

**Estimated Statewide Economic Impact
of
Potential Increases in Community College Tuition and Fees
FY 2003 – FY 2011
Associated with Restricted Government Support**

Barbara Ash
Research Director
MACC

June 8, 2004

The report by the Joint Community College/USM workgroup to the Maryland General Assembly (JCR Report) addressed projected enrollment increases and capacity issues in Maryland higher education over the coming decade. The report included estimates of potential increases in tuition and fees per student if state funding does not increase with inflation and enrollment growth. The report also estimated tuition and fees per student given increases in all revenue sources to meet and maintain competitiveness versus peers (derived from calculations for community college formula funding using the 4-year public colleges and university peer funding guidelines). This analysis describes the possible economic impact to Maryland from reduced enrollments at community colleges resulting from the increased tuition and fee expenses associated with different forecast scenarios.

Tuition and Fee Projections

Almost all operating revenues for public higher education institutions come from State and local government support, or from tuition and fees. The workgroup assumed that all sectors will have to respond to increased funding needs to meet the higher demand in post secondary education in the next decade. The increases in tuition and fees per student in Table 4A of the JCR Report are based on forecast inflation (3.4% annually) for the coming years using MHEC projected enrollments; therefore, under this scenario, the inflation adjusted tuition increase is 0% for each year and cumulatively. We assumed that students and parents would have to expect to cover at least the inflationary increases. Table 4B shows estimated increases in tuition and fees if parents and students bear a proportionate burden to support the competitiveness and quality of Maryland's public higher education institutions with the workgroup's projected enrollments. This would mean that the real (after inflation) increase in community colleges' tuition and fees would be about 3.9% each year (in addition to the 3.4% inflation rate).

The Report also includes an appendix which projects the tuition and fees per student for each model if state funding remains constant over the next decade. With the MHEC projections and inflation increases, tuition and fees would need to increase an inflation-adjusted 2.6% per year at community colleges under this scenario (Appendix 2, Table A). The workgroup projections combined with targeted revenue increases for competitiveness and quality could result in tuitions and fees increasing 8.6% per year over and above the 3.4% annual inflation (Appendix 2, Table B). Obviously the impact of State funding on keeping tuition and fees affordable is quite significant. The difference between State funding growing or not in proportion to other community college revenue sources can mean additional increases in tuition from 2.6% up to 8.6%, after inflation.

Tuition Elasticity of Enrollment Demand

The workgroup decided to focus on the forecasts in terms of demand for higher education without complicating the analysis with labor market changes, dampening affects of tuition and funding considerations, or other “supply” factors. (This is consistent with the enrollment projection methodology of the National Center for Education Statistics, which “do[es] not take into account such factors as the cost of a college education, the economic value of education and the impact of distance learning due to technological changes.” (NCES, 2003)) Although the workgroup did not include any findings in the final report, we discussed the affordability of the tuition increases in the context of number of students that might be “priced out” of the education market.

A review of papers on the price elasticity of demand for higher education tuition discovered ranges in estimates from -0.24% to -1.783%. This means that increasing tuition costs by 10% can reduce enrollments by between 2.4% and 17.83%. Campbell and Siegel (1967) found a tuition elasticity of demand of -0.4404% for higher education. Based on Campbell and Seigel’s study, Hight (1970) estimated price elasticities of -1.058% for public institutions. In 1975, Hight re-estimated the tuition elasticity of demand at -1.783% for public institutions for selected years between 1927 and 1955 and for 1957 through 1972; this study included the affect of tuition at alternative institutions. Shim (1990) considered additional variables (including unemployment and the affect of the Viet Nam War) to come up with a figure of -.2354% for higher education. Building on these previous studies, Yung Yang (1998) estimated a tuition elasticity of demand of -0.797% for public institutions for 1965-1995. Bishop (1977) determined that students of moderate abilities and from high and middle income families had a price elasticity of -0.29%, while students with less ability and from lower income families had more negative elasticities of demand (that is these students were even less likely to enroll in college when tuition costs go up). Park and Lempert (1998) developed an estimate, from data compiled by Kane of the National Bureau of Economic Research, of -.047% for the impact of tuition increases on enrollment for public two-year colleges; but they noted “there is little agreement about the value of price elasticities within the education community; values ranging from -0.74 to +0.41 have been cited....”

A conservative choice would be to accept a middle of the road estimate of -0.797% developed by Yung Yang for public institutions in general. Virtually all the studies cited above (and several others as well – Corazzini et al (1972), Hoenack (1967), Radner and Miller (1970), Kohn et al (1974)) show that private colleges and universities and even public 4-year institutions have less extreme price elasticities of demand for tuition than community colleges, i.e. the enrollments at 4-year colleges and universities do not decline as much with an equivalent percentage increase in tuition expenses versus the 2-year institutions.

Economic Impact of a Community College Student

A study by CC Benefits, Inc, "The Socioeconomic Benefits Generated by 16 Community Colleges in Maryland," released in June 2003 estimated that each Community College annualized Credit Hour Equivalent (CHE) provided a total contribution of \$5,106 per year to Maryland due to higher earnings (\$4,499) and to lower social costs (\$607). CC Benefits annualized CHE is essentially the same as a Full Time Equivalent (FTE) student: a 30 hour CHE translates to an annual FTE with 30 credit hours. The CC Benefits study included both credit and non-credit students, and the estimated economic impact is based on the integration of the characteristics of both. This probably results in a more conservative estimate than if the economic impact of credit students alone were considered.

Economic Impact of FTE Reductions

The chart below shows the reduction in FTE enrollment using the 0.797% tuition price elasticity of demand based on the projected inflation adjusted tuition and fee increases for FY 2011 and the cumulative effect for FY 2004 through FY 2011. The chart also shows the foregone increases in higher earnings, social savings (which have been titled lost earnings and social costs) and the total of these lost economic benefits associated with the lower enrollment.

If state funding does not keep pace with inflation, the results for Appendix 2, Table A suggest that the projected growth in FTE enrollment may be limited by students' desire and ability to respond to the tuition increases. If State funding does not keep up with inflation it could cost the state as much as \$101 million in FY 2011, or \$422 million cumulatively. The State funding amount "saved" by pricing almost 20,000 students out of community colleges (at \$2,314 per FTE, which includes grants and fringe benefits) would be about \$46 million in FY 2011 or about \$191 million over the period. The net cost to the State is \$231 million cumulatively.

Under the assumptions for Table 4A (State funding increases with inflation and headcount enrollment grows 21%) the economic impact is nil. This is because I have assumed that students and parents are willing to cover tuition and fee increases at least up to the level of inflation. Although this may not be strictly true, in our State's current fiscal situation it is reasonable to expect that all sectors must be willing to bear a portion of the burden of economic stimulus.

The economic impact estimates for Table 4B show potential FTE decreases related to tuition and fee increases to provide better quality, more competitive educational experiences. The background revenue projections assume that each revenue source contributes proportionately to the quality improvements at the community colleges. Obviously if state and local funding bear a greater part of the burden, the effect on enrollment and, thus, the economic impact would be mitigated. The dampening affect of tuition increases projected for the target made with workgroup projections suggests that

enrollment growth could be cut in half. This could cost the state \$158 million in FY 2011 and \$643 million over the decade in lost earnings and social savings increases. Even taking into account the reduction in State funding from fewer students attending community colleges, there remains a total net cost to Maryland of \$189 million through FY 2011.

The chart shows the effect and the economic impact under the assumptions for Appendix 2, Table B. This represents the “worst case” with demand for community colleges increasing 34% and State funding remaining constant at \$2,314 per FTE. The impact on enrollment is estimated to nearly eliminate FTEs enrollment in community colleges in 2011, and reduce total cumulative matriculation through 2011 by about 40%. The net cost is calculated to be \$869 million after adjusting for the State funding “saved” by fewer students attending. Although this seems unrealistic that State-funded FTE enrollment at community colleges could be virtually wiped out, it is not inconceivable that there is some level of tuition increases which will make community colleges inaccessible for our many of constituents. And if a person can not afford to attend their local community college, then there is probably no higher education institution which they can afford.

Economic Impact of FTE Reductions From Projected Tuition and Fees Increases			
		FY 2011	Cumulative FY 2004-11
Appendix 2, Table A: State Funding Remains Constant and Headcount Enrollment Grows 21%			
Base Model, MHEC Projections (Tuition increases 2.6% annually after inflation)	FTE Reduction	-19,753	-82,710
		\$ millions	\$ millions
	Lost Earnings	-\$89	-\$372
	Social Costs	-\$12	-\$50
	Total Economic Costs	-\$101	-\$422
	State Funding Reduction	\$46	\$191
	Net Cost	-\$55	-\$231
Appendix 2, Table B: State Funding Remains Constant and Headcount Enrollment Grows 34%			
Base Model, Demand Projections (Tuition increases 8.6% annually after inflation)	FTE Reduction	-80,293	-311,104
		\$ millions	\$ millions
	Lost Earnings	-\$361	-\$1,400
	Social Costs	-\$49	-\$189
	Total Economic Costs	-\$410	-\$1,589
	State Funding Reduction	196	720
	Net Cost	-\$214	-\$869
Table 4A: State Funding Increases with Inflation and Headcount Enrollment Grows 21%			
Target Model, Demand Projections (Tuition remains constant excluding inflation)	FTE Reduction	0	0
	Lost Earnings		
	Social Costs		
	Total Costs	\$0	\$0
Table 4B: State Funding Increases to Maintain Competitiveness and Headcount Enrollment Grows 34%			
Target Model, Demand Projections (Tuition increases 3.9% annually after inflation)	FTE Reduction	-30,861	-125,918
		\$ millions	\$ millions
	Lost Earnings	-\$139	-\$567
	Social Costs	-\$19	-\$768
	Total Economic Costs	-\$158	-\$643
	State Funding Reduction	\$126	\$454
	Net Cost	-\$32	-\$189

Note: The Economic Impact for Table 4A (Tuition Costs and State Funding Increase with Inflation and Headcount Enrollment Grows 21%) is estimated to equal zero since parents and students are assumed to be willing to pay at least inflationary increases

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6/7/2005
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Research Director
MACC