

2016 Hope College Enrollment Projection Model An Update of the 2010 and 2013 Models

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In the summer of 2010 we ran a model that projected Hope College enrollments up to the 2019-2020 academic year based on the projected number of high school graduates by state over the same period of time. The projections produced by this model predicted a significant decrease in the Hope enrollment in the ensuing ten years due to a sharp projected decrease in the number of high school graduates from the state of Michigan. In 2013, that model was updated based on actual Hope enrollment and more recent projections of the number of high school graduates by state. Three years have passed since that model was run. This study is an update of the 2013 model with three additional years of actual enrollment data. The source of the high school graduation projections is the December 2012 edition of the report *Knocking at the College Door* from the Western Interstate Commission for Higher Education (WICHE).

Description of the Enrollment Model

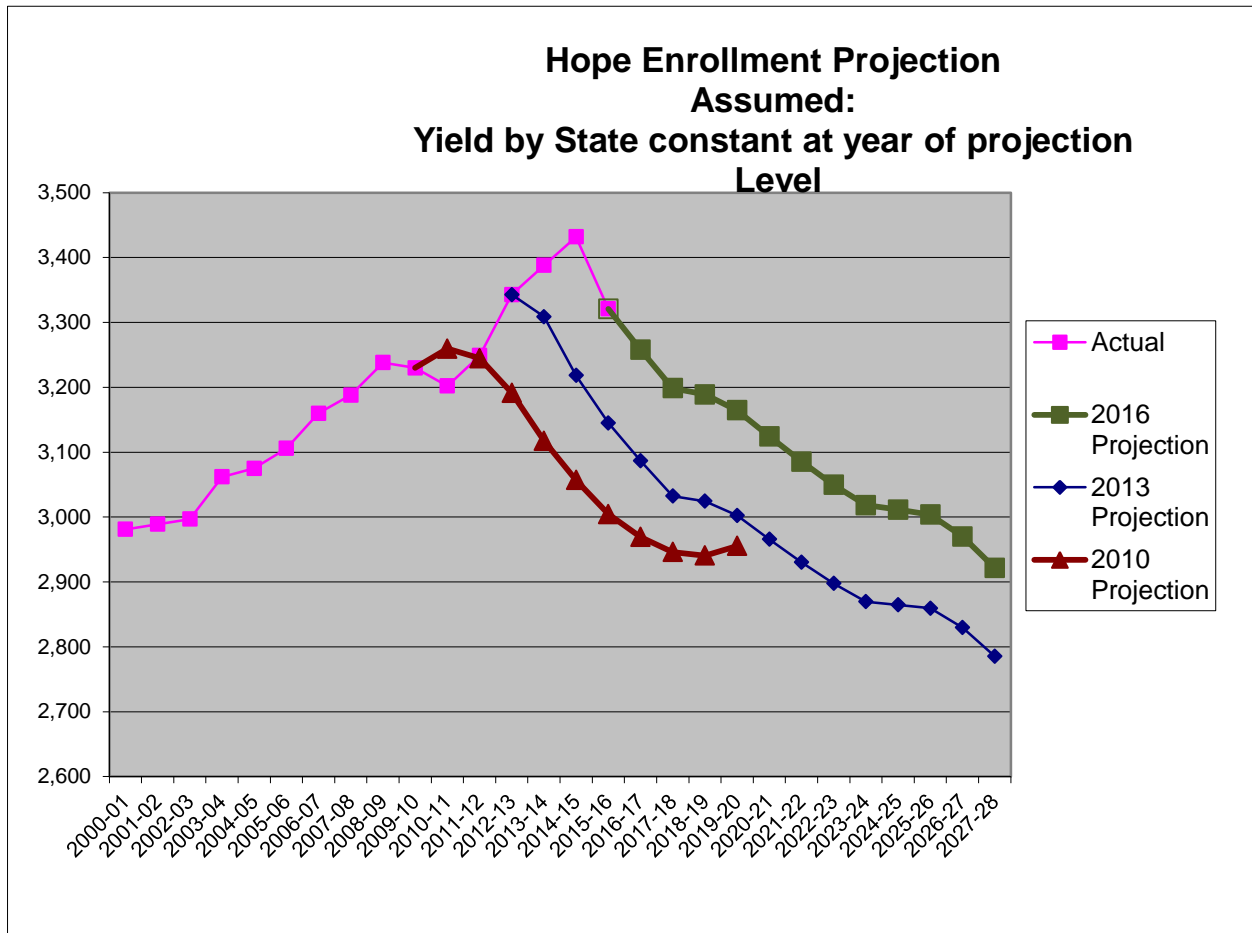
The enrollment model divides the Hope College student body into five categories based on their state of residence prior to enrolling at Hope. These categories are Michigan, Illinois, Indiana, Ohio, and other. The four states chosen are the home states of 87% of Hope students. Every other state is home to less than 2% of the student body. For each of the four specified states, we calculate the percentage of high school graduates in the preceding four years from the percentage of those who are enrolled at Hope for the present academic year (2015-16). For those in the “other” category, we calculate the percentage of high school graduates in the preceding four years from the entire United States who are enrolled at Hope from outside of the four selected states. These calculations are summarized in the table below

	Michigan	Illinois	Indiana	Ohio	Other
2009-12 high school graduates	480,248	595,879	276,173	537,570	13,497,043
2012-13 Hope enrollment	2,272	467	95	71	438
Hope enrollment as % of total	0.473%	0.078%	0.038%	0.013%	0.003%
2012-15 high school graduates	443,532	585,408	272,335	514,459	13,136,197
2015-16 Hope enrollment	2,287	522	100	67	345
Hope enrollment as % of total	0.516%	0.089%	0.037%	0.013%	0.003%

The basic assumption of the enrollment model is that the percent of students enrolling at Hope from each of the five pools of students above remains constant in the future. Based on this assumption and based on the WICHE projections for the number of high school graduates by state, the model projects the Hope enrollment size for the next 12 years.

The chart and table on the next page show the projections from this model. The pink values on the chart and in the first column of the table represent actual Hope enrollments. The maroon values on the chart and in the middle column of the table represent the projections from the model run in 2010. The blue values on the chart and in the third column of the table represent the projected enrollments from the

2013 model.



Year	Actual Hope Enrollment	2010 Hope Projected Enrollment	2013 Hope Projected Enrollment	2015 Hope Projected Enrollment
2000-01	2,981			
2001-02	2,989			
2002-03	2,997			
2003-04	3,062			
2004-05	3,075			
2005-06	3,106			
2006-07	3,160			
2007-08	3,188			
2008-09	3,238			
2009-10	3,230			
2010-11	3,202	3,260		
2011-12	3,249	3,245		
2012-13	3,343	3,191		
2013-14	3,388	3,117	3,309	
2014-15	3,432	3,057	3,218	
2015-16	3,321	3,005	3,145	
2016-17		2,969	3,087	3,258
2017-18		2,946	3,032	3,199
2018-19		2,941	3,024	3,189
2019-20		2,956	3,003	3,165
2020-21			2,966	3,124
2021-22			2,930	3,085
2022-23			2,898	3,050
2023-24			2,870	3,018
2024-25			2,865	3,011
2025-26			2,860	3,004
2026-27			2,830	2,970
2027-28			2,785	2,922

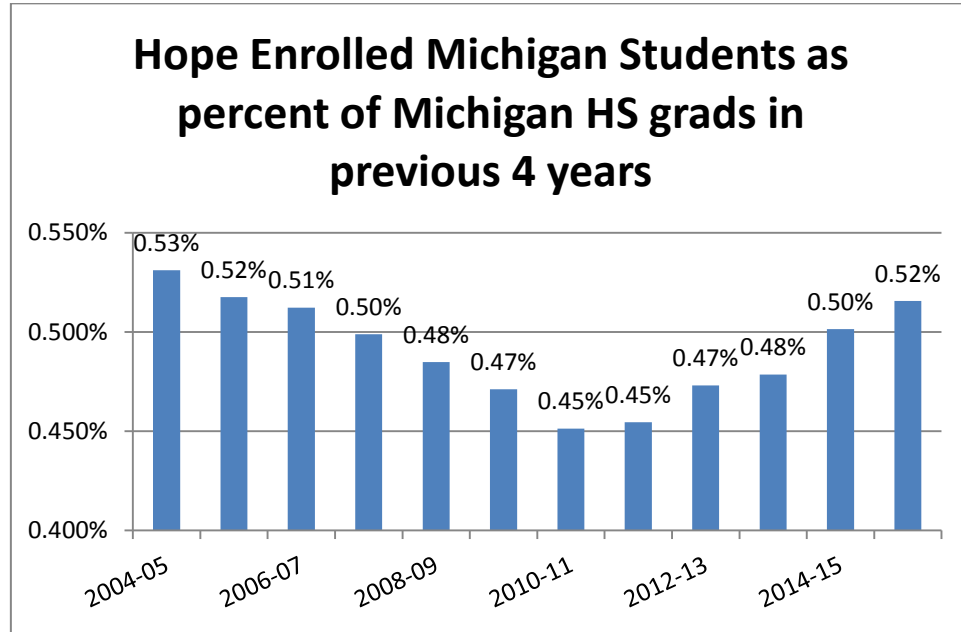
Projected Change Annual HS Graduates 2015-16 to 2027-28		
	Total	Annual
Michigan	-18.57%	-1.70%
Illinois	-10.93%	-0.96%
Indiana	-1.89%	-0.16%
Ohio	-8.25%	-0.72%
USA	-0.44%	0.04%
Hope Profile	-14.78%	-1.32%
Projected Change 4 yr cohort of HS grads 2012-15 to 2024-27		
	Total	Annual
Michigan	-16.55%	-1.63%
Illinois	-7.25%	-0.68%
Indiana	1.88%	0.17%
Ohio	-2.68%	-0.25%
USA	4.95%	0.44%
Hope Profile	-12.02%	-1.06%

Observations

The 2010 and 2013 models have both underpredicted the actual enrollments by significant amounts. The reason for this is that the model's assumption of constant percentage of the graduating high school students is not holding. In particular, for Michigan, which accounts for almost 70% of the Hope student population, the percent of graduating high school students attending Hope has increased significantly, from 0.45% in 2010 to .052% in 2015. This percentage has returned to the same level as ten years ago after a dip in the middle of that decade.

While the 2016 model predicts a slower decrease in Hope's enrollment over the next decade, the prediction is still significant. This is not surprising since the WICHE projections indicate that the pool of Michigan high school graduates will decrease by almost 20% over the next 12 years and Michigan students currently make up almost 70% of Hope's enrollment. The projected change in the pool of students based on the Hope profile is a decrease of almost 15%. The Hope profile is calculated weighting changes in each of the five categories by the percentage of Hope students in each category.

The 2010 model considered several alternatives to using the most recent percent by state for projecting the future percent by state of high school graduates who would enroll at Hope. This was based on the fact that the percent of Michigan graduates enrolling at Hope had decreased steadily in the years immediately prior to 2010. In the years since, the Michigan percentage has reversed this decrease as shown in the chart below.



This shows a steady increase in Hope's draw from the pool of Michigan high school graduates over the past four years. If this trend continues, the model will continue to underestimate Hope's enrollment.

Conclusions

Over the past six years that this model has been in effect, Hope College enrollment has outperformed the model's projections. This can be explained by the growing percentage of Michigan high school graduates who have chosen to attend Hope. Despite this growing percentage of Michigan students, Hope experienced a decrease in enrollment in 2015-16, although still far above the 2013 projected enrollment. The percentage of Illinois high school graduates enrolled at Hope decreased slightly in 2015-16, breaking a streak of four consecutive years of increases. A continued decrease in Hope's enrollment is anticipated for 2016-17.

While the model's projection of Hope enrollment is not an accurate prediction of the future, we know that the WICHE report's projection of the number of high school graduates will be quite accurate, since it is based on the present number of children of pre-college age. This means that if Hope is to maintain its enrollment level, the college will need to continue increasing its yield from a shrinking pool of Michigan and Illinois high school graduates and increase the percent of its student body from other states whose numbers of graduates are not decreasing as rapidly as is occurring in those two states.