmty & Tech College	3	-	3
MN State University Moorhead	112	11	123
North Hennipen Cmty College	-	-	-
Rochester Cmty & Tech College	-	-	-
Southwest MN State University	126	16	142
St Cloud State University	78	8	86
Northland Cmty & Tech College	-	-	-
University of MN-Duluth	13	8	21
University of MN-Morris	32	-	32
Winona State University	20	-	20
University of MN-Twin Cities	351	61	412
Mesabi Range Cmty & Tech College	-	-	-
University of MN-Crookston	9	-	9
Ridgewater College	2	-	2
MN West Cmty & Tech College	28	-	28
St Paul College	-	-	-
South Central College	1	-	1
MN State Cmty & Tech College	4	-	4
Lake Superior College	-	-	-
Rainy River Community College	-	-	-
Inver Hills Community College	-	-	-
Normandale Community College	-	-	-
Metro State University	1	-	1
Century College	1	-	1
Fond du Lac Tribal & Cmty College	-	-	-
Total	1,063	109	1,172

Appendix C: Interstate Payments

Table 11: Preliminary Wisconsin Interstate Payment, 2015-16 Academic Year

Minnesota's Obligation to Wisconsin				
	Number of Credits	Marginal Instructional Cost	Student Paid Tuition	Net State Obligation
U.W. Madison - Undergraduate	78,809	\$24,104,521	\$35,040,179	-\$10,935,658
U.W. Milwaukee Undergraduate	9,020	\$1,894,741	\$3,770,214	-\$1,875,473
U.W. Madison - Graduate	3,745	\$3,213,285	\$2,820,024	\$393,261
U.W. Milwaukee Graduate	938	\$649,875	\$693,432	-\$43,557
U.W. College System	226	\$40,212	\$42,956	-\$2,744
U.W. Comprehensive 4-year - Undergraduate	277,139	\$55,632,782	\$66,674,552	-\$11,041,770
U.W. Comprehensive 4-year - Graduate	7,360	\$2,759,224	\$3,117,375	-\$358,151
Total	377,236	\$88,294,640	\$112,158,732	-\$23,864,092
Wisconsin's Obligation to Minnesota				
	Number of Credits	Marginal Instructional Cost	Student Paid Tuition	Net State Obligation
U of M Twin Cities & Morris	100,823	\$30,837,815	\$41,334,541	-\$10,496,726
U of M Duluth - Undergrad	22,782	\$4,785,587	\$8,846,967	-\$4,061,380
U of M Twin Cities Graduate	11,249	\$9,652,210	\$9,340,143	\$312,068
U of M Duluth - Graduate	1,819	\$1,259,911	\$1,417,517	-\$157,605
MnSCU State Colleges	11,661	\$2,074,753	\$1,929,030	\$145,723
MnSCU 4-year & U of M Crookston - Undergrad	85,751	\$17,213,656	\$20,467,394	-\$3,253,739
MnSCU State Universities - Graduate	1,839	\$689,478	\$740,855	-\$51,377
Total	235,924	\$66,513,409	\$84,076,446	-\$17,563,037
Difference in Net State Totals = Wisconsin payment to Minnesota General Fund				\$6,301,055

Source: Minnesota Office of Higher Education

Table 12: Minnesota’s General Fund Obligation, 1975-76 to 2015-16

Year	Obligation to North Dakota	Obligation to Wisconsin	Minnesota's Total Obligation
1975-76	\$ -	\$ 4.20	\$ 4.20
1976-77	\$ -	\$ 5.50	\$ 5.50
1977-78	\$ -	\$ 6.80	\$ 6.80
1978-79	\$ 0.70	\$ 8.10	\$ 8.80
1979-80	\$ 0.80	\$ 4.10	\$ 4.90
1980-81	\$ 0.90	\$ 5.60	\$ 6.50
1981-82	\$ 1.00	\$ 3.90	\$ 4.90
1982-83	\$ 1.10	\$ 5.30	\$ 6.40
1983-84	\$ 0.10	\$ 2.80	\$ 2.90
1984-85	\$ 5.00	\$ 2.70	\$ 7.70
1985-86	\$ -	\$ 3.10	\$ 3.10
1986-87	\$ -	\$ 3.90	\$ 3.90
1987-88	\$ -	\$ 3.30	\$ 3.30
1988-89	\$ -	\$ 4.60	\$ 4.60
1989-90	\$ -	\$ 5.70	\$ 5.70
1990-91	\$ -	\$ 6.60	\$ 6.60
1991-92	\$ 0.35	\$ 3.30	\$ 3.65
1992-93	\$ 0.37	\$ 2.50	\$ 2.87
1993-94	\$ 0.60	\$ 2.00	\$ 2.60
1994-95	\$ 1.00	\$ 1.70	\$ 2.70
1995-96	\$ 2.70	\$ 1.70	\$ 4.40
1996-97	\$ 2.90	\$ (1.30)	\$ 1.60
1997-98	\$ 4.20	\$ (2.10)	\$ 2.10
1998-99	\$ 2.60	\$ 2.60	\$ 5.20
1999-00	\$ 2.20	\$ 2.50	\$ 4.70
2000-01	\$ 1.40	\$ 2.40	\$ 3.80
2001-02	\$ 0.43	\$ (0.30)	\$ 0.13
2002-03	\$ -	\$ (3.10)	\$ (3.10)
2003-04	\$ -	\$ (6.10)	\$ (6.10)
2004-05	\$ -	\$ (6.51)	\$ (6.51)
2005-06	\$ 1.54	\$ (7.77)	\$ (6.23)
2006-07	\$ 0.28	\$ (10.00)	\$ (9.72)
2007-08	\$ 3.10	\$ (10.50)	\$ (7.40)
2008-09	\$ 3.10	\$ (9.23)	\$ (6.13)
2009-10	\$ 4.03	\$ (9.10)	\$ (5.07)
2010-11	\$ 4.20	\$ (6.77)	\$ (2.57)
2011-12	\$ 7.20	\$ (6.13)	\$ 1.07
2012-13	\$ 5.80	\$ (6.80)	\$ (1.00)
2013-14	\$ 7.49	\$ (6.46)	\$ 1.03
2014-15	\$ 6.94	\$ (5.10)	\$ 1.84
2015-16	\$ 11.57	\$ (8.40)	\$ 3.17
2016-17 ¹	\$ 11.85	\$ (6.30)	\$ 5.55

Notes:

1. 2016-17 Data for North Dakota is preliminary

2. The Office of Higher Education renegotiated its agreement with ND in 2017. In terms of the interstate payment, the revised agreement limits Minnesota's interstate payment obligation to the lesser of the marginal expenditure calculation for each fiscal year or the annual amount appropriated by the state legislature for the current biennium. If Minnesota lowers its annual appropriation amount, North Dakota can increase the surcharge charged to Minnesota residents without Minnesota's approval.

Appendix D: Graduates by Institution

Table 13: University of Minnesota Reciprocity Graduates, 2016-17

	Certificate – pre-bachelor	Bachelor’s	Certificate – post-bachelor	Master’s	Doctoral	First Professional	Total
Crookston		34					47
Duluth	1	141		18	1		164
Morris		15					3
Rochester		4					5
Twin Cities	27	987	20	186	30	65	1283
Total	28	1,181	20	204	31	65	1,529

Source: University of Minnesota

Table 14: Preliminary Minnesota State Reciprocity Graduates, 2016-17 (Preliminary)

Institution	Degree Type								Total
	Certificate	Diploma	Associate	Bachelor's	Graduate Certificate	Master's	Post-Master's	Doctorate	
Community and Technical Colleges									
Alexandria Technical and Community College									
Anoka Colleges									
Anoka-Ramsey Community College									
Anoka Technical College									
Central Lakes College									
Century College	1	1	7						9
Dakota County Technical College	3								3
Fond du Lac Tribal and Community College									
Hennepin Technical College									
Inver Hills Community College			2						2
Lake Superior College	17	18	48						83
Minneapolis Community and Technical College	1								1
Minnesota State College - Southeast Technical	25	27	43						95
Minnesota State Community and Technical College	7	62	214						283
Minnesota West Community and Technical College	13	6	15						34
Normandale Community College									
North Hennepin Community College									
Northeast Higher Education District									

Hibbing Community College		1	2						3
Itasca Community College	1	1	3						5
Mesabi Range Community and Technical College									
Rainy River Community College			2						2
Vermilion Community College	2		16						18
Northland Community and Technical College	42	76	203						321
Northwest Technical College - Bemidji			1						1
Pine Technical College		16	8						24
Ridgewater College	2	2	6						10
Riverland Community College			1						1
Rochester Community and Technical College			3						3
St. Cloud Technical and Community College		1	11						12
Saint Paul College									
South Central College									
Subtotal Colleges	114	211	585						910

Universities									
Bemidji State University				17		1			18
Metropolitan State University	1			12		4			17
Minnesota State University, Mankato	1		2	193	2	16			214
Minnesota State University Moorhead			1	337		75	1		414
St. Cloud State University			1	75		18			94

Southwest Minnesota State University			25		11				36
Winona State University		15	337	2	11			1	366
Subtotal Universities	2		19	996	4	136	1	1	1,159
System Total	116	211	604	996	4	136	1	1	2,069

Source: Minnesota State Colleges and
Universities

mn