Higher Education and the New Economy

James S. Fairweather
Professor of Educational Administration
College of Education, Educational Administration
Michigan State University

With assistance from

Jennifer P. Hodges
Graduate Research Associate
College of Education, Educational Administration
Michigan State University

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Section I
Framing the Questions for Policymakers

When Democratic Governor Jennifer M. Granholm and Lieutenant Governor John D. Cherry took office in January 2003, they faced a $1 billion budget deficit and inherited the task of redefining the future of the state's economy. For all the unknowns that lay ahead of them and the people of Michigan, the one certainty is that the path we have collectively followed with unparalleled prosperity for nearly a century – an economy based upon manufacturing generally and the automotive industry specifically – is not the path to future prosperity.

Convinced that the greatest opportunities for economic growth depend upon the state having an increasingly educated workforce, Governor Granholm established by executive order the Lieutenant Governor's Commission on Higher Education and Economic Growth in June 2004. The charge to the Cherry Commission was to make recommendations in three related areas: how to build a dynamic, highly skilled workforce that can compete and succeed in a 21st Century economy; how to double the percentage of citizens who attain post-secondary degrees or credentials that link them to success in the state's new economy; and how to improve the alignment of Michigan's institutions of higher education with emerging employment opportunities in the state.

The implications of that charge and the eventual recommendations of the Cherry Commission are potentially highly significant and deserve urgent attention and discussion. Some of the important assumptions of the commission's charge and recommendations are based on research on the benefits of post-secondary participation; others are less so. And totally absent from the charge and the recommendations is any discussion of how to pay the substantial costs involved in upgrading the skills of the state's workforce by increasing the percentage of citizens with post-secondary degrees or certificates.

Recommendations of the Cherry Commission

The Cherry Commission has made ambitious recommendations to state policymakers about the role of higher education – broadly defined to mean education and training beyond high school – in ensuring a healthy state economy. These recommendations overreach in some important ways, but they set the agenda for transforming Michigan from a manufacturing to a knowledge economy.

To increase educational attainment in the State of Michigan with the expectation of improved state economic vitality and better lives for Michigan citizens, the Cherry Commission recommended several changes to current state and academic institution policy. The general goals set by the commission are to:

1. Double the percentage of residents who attain college or university degrees or other credentials that link them to success in Michigan's new economy

2. Improve the alignment of Michigan's institutions of higher education with emerging employment opportunities in the state's economy, and
3. Build a dynamic workforce of employees who have the talents and skills needed for success in the twenty-first century.[1]

Among the 19 specific recommendations the commission made, the most important for this report are to:

- Make Higher Education Universal
- Improve Institutional Completion Measures
- Expand Access to Baccalaureate Institutions and Degrees
- Increase the Number of Post baccalaureate Professionals
- Expand Opportunities for Early College Achievement
- Target Adults Seeking to Complete Postsecondary Credentials
- Align Postsecondary Education with Economic Needs and Opportunities
- Expand the Role of Higher Education in Community Development.

Presented as a blueprint for the future of higher education in the state (and the economy for that matter), the Commission report relies on presumed state need as its standard for selecting and making recommendations. Equally important, the implications of the Commission's recommendations for cost and for who pays are implicit, unacknowledged, even ignored. What will it cost to ensure universal access to colleges and universities? What are the organizational and cost implications for the ways colleges and universities operate? Can the Commission's recommendations be achieved simultaneously or are some of them at odds with others? Do recommendations for degree completion rates and increased access apply equally to all 2- and 4-year institutions, or are the implications quite different for the distinct types of colleges and universities in the state? Can the state afford to subsidize efforts to increase access and degree completion, or will the costs increasingly be passed on to parents, students, and institutions?

The purpose of this report is to provide policy makers and the general public with basic information about both the benefits and the costs of higher education. Some of this information illuminates the difference that postsecondary education makes to the prosperity of a state and its citizens. Also contained in this report are lesser known facts about the costs of higher education and who pays for it. Policy makers and the public need to understand both the benefits and the costs of higher education if they are to make informed decisions about whether and how to implement the Cherry Commission recommendations.

This report begins by evaluating the current evidence on the benefits of higher education and how Michigan would benefit from increased participation in higher education. Next we provide information on what (and whom) it costs to provide higher education in Michigan. The report concludes by considering the costs of increased participation to the state, the student and the institutions, what tradeoffs there might be, some realistic expectations might be, and what policies and practices would have to change to make increased participation work.

Two trends in the data presented here are unmistakable in their clarity and essential to any discussion of Michigan's future. The first trend concerns the benefits of higher education. Simply put, more education makes a difference. The individual benefits associated with post-secondary education cut across all aspects of quality of life, but the economic benefit is

compelling. College graduates earn more money, and the difference in income between those with post-secondary education and those without it has continued to widen because the earning power of those without it has shrunk consistently over the past 30 years. Once a desirable advantage in employment, post-secondary education has increasingly become a prerequisite to stable employment and a middle-class income. The data also suggest that what is good for the individual is also good for the state: states with higher rates of college graduates are more prosperous than those with lower rates.

The second unmistakable trend in the data presented in this report concerns the costs of higher education. Although it is true that the price of college has consistently risen faster than inflation, the more important trend is that the cost of college has fundamentally shifted from the state to the student. Thirty years ago state appropriations accounted for 75 percent of the public university budget; today that portion is less than half. Furthermore, state and federal financial aid to students has failed to keep up with inflation, let alone tuition, meaning that students and families have had to shoulder more of the costs of college than ever before.

The convergence of these two trends – the increasing importance of postsecondary education with the shift in financing that education in public institutions from the state to the individual – is arguably the greatest challenge facing Michigan and its leaders. The policy options available to state officials in response to this challenge will be complicated by the voluntary nature of post-secondary participation, the relatively autonomous status of Michigan's public universities, and the inherent difficulty of expanding the capacity of higher education in Michigan without diminishing its quality.

The only certainty is that Michigan's current path – of relatively low post-secondary participation and relatively low state support for those who pursue it – is a dead end. This report is intended to help us all chart a new course to a better future.

Section II
Defining the Costs and Benefits of Higher Education

Economists typically classify the costs and benefits of education beyond high school, whether for additional training or re-training, a 2- or 4-year degree, or an advanced degree, as either *private* or *public*. *Private benefits* accrue largely to the individual and his or her family, while *public benefits* accrue to localities, the state and the nation, above and beyond private benefits. Private and public benefits are not as distinct as imagined, though. Some public benefits seem simply a sum of private benefits. For example, increased average income and greater chances of employment are private benefits – but both are related to lower state and local unemployment rates and higher tax revenues, which are public benefits.[1] Other private benefits are less directly related to public benefits – a better educated citizenry is related to higher voting and lower crime rates, for example. Similarly, *private costs* are what it costs an individual and/or his or her family to attend a college or university; *public costs* consist of the investments made by the state and U.S. governments in Michigan colleges and universities.

One way to make sense of costs and benefits, whether public or private, is to consider *return on investment*. *Private return on investment in higher education* refers to the net benefits an individual receives from attaining some form of college or university education after subtracting the private costs (including foregone income). *Public return on investment* refers to the net benefits to local communities, regions, the state and the nation from investing in higher education beyond individual or private returns – that is, subtracting both the costs of public investment and the returns to private individuals from the public benefits. A third type of return, called *social returns*, is the sum of private and public returns – benefits minus costs – from investing in higher education.[2]

Return on investment is crucial to individuals and to state governments because it estimates whether an additional dollar invested in higher education achieves the desired benefits *in comparison to other types of investments*. For a high school graduate and her or his parents, relevant questions about benefits, costs, and return on investment include:

- What will it cost the student (and her or his family) to go to college (*cost*)?
- What benefits will accrue to the student (and family) from attending college (*benefits*)?
- Is the career earning payoff from a 4-year degree relative to a 2-year credential worth the cost? Are the private benefits of a 4-year degree from a private liberal arts college worth the additional cost relative to investing in a public institution (*return on investment*)?

For the State of Michigan, relevant questions about the Cherry Commission recommendations include:

- What will it cost the state to expand access to higher education (*cost*)?
- Will the proposed strategies achieve the intended objectives (*benefits*)?
- Are the benefits worth the costs? Could the same objectives be attained more cheaply and efficiently by investing elsewhere other than higher education (*return on investment*)?

All of these terms are difficult to measure, some more than others. Non-financial or non-economic benefits, whether private or public, are especially difficult to judge. Of all inputs and outcomes, the easiest to measure are the dollar cost of investment by the individual or the state and the private return in annual salary and lifelong earnings private benefits. Not surprisingly, the measures of private cost and benefit of higher education are the most commonly cited and agreed upon in the literature. Less agreement exists on how to measure other costs and benefits, especially such public benefits as having an educated citizenry.[3]

What are the benefits of higher education?

An extensive body of research exists on the benefits of higher education. Two seminal works led to the formal study of the benefits of higher education in the United States. Feldman & Newcombe[4] summarized the empirical sociological and psychological literature on the impact of college on students, especially the benefits of college to students' personal development. Later, Howard Bowen's *Investment in Learning* portrayed the benefits of higher education as part of a production process that affects *both* individual students *and* the larger public, and that includes economic and well as social and psychological benefits. Bowen[5] viewed the impact of higher education as a hierarchical production process initiated by investments and other resources, which led to the betterment of students *(private* benefits) and society (*public* benefits). His work led to a variety of efforts to define and measure the benefits of higher education more precisely. A recent example of this effort, from the Institute for Higher Education Policy, incorporates U.S. Census and Department of Labor Statistics indicators into a grid of benefits broken into *private* and *public*, *social* and *economic*.[6]

Table 1
A Classification of Higher Education Benefits

	Public	Private
Social	Reduced crime rates Increased charitable giving/ community service Increased quality of civic life Social cohesion/ appreciation of diversity Improved ability to adapt to and use technology	Improved health/life expectancy Improved quality of life for offspring Better consumer decision making Increased personal status More hobbies, leisure activities
Economics	Increased tax revenues Greater productivity Increased consumption Increased workforce flexibility Decreased reliance on government financial support	Higher salaries and benefits Employment Higher savings levels Improved working conditions Personal/professional mobility

Source: Institute for Higher Education Policy, 2005, p. 4.

This framework is useful in understanding both the *private benefits* of higher education and three types of *public benefits*: non-economic benefits, traditional economic benefits, and the more speculative economic development benefits.

Private Benefits

Social: It is not the purpose of this report to detail the long list of research results gathered during the past 50 years about the impact of college on the personal development of individual students. Pascarella & Terenzini's two volumes on the topic[7] alone add up to more than 1500 pages on the subject. In brief, the evidence about the benefits to students of going to college is substantial, in some cases overwhelming. Bowen classified these effects as cognitive, affective, and practical in nature.[8] Generally these categories are related to learning, personality development, and skills development. Pascarella and Terenzini expanded these categories substantially. Their review of research found that attending college enhances cognitive development as well as intellectual growth and maturity. It results in measurable improvements in substantive knowledge, and in quantitative and verbal competencies. Going to college is related to the growth and maturity of personality and to moral character development. These effects are observable during the college years and tend to be long lasting. College graduates show increased satisfaction with and enjoyment from life. Going to college increases the likelihood that an individual will grow up emotionally, prepare for a successful career, find happiness, and contribute positively to society.

Economic: The claims made in the Cherry Commission Report about the economic benefits to individuals from attending college are widely supported in the literature. Carr & Roessner call the average earnings differences by level of educational attainment the "education premium." Using U.S. Census data, the Institute for Higher Education Policy reported that in 2003 the national average income of workers over the age of 25 with a college degree was about $23,000 higher than for those with a high school degree.[9] Individuals with an advanced degree earned about $45,000 more than those with a high school degree; those with at least some college earned about $8,000 more than high school graduates in 2003. In percentage terms a bachelor's recipient made about 62% more than a high school graduate in 2003, a master's degree holder about 200% more, and a Ph.D. or professional degree holder about 300% more.[10] Table 2 shows that the education premium for Michigan is equal to or greater than that for the nation as a whole.

TABLE 2

Average Total Personal Income of U.S. and Michigan Residents Age 25 and Older, by Educational Attainment, 2003

	High School Diploma	Some College	Bachelor's Degree	Advanced Degree
U.S. Average	$25,053	$32,470	$48,417	$70,851
Michigan	$24,210	$34,492	$47,558	$72,969

Source: Institute for Higher Education Policy, 2005, pp. 24-25.

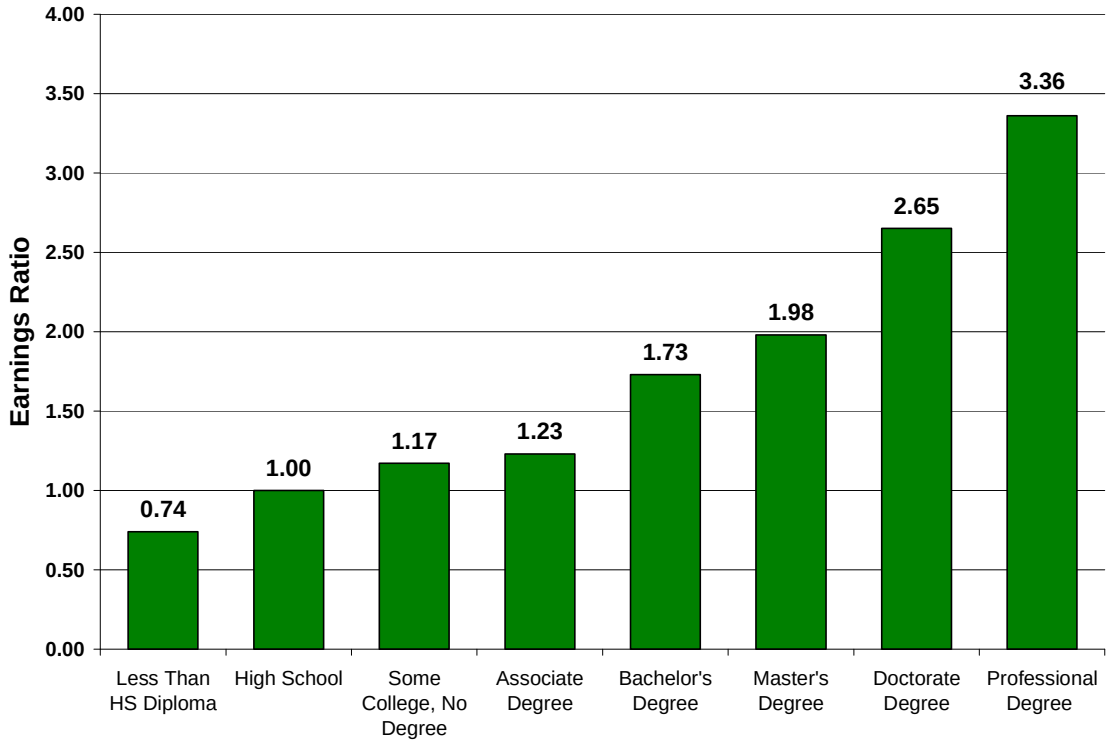
U.S. Census data show that the education premium holds for each racial and ethnic group. This premium also holds true regardless of gender.[11] Across all groups the education premium is

increasing over time; that is, the value of the high school degree is declining relative to the value of a college degree.[12]

The education premium also persists over a lifetime.[13] U.S. Census data show (Figure 1) that a bachelor's degree holder makes about 75% more over a lifetime than a high school graduate. The education premium increases to a maximum of more than 300% for a holder of a professional degree.

FIGURE 1

Expected Lifetime Earnings Relative to High School Graduates, by Education Level, 2003.



Source: Day & Newburger, 2002. Reported in: College Board, 2004a, p. 11.

Over a lifetime, a bachelor's degree recipient will make $1 million more than a high school graduate.[14] Moreover, this education premium exists *even after taking into account foregone income and monies students borrowed to attend college*. According to the College Board, the typical college graduate who enrolled at age 18 has, by the age of 33, earned enough more than the average high school graduate to compensate for both tuition and fees at the average public 4-

year institution and earnings foregone during the college years.[15] Students attending more expensive private colleges exceed this break-even point by age 40.

Another way to measure the private benefits of obtaining a college degree is to look at employment data. In 2004 the national unemployment rate for high school graduates was 5.9%. For college graduates the unemployment rate was 3%; for graduate degree holders 2.6%.[16] In Michigan the high school graduate unemployment rate in 2004 was over 10%. For college graduates and professional degree holders the unemployment rate was 2.9% and 3.8%, respectively. These national trends hold true across racial and ethnic groups.[17] Even when higher educational attainment does not result in higher earnings, especially in the short term, it results in more job security and stability of income.[18]

Although these data do not demonstrate cause and effect – just ask the taxi cab driver holding a Ph.D. in English whether having an advanced degree guarantees a job – the evidence seems incontrovertible that the relative value of a high school degree is declining relentlessly, and that some type of college or university credential has replaced the high school diploma as the entry level degree for access to the desirable part of the workforce.

Public Benefits

Social: The public social benefits of higher education, although not easy to itemize or measure in full, are evidenced by many indicators. Broadly speaking, the public social benefits of a college education include the advancement of knowledge, preservation of culture, support for and enjoyment of the arts and culture, discovery and encouragement of talent, and the advancement of social welfare.[19] To this list we might add the encouragement of attitudes toward lifelong learning – a mainstay of the information economy – and equality of opportunity.[20] More specifically, specialized health care throughout the state exists in part because of the medical schools at the state's universities.

Beyond these broad, statewide advantages, any resident in Michigan can describe some of the public social benefits of living near a college or university. Concerts that otherwise would bypass a city the size of Kalamazoo are performed because of the presence of Western Michigan University and Kalamazoo College. Hundreds of thousands of people attend football games at the University of Michigan. Thousands of others follow the exploits of the Michigan State University Spartan basketball team. Many, perhaps most state residents follow the athletic accomplishments of a favorite college team. Thousands of children enjoy special gardens designed especially for them on the campus of Michigan State University. Colleges and universities in the Upper Peninsula help preserve the special culture of the UP by offering and supporting cultural and sporting events. Smaller 4-year colleges and universities and community colleges provide facilities for important local political and cultural activities. Virtual programs provide access to individuals in remote areas who desire to experience learning for its own sake or to obtain a credential for work.

Beyond the physical presence of colleges and universities, the presence of college graduates in our communities and our state provides public social benefits. For example, U.S. Census data reveal that individuals with a college degree are almost twice as likely to volunteer their time to

assist others.[21] In addition, the higher the educational attainment, the more likely a citizen is to vote.[22]

To these public social benefits we can also add the aggregate of other private social benefits. Educational attainment is positively related to self-described health, thereby reducing public health costs and increasing the overall well-being of the population. Both nationally and in Michigan, about 90% of college degree holders report having good health. The comparable percentage for high school graduates is about 80%. College educated individuals are less likely to smoke than high school graduates, which also can affect the health and well-being of society.[23]

An important part of both changing and preserving culture is the generational effects of college going. The College Board reports that the young children of college graduates display higher levels of school readiness indicators than children of non-college graduates. After they graduate from high school, students whose parents went to college are significantly more likely than those with similar incomes whose parents do not have a college education to go to colleges themselves.[24] In other words, increasing the college participation of the current young generation in Michigan is likely to result in higher participation rates for the next generation as well.

In sum, although the evidence is based on correlations rather than cause-and-effect analyses, it seems clear that ultimately the state accrues many public social benefits from having a highly educated citizenry.

Traditional Economic Benefits

There are three ways in which the state of Michigan benefits economically from increased participation in higher education: higher tax revenues, lower social welfare costs, and economic growth.

Consider tax revenues. According to the College Board, the average college graduate working full-time pays more than twice as much in federal income taxes and about 78 percent more in total federal, state, and local taxes than the average high school graduate.[25] Holders of a professional degree paid on average about $20,000 more in taxes in 2003 than workers with a high school degree.[26] This finding does not take into account state tax rates or local and regional economic conditions.

Employees of colleges and universities also contribute tax revenues. The National Association of State Universities and Land-Grant Colleges (NASULGC) estimates that in 1999 the average tax revenue contributed by college and university employees in a state college or land-grant university was $60 million.[27]

These increased tax revenues paid by college graduates help support state social welfare programs. At the same time, college degree holders are less likely to be on public assistance than high school degree holders of working age.[28] The College Board estimates that the government spends between $800 and $2,700 less per year on social programs for individual 30-year old college graduates than for high school graduates of the same age, gender, and race/ethnicity.[29]

Now consider the economic activity and growth associated with higher education. NASULGC estimates that its 214 member institutions return $5 in economic growth for every $1 invested in them by state and federal governments.[30] Leslie & Brinkman estimate that each dollar invested in college operating expenses results in an additional $1.50 to $1.60 in local business volume.[31] NASULGC estimates that for every $100 spent by a member institution, its employees, students, and visitors spend an additional $138, usually in local businesses. These results strongly indicate that the economic return to the state from investing in public higher education always exceeds the original investment, sometimes dramatically so.

Colleges and universities tend to generate jobs beyond their campuses. Both Leslie & Brinkman and NASULGC estimate that every job on campus generates about 1.6 jobs off campus. Many colleges and universities also attract federal research dollars and out-of-state students who pay higher tuitions that contribute to local and state economies; neither of these revenue sources would exist without the academic institutions.

In a study of the economic impact of Michigan's public universities, Carr & Roessner found that for each dollar of state support, the public universities in Michigan collectively generated $26 of economic impact."[32] The education premium – that is, increased income attributable to the level of educational attainment – accounts for 2/3 of that impact. In addition, every dollar of operating costs (only part of which was contributed by the state) in Michigan public colleges and universities generated an additional $5.50 to $6.50 to the state and local economies. Carr & Roessner estimate that the state's investment of $1.5 billion in 1999 had a net impact of $39 billion, representing 12.6 percent of Michigan's gross product for that year.[33] This estimated impact does not include the contributions made by community colleges and vocational-technical schools.

Economic Development and Revitalization

Michigan derives great benefit from its higher education institutions, and increased participation would likely increase that benefit. The evidence about the likelihood that increased private and public investment in higher education, especially in *degree production*, will stimulate economic development and revitalize the state economy, is intriguing but much less conclusive than the evidence cited above.

Research led by Glaeser and others found positive correlations between the overall human capital (that is, the average educational attainment level) of cities and regions with future income growth.[34] Glaeser & Saiz compare Detroit and Boston to make their point:

> In 1980 each city looked similar—with shuttered manufacturing plants, declining population, declining real estate values, and unpleasant winter and spring weather. However, Boston has enjoyed resurgence and Detroit has not. A large reason for this resurgence [according to Glaeser & Saiz] is that Boston focused on investing in industries and programs that were complementary to the large stock of educated people in the area and Detroit did not. In addition, more highly educated people are more able to adapt to changing technologies and move into new employment (Boston) than a generally less educated workforce (Detroit).[35]

Similarly, data from the Bureau of Labor Statistics shows positive correlations between job creation, technical improvements in the economy, and a more highly skilled and educated workforce.[36] These findings are similar to the ones cited by the Cherry Commission indicating the positive correlation between state educational levels and economic vitality.

Other research, though, offers an alternative explanation of the link between higher education and economic prosperity. For example, Bound et al found little evidence that increased college degree production in any state leads to an increased number of college graduates that stay in the state.[37] To Bound, this finding suggests that it might not be necessary for a state to invest heavily in higher education for the purposes of economic development if it can import the talent from elsewhere.[38]

In other words, Bound could not find evidence that increased investment in higher education *led to economic development*. It could have just as easily *resulted from* having the economic growth in place first. Thus, investments made by Massachusetts in the high technology Route 128 corridor and in the research engaged in by higher education institutions involved in Route 128 may have led to the economic revitalization that attracted a more highly skilled workforce to the Boston area.

In all likelihood, the economic renaissance in Boston is a function of both patterns. Rizzo concludes that the research evidence for assertions that public support for higher education increases the human capital stock in the area may be questionable. He further suggests that state monies might be better spent by creating research corridors and business environments that attract talented workers to their areas rather than trying to use merit scholarships and institutional aid in the hopes that talented students will remain after graduation.[39] Rizzo argues that increased investment in higher education at least should be accompanied by other state policies to promote economic development and revitalization.[40]

The work of Bound and Rizzo notwithstanding, the correlation evidence suggests that increased investment in higher education is related to economic development. Leslie & Brinkman found that 15-20% of national economic growth is a result of educational attainment.[41] There is little question that university research, industry-university partnerships, outreach programs such as agricultural extension, and adult and continuing education programs stimulate economic development.[42]

In sum, the economic benefits to individuals and to the state from public subsidies for higher education are unquestionable. Less clear is the marginal impact of increased investment in higher education—especially investment focused on increased degree production—on transforming the economy from a traditional manufacturing base to one centered on technology and information.

Section III
What – and Whom – It Will Cost to Increase Higher Education Participation

If Michigan wants to increase the participation of its citizens in higher education, then its leaders must understand the factors influencing the decisions of students whether to attend a college or university. This chapter examines national trends in the costs of higher education as background for a detailed look at costs in Michigan. The focus is primarily on the implications of these findings for state policymakers. However, the implications for parents and students are also reviewed because much of the policy debate about costs and prices in higher education is driven by legislative response to concerns raised by parents and their children. The interrelationship between state policy makers and parents and students is important because ultimately the decision to attend college is voluntary.

Cost? Price? Affordability? Making Sense of Cost Terminology

Even the economists, state policymakers and university leaders on the National Commission on the Cost of Higher Education, which issued *Straight Talk about College Costs and Prices* in 1998, found it difficult to decipher the various terms used to describe college costs. This report will offer and use definitions that seem accessible to all readers, not just technical experts.

Cost simply refers to the money spent to produce or purchase a good or a service. Unfortunately, every constituency in higher education bears a "cost" in this sense. A state government pays money to help its public institutions operate. The federal government allocates monies to support student financial aid and research programs. Colleges and universities spend money to operate and to produce graduates, provide services and generate research results. Most obviously, students and often their parents spend money to attend a college or university. More precise terms, following the approach used by the Institute for Higher Education Policy,[43] are needed to differentiate these multiple meanings of cost.

In this report, **appropriations** refers to the money spent by a state to support the operation of public colleges and universities. Typically, states break appropriations into two categories: general appropriations and capital appropriations. The former are the annual or biannual expenditures that go to a public college or university as part of its general operating budget. The latter monies, not provided on a regular basis or in predictable amounts, are allocated to colleges and universities to build new facilities or make major improvements to existing ones.

Appropriations also refer to money from the federal government for higher education, but these federal dollars are not for general operations. Instead, federal monies account for the majority of student financial aid as well as for about 60 percent of all research and development conducted by colleges and universities.[44]

Expenditures are the monies spent by colleges and universities to produce graduates and research, and to provide public services. The categories of expenditures tracked by colleges and universities are extensive and often inconsistent. At a basic level, college expenditures can be divided into *Educational and General Expenditures* (E&G), which cover the costs of teaching,

research and public service, and the administrative and other activities that support those functions. The category *all other expenditures* covers everything else, from athletics to hospitals to auxiliary services.[45] A more comprehensive list of expenditure categories better describes where the money goes:

- *Instruction* includes faculty salaries, supplies and support personnel. The costs of instruction vary by student level (undergraduate or graduate), academic discipline (laboratory/no laboratory) and class size.
- *Research* includes the monies spent seeking research funding as well as of conducting research.
- *Public Service* covers extension services and community development.
- *Academic Support* includes the administrative expenses related to academic activities.
- *Student Services* includes dormitories, food, counseling services and job placement.
- *Institutional Support* covers expenditures for non-academic functions, such as finance and budgeting.
- *Operations and Plant Maintenance.*
- *Scholarships and Fellowships* refers to student financial aid provided by the institution.
- *Mandatory Transfers* are the costs associated with debt payments.
- *Auxiliary Expenses* refer to any other expenditures.[46]

Current-fund expenditures per FTE student is the ratio of all operating expenditures per full-time equivalent student (FTE).[47] This ratio is an estimate of the annual cost of educating the equivalent of a full-time student. The number of students carrying less than full course loads is significant on every campus, but varies widely across institutions. Calculating the number of full-time equivalent students at an institution allows for more accurate comparisons.

Price refers to what a student pays to attend a college or university. Price typically includes the cost of *tuition and fees*; for residential students, price also includes *room and board*. The full price to a student would also include the cost of books, laboratory and other special fees,[48] but this report excludes these costs from the estimate of price because such data are not always available across institutions and states.

Tuition at public universities varies by in-state and out-of-state. For community colleges, tuition varies by in-district, in-state, and out-of-state. For public institutions, this report uses the in-state and in-district costs to attend a public 4-year and 2-year institution, respectively. Tuition and fees at private universities are purportedly the same regardless of the student's state of residence.

In practice, college and university prices vary somewhat like those of airline seats and automobiles: the person sitting next to you on an airplane may have paid a different price than you even if the published rate is the same. Neighbors may have paid very different prices for cars that are otherwise identical. The *sticker price* of attending college is the full tuition and fee rate.[49] The *net price* is what the student actually pays.[50] In essence the net price is the sticker price minus financial aid. One way of calculating net price is to subtract *grants, scholarships and fellowships* from the sticker price. According to Oliverez & Tierney, a grant is financial aid provided to a student that does not need to be repaid.[51] Grants are provided by federal and state governments, as well as by institutions themselves. Scholarships and fellowships are also provided by governments, the institutions and private foundations; these also do not have to be repaid. This form of net price only includes the type of financial aid that does not incur student

debt. The College Board adds education tax benefits to grants received when estimating net price.[52]

A second way to calculate *net price* is to subtract *all* forms of financial aid from the sticker price. The intent here is to estimate the cost of attending college during the time of attendance without regard to any debt that may accrue as a result of financial aid. Types of financial aid that need to be repaid include *subsidized loans*, for which interest does not accrue while the student is in school, and *non-subsidized loans* that do accrue interest from the start of the loan.[53] The primary providers of loans are the federal and state governments and the institutions themselves.

The distinctions between *sticker price* and the two forms of *net price* are crucial to understand **affordability**. Affordability is defined as the ratio of price to median income. Estimates using the *sticker price* tend to show dramatically reduced affordability over time.[54] A more accurate estimate of affordability is the ratio of *net price* – what the student actually pays for going to college – to median income.[55] Not surprisingly, the estimates of affordability using net price vary substantially from estimates using sticker price. The choice, then, is whether to include additional debt in the net price. This report uses the College Board's definition of net price, which subtracts only non-debt grants and scholarships and education tax benefits from the sticker price. For comparison purposes, trends in affordability using the sticker price are also shown.

Finally, this report uses **revenues** to refer to the money that colleges and universities receive from all sources**.** According to the American Council on Education, the general sources of revenue for colleges and universities include tuition and fees, state appropriations, federal research funds, local support (primarily for community colleges), private gifts, endowment income, sales and services, and other sources.

College Costs

This section examines three issues:

- Where the money goes,
- What it costs a college or university to educate a student, and
- Where the money comes from.

Where the Money Goes

Table 3 shows the percent of total costs by expenditure category separately for public 2-year and public and private non-profit 4-year institutions, by year. For 2000-01, these data show relatively similar distributions of expenses for public and private 4-year institutions. Overall about 30% of the operating costs of 4-year institutions are spent on instruction, a little more than 10% on research. Public institutions spend more on public service than private institutions. Private institutions spend more on institutional support—in this case related to scholarships and fellowships—than public colleges and universities. These percentages mask the great variation between *types* of 4-year institution. Universities with substantial doctoral and research programs spend proportionately more on research and less on teaching than institutions whose mission is predominantly teaching. For example, in public 4-year colleges and universities the percentage of expenditures devoted to instruction ranges from a low of 25.6% in Doctoral/Research Extensive institutions (i.e., research universities) to a high of 34.7% in Bachelor's-level colleges.

In contrast, the percentage of expenditures devoted to research ranges from a low of 1.1% in Bachelor's-level colleges to a high of 16.9% in Doctoral/Research Extensive universities.[56] Not surprisingly, public 2-year colleges spend a larger proportion – almost half of all expenditures – on teaching and much less on research than 4-year institutions.

Table 3
Percentage Distribution of Expenditures, by Year, Category of Expenditure, and Type of Institution

Type of Institution/Academic Year									
	Public 2-Year			Public 4-Year			Private 4-Year		
Type of Expenditure	**1980 -1981**	**1990 -1991**	**2000 -2001**	**1980 -1981**	**1990 -1991**	**2000 -2001**	**1980 -1981**	**1990 -1991**	**2000 -2001**
Instruction	50.6	49.9	43.3	44.7	43.2	27.7	27.0	26.6	32.2
Research	0.4	0.1	0.1	9.5	11.2	12.8	8.5	7.7	11.0
Public Service	2.2	2.4	2.4	3.8	4.6	5.4	1.6	2.0	1.8
Academic Support*	22.2	24.1	8.5	19.5	21.0	7.7	8.3	8.1	8.5
Student Services	8.7	9.9	10.1	5.8	5.8	3.8	4.4	4.9	7.1
Institutional Support	NA	NA	15.2	NA	NA	7.7	10.1	10.7	13.0
Operation & Maintenance	12.0	10.7	9.4	11.5	9.1	5.8	7.7	6.4	NA
Scholarships & Fellowships	2.3	2.4	4.0	3.2	3.5	4.7	6.6	9.2	1.3
Mandatory Transfers	1.7	0.6	1.0	1.7	1.5	1.6	1.4	1.4	NA
Auxiliary Enterprises, Hospitals	NA	NA	11.6	NA	NA	22.4	27.9	25.8	22.3
Other	NA	NA	0.4	NA	NA	0.3	NA	NA	2.8

*Includes academic support, institutional support and libraries.
NA: Category not used or not reported for indicated academic year.
Source: NCES, 2004.

Of course, not all expenditures can or should be devoted to instruction. Although the public perceives that colleges and universities pay insufficient attention to undergraduate education—and they are likely correct to some extent[57] – nevertheless the largest expenditure category for each type of institution is instruction. Even in the most research-oriented of institutions, more money is spent on teaching-related activities than anything else. The trend over time, however, is

a slow decrease in the percentage of money spent on teaching and a slight increase in that spent on research.[58] The most dramatic change in Table 3 is the decrease in percentage expenditures in public 4-year institutions for instruction, declining from 44.7 percent in 1980-81 to 27.7 percent in 2000-01. More money is spent on institutional scholarships and public service than previously, too, according to Getz & Siegfried.[59]

What It Costs a College or University to Educate a Student

Percentages are useful in portraying trends, but they provide an incomplete picture of what an education costs. Table 4 shows the current-fund expenditures per FTE student in 1995-96 for private universities—the last time these data were collected for this group of colleges and universities—as well 1995-96 and 2000-01 for public 2- and 4-year colleges and universities. Comparative data from 1990-91 are also included. In 1995-96, it cost an average private 4-year institution $32,394 to educate a full-time (or equivalent) student. The comparable dollars for public 4- and 2-year institutions were $23,323 and $8,182. In constant 2000-01 dollars the current-fund expenditures per student in public 4-year institutions increased 32 percent from 1988-89 to 2000-01. The comparable increase in public 2-year colleges was 22 percent. Similar data are not available for private 4-year institutions.

TABLE 4
Current-fund Expenditures per Full-Time Student in Constant 2000-01 Dollars, by Year and Type of Institution

	Public 2-Year	Public 4-Year	Private 4-Year
1990-91	7,535	21,163	30,441
1995-96	8,182	23,323	32,394
2000-01	9,183	27,973	N/A

Source: NCES, 2004.

Even a quick glance at these costs suggests that the price of tuition and fees, even the combined price of tuition and fees plus room and board, cover only a fraction of the cost of educating a student. We return to this point below.

Where the Money Comes From

This report uses data from the National Center for Education Statistics to determine trends over time in college and university revenues.[60] Table 5 compares the distribution of revenue by category from 1980-81 through 2000-01, by source of control (public/private) and by decade.

Table 5
Percentage Distribution of Revenue, by Revenue Category, Source of Control, and Year

	Public Institutions		Private Non-Profit Institutions	
Revenue Category	**1980-81**	**2000-01**	**1980-81**	**2000-01**
Tuition & Fees	12.9	18.1	35.9	39.6
Federal Government	12.8	11.2	19.0	17.6
State Government	45.6	35.6	1.9	1.5
Local Government	3.8	4.0	0.8	0.6
Private Gifts, Grants, & Contracts	2.5	5.1	9.4	18.3
Endowment Income	0.5	0.8	5.2	-7.8*
Sales & Other Services	19.6	21.7	23.5	24.6
Other	2.4	3.7	4.2	5.7

*Endowment income varies by year. In 2000-01 endowment income decreased along with the declining stock market.
Source: NCES, 1998, 2004.

Until 2000-01 NCES combined data on public 2- and 4-year institutions into a single public institution category. Table 6 shows the distribution of revenue by public 2-year, public 4-year, and private non-profit 4-year in 2000-01 when NCES disaggregated the data. For private non-profit colleges and universities the patterns over two decades held remarkably steady with two exceptions: variation in endowment revenue resulting from changes in the stock market and a substantial increase in private gifts and contracts over time. The trend among all public institutions is striking. Most revenue categories held steady over 20 years with two major exceptions: the percentage of revenue contributed by state governments declined from 45.6 percent in 1980-81 to 35.6 percent in 2000-01, and the percent of revenue from student tuition and fees increased from 12.9 percent in 1980-81 to 18.1 percent in 2000-01. These trends, which continue today,[61] led two former college presidents, James Duderstadt from the University of Michigan-Ann Arbor and Frank Rhodes from Cornell University,[62] to conclude that the burden for supporting public higher education was shifting incrementally from state governments to students and their parents.

Table 6
Percentage Distribution of Revenue, by Revenue Category, Source of Control, and Type of Institution, 2000-01

Revenue Category	Public 2-Year	Public 4-Year	Private 4-Year
Tuition & Fees	19.5	17.8	39.6
Federal Government	5.5	12.4	17.6
State Government	44.5	33.7	1.5
Local Government	19.5	0.6	0.6
Private Gifts, Grants, & Contracts	1.2	5.9	18.3
Endowment Income	0.1	0.9	-7.8*
Sales & Other Services	6.1	25.0	24.6
Other	3.6	3.7	5.7

*Endowment income varies by year. In 2000-01 endowment decreased along with declining stock market.
Source: NCES, 2004.

The percentage of revenue by category tells only part of the story. It does not describe actual dollars in constant terms from different revenue sources. This information is important because the percentage decline in the contribution by state governments to public institutions could reflect a real reduction in dollars, or it could reflect institutional costs that outstrip the growth in state appropriations, or both.

State Appropriations

Based on annual data collected by Palmer and colleagues, Table 7 shows higher education appropriations in actual dollars across the 50 states for the fiscal years 1996, 2001, and 2006.[63]

TABLE 7

Appropriations of State Tax Funds for Operating Expenses of Higher Education, for Fiscal Years 1996, 2001, and 2006 ($000s)

States	FY 1996	FY 2001	FY 2006	10-Year Change
Alabama	957,288	1,209,494	1,390,022	45.2%
Alaska	173,506	192,183	249,773	44.4%
Arizona	697,602	892,621	974,291	39.7%
Arkansas	462,584	636,907	732,957	58.4%
California	5,190,713	8,922,931	9,627,527	85.5%
Colorado	579,879	746,478	594,649	2.5%
Connecticut	528,264	706,032	826,529	56.5%
Delaware	143,052	185,840	216,419	51.3%
Florida	1,830,917	2,761,253	3,295,233	80.0%
Georgia	1,222,912	1,600,329	2,079,359	70.0%
Hawaii	358,408	339,025	492,171	37.3%
Idaho	232,533	294,651	334,951	44.0%
Illinois	1,990,163	2,719,734	2,615,389	31.4%
Indiana	977,193	1,283,197	1,430,424	46.4%
Iowa	674,039	851,182	779,847	15.7%
Kansas	524,398	683,084	754,550	43.9%
Kentucky	678,395	1,001,625	1,207,437	78.0%
Louisiana	593,858	880,064	1,322,116	122.6%
Maine	178,952	228,917	247,943	38.6%
Maryland	818,080	1,174,619	1,253,112	53.2%
Massachusetts	769,694	1,077,226	918,127	19.3%
Michigan	**1,676,647**	**2,222,274**	**2,017,632**	**20.3%**
Minnesota	1,066,948	1,349,137	1,365,500	28.0%
Mississippi	627,107	824,717	782,540	24.8%
Missouri	722,075	959,402	856,133	18.6%
Montana	122,645	141,686	172,767	40.9%
Nebraska	385,634	492,864	542,425	40.7%
Nevada	224,143	316,611	559,616	149.7%
New Hampshire	83,185	100,666	117,172	40.9%
New Jersey	1,352,316	1,664,194	2,025,077	49.7%
New Mexico	466,662	568,295	717,978	53.9%
New York	2,914,980	3,479,112	4,361,561	49.6%
North Carolina	1,758,713	2,398,489	2,925,046	66.3%
North Dakota	151,899	185,659	215,283	41.7%
Ohio	1,666,151	2,181,991	2,111,733	26.7%
Oklahoma	550,481	789,155	836,072	51.9%
Oregon	459,851	665,786	612,820	33.3%
Pennsylvania	1,638,617	2,005,364	2,047,114	24.9%
Rhode Island	121,632	162,750	182,368	49.9%
South Carolina	679,976	880,120	767,277	12.8%
South Dakota	117,645	136,154	165,394	40.6%
Tennessee	904,158	1,045,546	1,122,978	24.2%
Texas	3,252,601	4,511,814	5,242,541	61.2%
Utah	418,297	547,506	672,468	60.8%
Vermont	54,911	67,753	82,043	49.4%
Virginia	981,031	1,629,776	1,594,605	62.5%
Washington	998,218	1,333,911	1,532,281	53.5%
West Virginia	327,174	387,432	319,122	-2.5%
Wisconsin	971,644	1,170,122	1,131,515	16.5%
Wyoming	129,401	151,523	221,012	70.8%
Totals	44,407,172	60,636,380	66,642,898	50.1%

NA = Data across years not comparable so no calculation is possible.
Source: Palmer, 2006.

When adjusted for inflation, Michigan's 20.3 percent represents a real increase of 18.1 percent over 10 years in state appropriations for public higher education, or a modest 1.8 percent per year. Over the past 5 years, real expenditures in Michigan have *declined* 2.7 percent or about -0.5 percent annually.[64]

Trends in public higher education funding vary considerably by state and by year. The percentage change between fiscal year 2002 and 2004 by state ranged from a low of -23.0% in Massachusetts to a high of 39.2 percent in Nevada (see Table 8). Michigan ranked 40th out of 50 at -7.9 percent.[65]

TABLE 8
2-Year Percentage Change in Higher Education Appropriations: FY 2002 – FY 2004 ($000s)

States	FY 2002	FY 2004	Two-Year Change (%)	States	FY 2002	FY 2004	Two-Year Change (%)
Massachusetts	$1,017,564	$783,207	-23.0%	New Jersey	$1,755,016	$1,733,511	-1.2%
Colorado	756,809	591,511	-21.8	Rhode Island	174,473	172,816	-0.9
South Carolina	834,907	664,994	-20.4	Connecticut	753,681	750,975	-0.4
Virginia	1,631,856	1,340,942	-17.8	Ohio	2,084,535	2,080,196	-0.2
Missouri	974,646	838,597	-14.0	Maine	239,002	239,110	0.0
Oregon	664,930	588,920	-11.4	North Dakota	200,401	200,430	0.0
Maryland	1,282,883	1,140,032	-11.1	North Carolina	2,442,690	2,446,604	0.2
California	9,473,522	8,561,100	-9.6	Montana	149,838	150,576	0.5
West Virginia	392,051	357,966	-8.7	Delaware	186,398	191,289	2.6
Oklahoma	796,312	731,375	-8.2	Indiana	1,321,191	1,360,318	3.0
Michigan	**2,257,732**	**2,080,228**	**-7.9**	New York	3,602,215	3,713,547	3.1
Illinois	2,904,184	2,703,279	-6.9	Mississippi	765,014	797,246	4.2
Minnesota	1,379,832	1,286,715	-6.7	Alabama	1,115,999	1,164,219	4.3
Wisconsin	1,194,852	1,117,395	-6.5	New Hampshire	107,573	112,532	4.6
Texas	5,139,663	4,850,213	-5.6	Florida	2,664,200	2,808,694	5.4
Iowa	786,640	753,915	-4.2	Arkansas	623,806	659,055	5.7
Utah	682,032	603,196	-4.0	Alaska	204,706	217,245	6.1
Kansas	712,923	685,832	-3.8	South Dakota	143,163	152,299	6.4
Pennsylvania	2,011,695	1,934,475	-3.8	New Mexico	605,193	644,385	6.5
Washington	1,370,921	1,323,134	-3.5	Kentucky	1,039,117	1,115,174	7.3
Nebraska	516,249	498,809	-3.4	Vermont	71,354	76,841	7.7
Arizona	884,175	859,799	-2.8	Louisiana	997,813	1,098,721	10.1
Idaho	323,118	315,145	-2.5	Hawaii	349,231	398,836	14.2
Tennessee	1,071,512	1,046,163	-2.4	Wyoming	161,917	196,935	21.6
Georgia	1,707,734	1,671,850	-2.1	Nevada	346,845	482,655	39.2
				Total	$62,820,114	$60,293,002	-4.0%

Source: Palmer, 2006. Reported in Zumeta, 2006, p. 42.

TABLE 9

State Rankings on FY 2004 Tax Appropriations (State + Local) for Higher Education ($000s), Per Capita and Per $1,000 of Personal Income

States	Appropriations	Per Capita		Per $1,000 in Personal Income	
		$	Rank	$	Rank
Alabama	1,166,110	258.92	16	9.93	14
Alaska	217,965	336.22	3	10.14	13
Arizona	1,327,065	237.86	23	8.90	18
Arkansas	674,300	247.20	20	10.25	10
California	10,574,656	298.19	9	8.98	17
Colorado	635,157	139.67	47	4.07	48
Connecticut	748,226	214.58	33	4.99	46
Delaware	190,289	232.58	25	7.01	29
Florida	2,808,468	165.21	45	5.54	42
Georgia	1,876,628	216.29	31	7.43	27
Hawaii	398,836	319.39	5	10.42	8
Idaho	322,328	235.79	24	9.28	16
Illinois	3,312,800	261.90	15	7.92	23
Indiana	1,360,318	219.42	30	7.68	25
Iowa	779,639	265.01	14	9.39	15
Kansas	835,604	306.67	8	10.47	7
Kentucky	1,104,797	268.27	12	10.25	11
Louisiana	1,208,995	269.04	11	10.38	9
Maine	233,695	178.50	40	6.24	38
Maryland	1,355,356	245.88	21	6.61	33
Massachusetts	828,405	129.03	48	3.29	49
Michigan	**2,462,293**	**244.22**	**22**	**7.89**	**24**
Minnesota	1,287,455	254.23	19	7.51	26
Mississippi	840,328	291.52	10	12.59	3
Missouri	949,986	166.10	43	5.75	40
Montana	154,131	167.87	42	6.52	35
Nebraska	561,895	323.40	4	10.67	6
Nevada	482,655	215.26	32	6.94	30
New Hampshire	112,446	87.26	50	2.54	50
New Jersey	1,926,764	222.94	27	5.61	41
New Mexico	706,715	376.20	2	14.90	1
New York	4,289,436	223.26	26	6.19	39
North Carolina	2,607,009	309.58	7	11.08	5
North Dakota	200,430	316.44	6	11.13	4
Ohio	2,194,049	191.83	37	6.44	37
Oklahoma	770,098	219.62	29	8.29	21
Oregon	690,515	193.73	36	6.79	31
Pennsylvania	2,045,043	165.31	44	5.25	44
Rhode Island	172,062	159.90	46	5.06	45
South Carolina	698,219	168.30	41	6.49	36
South Dakota	153,281	200.39	34	7.10	28
Tennessee	1,088,681	186.25	38	6.58	34
Texas	5,639,327	255.13	18	8.81	19
Utah	603,196	256.45	17	10.21	12
Vermont	77,153	124.57	49	4.12	47
Virginia	1,358,445	184.44	39	5.50	43
Washington	1,360,709	221.93	28	6.68	32
West Virginia	353,169	194.97	35	7.94	22
Wisconsin	1,453,396	265.49	13	8.70	20
Wyoming	219,343	436.84	1	13.73	2

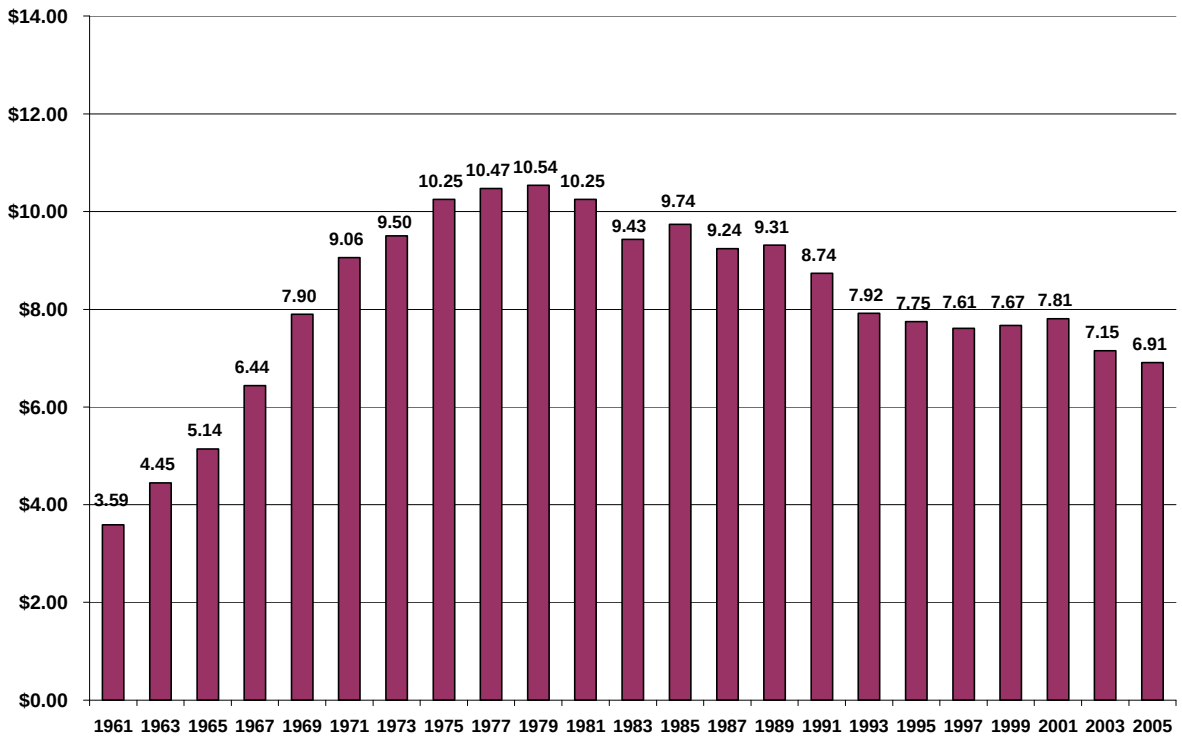
Source: Palmer, 2006.

Michigan ranked 35th in the change in state appropriations for higher education between fiscal years 2005 and 2006 yet its percentage increase improved to 3.3 percent.

If the metric is state and local tax appropriations per $1,000 of personal income Michigan's national ranking improves considerably to 22nd in 2004 and 24th in 2006 (see Table 9).[66]

In examining these and similar data over a 25 year period, Zumeta concluded that real state support for public higher education had eroded over time (see Figure 2).[67]

FIGURE 2
Appropriations per $1,000 Personal Income



Source: Zumeta, 2006, p. 39.

In his examination of state appropriations per $1000 of personal income, Zumeta concluded:

> The states—still the key governmental players for public higher education—shifted their focus away from the academic sector after 1980. [Figure 2] depicts the steady decline over the past quarter century in state operating appropriations to higher education per $1,000 of personal income, a standard measure of economic wherewithal. The decrease in this key ratio occurred *in all fifty states* and amounted to more than one-third overall.[68]

Revenue from Student Tuition and Fees

Public college and university revenues from tuition and fees, by year, adjusted for inflation, rose 174.2 percent between 1980 and 2000, an annual increase of 8.7 percent in real terms. Between

1990 and 2000 the percent increase using inflation adjusted dollars was 58.5 percent or about 5.9 percent annually.[69]

The real decrease in state dollar appropriations for higher education in the past five years, the real increase in revenue from student tuition and fees, and the relative stability of revenues from all other sources over time lead to one inescapable conclusion. Changes in state appropriations are inversely related to changes in student tuition and fees for public colleges: when state appropriations go down as a percentage of total public institutional costs, tuition and fees go up as public colleges and universities increasingly have had to look for revenue to replace the real decline in state funding.[70]

Student Prices

This section examines five issues:

- What students (or their parents) pay for college,
- What parents and students believe about the price of going to college,
- How students pay for college,
- The effect of price on affordability, access, student choice of institution, and degree completion, and
- The percentage of the cost of educating a student paid for by tuition and fees.

What students (or their parents) pay for college

The American public believes that the benefits of attending a college or university are substantial. So far they believe that the benefits outweigh the costs even though prices have increased. This attitude is in part a function of the declining economic value of the high school diploma and its apparent replacement by a college or university credential of some type as the minimum necessary requirement for most desirable employment. Belief that the benefits of going to college outweigh the costs may change; over time, the American public has become increasingly concerned about the price of admission to college. If a student cannot afford the price of attending, then the benefits that accrue from a college degree are irrelevant. After several national reports and "calls to arms" about college costs,[71] this public concern has found expression in political action. A bill to contain college costs and prices, the College Access and Opportunity Act of 2005, passed the House and now waits to be taken up by the U.S. Senate. This act would impose sanctions for colleges and universities that increase their prices beyond inflation.

This very real student and family concern about being able to afford college, and the political expression of that concern, require careful examination of college prices. This section examines trends in the sticker and net price of attending college as well as trends in student financial aid, which reduce the immediate cost of the sticker price to enable students to enroll in a college or university (net price). The *sticker* and *net price* estimates include tuition and fees; in the case of 4-year institutions, these also include the on-campus price of room and board. Not included in these estimates are the price of books and supplies or special fees. Although these are certainly a part of what a student pays, comparable data are not always available across institutions and states. Also not included is the off-campus price of room and board.

This report uses estimates from the College Board's *Trends in College Pricing 2005*. The College Board collects data on costs and prices annually, which makes its estimates generally reliable. The College Board calculates *net price* by subtracting grants and education tax benefits from the *sticker price*. It does not subtract from the sticker price student loans and other forms of financial aid that increase student debt.

Table 10 shows average tuition and fees levels over time per FTE student--the *sticker price*--in current dollars (the year in which tuition and fees were charged) and constant 2005 dollars (adjusted for inflation), by type of institution.

TABLE 10
Changes in the "Sticker Price" of College Tuition, 1975-76 to 2005-06, by Type of Institution

	Tuition and Fees—Current Dollars						Tuition and Fees—Constant (2005) Dollars					
Academic Year	Private 4-Yr	5-Yr % Chg	Public 4-Yr	5-Yr % Chg	Public 2-Yr	5-Yr % Chg	Private 4-Yr	5-Yr % Chg	Public 4-Yr	5-Yr % Chg	Public 2-Year	5-Yr % Chg
1975-76	$2,272		$433		$245		$8,026		$1,530		$865	
1980-81	$3,617	59%	$804	86%	$391	60%	$8,180	2%	$1,818	19%	$884	2%
1985-86	$6,121	69%	$1,318	64%	$641	64%	$11,019	35%	$2,373	30%	$1,154	31%
1990-91	$9,340	53%	$1,908	45%	$906	41%	$13,663	24%	$2,791	18%	$1,325	15%
1995-96	$12,216	31%	$2,811	47%	$1,330	47%	$15,489	13%	$3,564	28%	$1,686	27%
2000-01	$16,072	32%	$3,508	25%	$1,642	23%	$17,982	16%	$3,925	10%	$1,837	9%
2005-06	$21,235	32%	$5,491	57%	$2,191	33%	$21,235	18%	$5,491	40%	$2,191	19%

Source: College Board, 2005.

Looking at constant or inflation adjusted dollars, the most notable change in Table 10 is the 40 percent increase in sticker price at public 4-year institutions during the past five years. The comparable percentages in private 4-year and public 2-year institutions were 18 percent and 19 percent, respectively. The constant dollar sticker price in public 4-years remains much less than the sticker private in private 4-year colleges and universities--$5,491 versus $21,235.

Table 11 presents the same breakdowns for the combined total of tuition and fees plus on-campus room and board charges at 4-year institutions (on-campus room and board costs do not apply to most public 2-year college students).

TABLE 11
Changes in the "Sticker Price" of College Tuition Plus Room and Board, 1975-76 to 2005-06, by Type of Institution

	Tuition and Fees—Current Dollars				Tuition and Fees—Constant (2005) Dollars			
Academic Year	Private 4-Yr	5-Yr % Chg	Public 4-Yr	5-Yr % Chg	Private 4-Yr	5-Yr % Chg	Public 4-Yr	5-Yr % Chg
1975-76	$3,663		$1,666		$12,939		$5,885	
1980-81	$5,594	53%	$2,551	53%	$12,651	-2%	$5,769	-2%
1985-86	$8,902	59%	$3,791	49%	$16,026	27%	$6,825	18%
1990-91	$13,476	51%	$5,074	34%	$19,713	23%	$7,423	9%
1995-96	$17,382	29%	$5,743	33%	$22,040	12%	$8,550	15%
2000-01	$22,240	28%	$8,439	25%	$24,883	13%	$9,442	10%
2005-06	$29,026	31%	$12,127	44%	$29,026	17%	$12,127	$28%

Source: College Board, 2005.

The percentage increases in Table 11 where room and boards charges are included are more moderate, although the total sticker price of course is higher. It seems that the rise in room and board prices has been more moderate than the increase in tuition and fees. The data from Tables 10 and 11 raise a question of perspective: Should state legislators and parents and students focus on the dramatic rise in tuition and fee sticker price over time, or on the lower price of public higher education relative to private institutions? To assist state policy makers and potential college goers in answering this question, we first examine the *net price* or the actual cost of attending a college or university, followed by a look at the *affordability* of going to college – that is, the ratio of net cost to median income.

The next two tables show the change in *net price* in constant 2005 dollars over the past decade separately for tuition and fees (Table 12) and for tuition and fees plus room and board (Table 13). The College Board estimates net price by subtracting grants and educational tax benefits received by the student from federal, state, and local governments, as well as grants received from institutions and private foundations; not surprisingly, net price for tuition and fees shows a very different picture than sticker price.

TABLE 12

Net Price: Changes in Net Price for Tuition and Fees (Subtracting grant and tax benefits) in Constant 2005 Dollars, by Type of Institution

Year	Public 2-Year			Public 4-Year			Private 4-Year		
	Net Tuition & Fees	Annual % Change	% Change 00-01 to 05-06	Net Tuition & Fees	Annual % Change	% Change 00-01 to 05-06	Net Tuition & Fees	Annual % Change	% Change 00-01 to 05-06
1995-96	900			1,900			9,500		
1996-97	1,000	11.1		1,900	0		9,500	0	
1997-98	1,000	0		2,000	5.2		9,900	4.2	
1998-99	600	-40.0		1,700	-15.0		9,900	0	
1999-00	500	-16.7		1,500	-11.8		9,900	0	
2000-01	400	-20.0		1,400	-6.7		9,700	-2.0	
2001-02	200	-50.0		1,400	0		10,400	7.2	
2002-03	200	0		1,400	0		10,200	-1.9	
2003-04	300	50.0		1,700	17.6		10,400	2.0	
2004-05	400	33.3		2,000	17.6		11,200	7.7	
2005-06	400	0	0	2,200	10.0	57.1	11,600	3.6	19.6

Source: College Board, 2005.

Table 12 makes clear that grants and tax savings mean the true cost to students for attending college is much lower than the sticker price suggests. In 2005-06, the net price in tuition and fees at public 2-year colleges represented only 18 percent of the sticker price. At public and private 4-year institutions, the net prices were 40 percent and 55 percent, respectively. Net price in tuition and fees at public 2-year colleges did not increase at all in the past 5 years. The increase during the same time period in private 4-year colleges was 19.6 percent or about $1900. As was true for sticker prices, public 4-year institutions showed the greatest percent increase in net tuition and fee price during the past five years, more than doubling to $2200 from $1400.

When adding room and board charges to tuition and fees the net price shows a much smaller discount than for the net tuition and fee price alone. Table 13 shows that in 2005-06 the net price for tuition and fees plus room and board in constant 2005 dollars accounted for 72.7 percent and 66.9 percent of the sticker price in public and private 4-year institutions, respectively. Grants and education tax savings do not apply to room and board charges so this relatively fixed cost adds substantially to the net price. During the past five years net price for tuition and fees plus room and board climbed 27.5 percent in public 4-year colleges and universities, 16.9 percent in private institutions.

TABLE 13

Net Price: Changes in Net Price for Tuition and Fees Plus Room and Board (Subtracting grant and tax benefits) in Constant 2005 Dollars, by Type of Institution

Year	Public 4-Year*			Private 4-Year		
	Net Tuition & Fees	Annual % Change	% Change 00-01 to 05-06	Net Tuition & Fees	Annual % Change	% Change 00-01 to 05-06
1995-96	6,800			16,000		
1996-97	7,100	4.4		16,100	0.6	
1997-98	7,300	2.8		16,700	3.7	
1998-99	7,000	-4.1		16,700	0	
1999-00	7,000	0		16,800	0.6	
2000-01	6,900	-1.4		16,600	-1.2	
2001-02	7,200	4.3		17,500	5.4	
2002-03	7,400	2.8		17,600	0.6	
2003-04	7,900	6.8		17,900	1.7	
2004-05	8,500	7.6		18,800	5.0	
2005-06	8,800	3.5	27.5	19,400	3.2	16.9

*Room and board charges are not applicable at most community colleges.
Source: College Board, 2005.

What parents and students believe about the price of going to college

State policymaker concerns about higher education prices are driven largely by the concerns of their constituents. In this context, what parents and students *believe* about the price of higher education is as likely to be reflected in the debate about state higher education policy as the *actual* price of attending. Even though the price of attending college has increased substantially during the past two decades (whether sticker or net price), parents and students believe the price is higher than it actually is. Parents and their children are especially likely to overestimate the cost of attending public institutions. In a survey conducted in 2000, parents overestimated the cost of attending public 2-year colleges by 82 percent; the cost for public 4-year institutions by 53 percent, and the cost of private 4-year institutions by 25 percent.[72]

Why are students and their parents so often wrong about the cost of attending a college or university? The publicity given to the extremely high tuition price at elite private colleges and universities certainly is one factor. Some potential college-goers simply assume that the most visible tuition prices are common everywhere. Most often, though, parents and potential college students do not know what it costs to go to college. Horn and colleagues found that only 18 percent of high school students with plans to attend college gathered any information about college prices; only half of students nearest the decision point for college – 11th and 12th graders – obtained information about the price of attending college. Only 30 percent of the parents of K-12 students who planned to attend college gathered such information.[73] Knowledge about prices was lowest for students and families with the lowest incomes. Parents and students know even

less about the sources of financial aid to help students pay for college. Again, low-income families know the least about financial aid options.[74]

This lack of information may mean that the *perceived price* has more of an effect than the actual price on the decision to go to college and to the type of college selected.[75] Some students assume the price of attending some form of college or university is out of reach and do not pursue college or university options. Blue collar youth whose image of a decent career is to obtain a high school diploma and work in the rapidly disappearing traditional manufacturing industries seem especially likely to follow this path. These findings suggest that one component of increasing the participation of Michigan citizens in higher education is to increase the flow of information about college prices to parents and students.

Interestingly, as we show below *net price* affects the amount of debt incurred by students and their persistence in degree completion. On the other hand, *perceived price* seems more related to student access and to choice of institution.[76] In other words, some students opt out of college or choose a less expensive institution because they believe it is too expensive rather than because they know the net or even the sticker price of attending.

How students pay for college

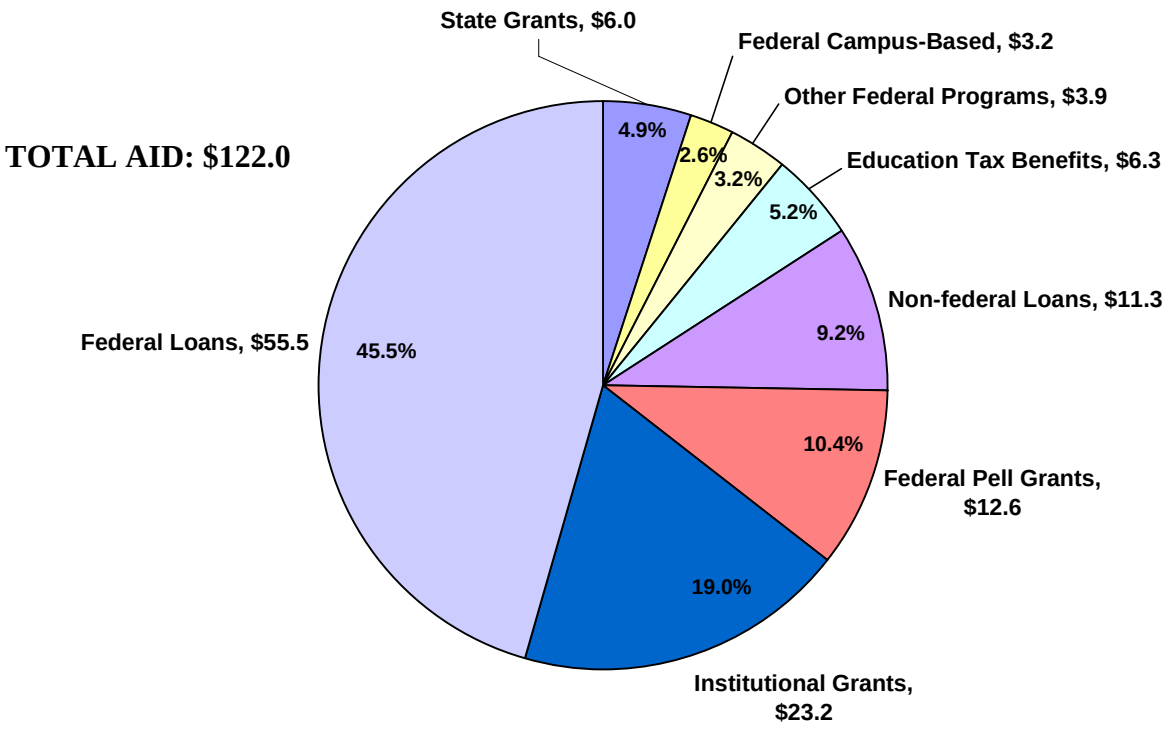
Although the primary emphasis of state policymakers is on the general state subsidy for public colleges and universities, they also must pay heed to a central concern of their constituents--how students pay for college. Although the trends in net price adjusted for inflation show a much less drastic rise in the cost of attending college over time than trends in sticker price, students do not pay for college with adjusted or net dollars. Nor can they (or their parents) obtain education tax benefits prior to enrolling in school. Students (or their parents) must find a way to come up with sufficient funds in today's dollars to pay the sticker price.

Students can seek financial support for college from several sources. The federal government provides subsidized loans as well as Pell grants for low-income students. State governments also provide loans; many also have put in place college savings plans to help parents save for their child’s college education. Institutions themselves provide grants and scholarships and are the fastest growing source of loans and other forms of financial assistance. Students can also seek loans from banks, which typically charge higher interest rates than subsidized governmental loans.[77]

Then there’s work. Colleges offer work-study programs, usually for lower-income students, to help them defray the cost of attending college. These jobs are tied directly to the university environment and its operations. Work-study, though, is only part of the picture about student employment. Over time, the image of the full-time student spending almost all of her or his time going to school and working on the side to make a few extra dollars has been replaced. Today nearly half of the students work to pay for college. Almost 48 percent of full-time college students in the U.S. across all types of institutions had some type of job in 2002-03; almost 30 percent worked at least 20 hours per week. Today a student can expect work to be part of the price of attending college.

Figure 3 presents the distribution of student financial assistance by category in 2003-04.[78] Overall loans account about 57 percent of all student financial aid, grants about 30 percent, and the rest sprinkled across the other categories.

FIGURE 3
Estimated Student Aid by Source for Academic Year 2003-04 *Current Dollars* (in Billions)



Source: College Board, 2004b.

Federal loans account for slightly less than half of all student financial aid. Institutional grants comprise about 20 percent. Federal Pell grants and non-federal loans make up about 10 percent each. Education tax benefits, state grants, federal campus-based support (e.g., work-study), and other federal programs comprise 5 percent or less each.

Table 14 shows the average student financial aid per FTE student by type of aid in constant 2003 dollars.[79] In the 20 years between 1983-84 and 2003-04 the average loan per FTE student more than tripled in constant dollars.

TABLE 14

Total Aid, Grant Aid, Loan Aid, and Education Tax Benefits Per Full-Time Equivalent (FTE) Student in Constant 2003 Dollars, 1983-84 to 2003-04

Academic Year	Average Aid per FTE	Grant Aid per FTE	Loan per FTE	Education Tax Benefits
1983-84	$3,094	$1,660	$1,647	--
1988-89	3,838	1,964	2,087	--
1993-94	5,301	2,433	2,773	--
1998-99	7,438	3,040	3,944	357
2003-04	10,742	3,986	5,840	540

Source: College Board, 2004b.

Of equal or greater concern to students and parents is the potential cumulative debt a student might incur from attending a college or university. Using data from the National Postsecondary Student Aid Study (NPSAS), the American Council on Education examined the cumulative federal loan debt for degree recipients by type of degree and institution.[80] As seen in Table 15, a greater percentage of graduates of every type of degree borrowed more money in 2003-04 than in 1993-94.

In constant dollars, the cumulative debt increased by 72 percent for associate degree holders and 78 percent for bachelor's degree holders in public 4-year institutions over ten years. For graduates of private 4-year institutions the percentage increase in debt was 35 percent, although the total amount borrowed was 17 percent greater than the amount borrowed by their public counterparts. The greatest debt by far was accrued by doctoral and first professional degree recipients.

TABLE 15

Cumulative Amount of Federal Student Loans Borrowed by Degree Recipients: 1992-93 to 2003-04, in Constant 2003-04 Dollars

Degree Plan and Institution Type	1992-93			1995-96			1999-2000			2003-04		
	Percentage Graduating with Debt (%)	Median Amount Borrowed ($)	Monthly Payment Amount ($)	Percentage Graduating with Debt (%)	Median Amount Borrowed ($)	Monthly Payment Amount ($)	Percentage Graduating with Debt (%)	Median Amount Borrowed ($)	Monthly Payment Amount ($)	Percentage Graduating with Debt (%)	Median Amount Borrowed ($)	Monthly Payment Amount ($)
Undergraduate Certificate												
Public 2-Year	NA	NA	NA	NA	NA	NA	17.6	2,885	33	20.9	5,307	61
For-Profit	40.5	3,427	39	50.5	4,800	55	71.8	6,649	77	77.5	5,705	66
Associate Degree												
Public 2-Year	19.7	3,427	39	21.6	4,742	55	24.9	5,716	66	28.3	5,879	68
For-Profit	NA	NA	NA	81.7	9,315	129	88.4	12,575	145	89.2	14,067	162
Bachelor's Degree												
Public 4-Year	24.8	8,226	95	48.7	12,553	144	57.9	16,321	188	58	14,671	169
Private Not-for-profit 4-Year	40.4	12,639	145	51.5	17,164	198	65.5	18,623	214	69.2	17,125	197
Post-BA/Post-MA Certificate (All Institutions)	NA	NA	NA	NA	NA	NA	NA	NA	NA	52.6	20,444	235
Master's Degree												
Public 4-year	35.2	10,256	118	46.4	14,464	166	49.7	16,578	214	49.1	26,119	301
Private Not-for-profit 4-Year	38.2	12,276	141	57	20,477	236	53.5	26,198	301	72.9	29,000	334
Doctoral Degree (All Institutions)	42	15,016	173	45	14,827	171	39.6	30,880	355	47.7	44,743	515
Professional Degree												
Public 4-Year	68.3	35,523	420	67.9	57,020	656	90.1	65,291	751	89	63,500	731
Private Not-for-profit 4-Year	60.9	44,394	511	74.5	65,301	751	78.6	78,593	904	81.1	71,317	821

Notes: Figures reflect cumulative student loan borrowing as of the year indicated. For graduate students this includes debt incurred as undergraduates. Monthly payments for all years are calculated using the median amount borrowed, assuming the 2006 fixed annual interest rate of 6.8 percent under the standard 10-year repayment plan. NA - Not available.

Source: U.S. Department of Education, National Center for Education Statistics. National Postsecondary Student Aid Studies: 1992-93, 1995-96, 1999-2000 and 2003-04.

The effect of price on affordability, access, student choice of institution, and degree completion

The change in the affordability of higher education over time can be estimated by calculating separately the ratios of sticker and net prices for tuition and fees plus room and board to the median income for 4-person families in 1995-96 and 2003-04. The ratio in Table 16 represents the proportion of median income it took to pay for one year of college; for example, .20 means the price of going to college was 20 percent of the median family's income. The higher the ratio, the greater the relative price of attending college and the lower the affordability.

TABLE 16
Ratio of Sticker and Net Prices for Tuition and Fees Plus Room and Board*, to Median 4-Person Family Income, by Year and Type of Institution

	Sticker Price/Median Income ($XX,000)	Net Price/Median Income** ($XX,000)
Public 2-Year		
1995-96	.027	.018
2003-04	.029	.005
Public 4-Year		
1995-96	.136	.137
2003-04	.159	.129
Private 4-Year		
1995-96	.350	.322
2003-04	.400	.291

*Price estimates for public 2-year institutions are for tuition and fees only.
**For 2003-04 the education tax benefit (about a 6% reduction in the sticker price on average) was removed from the denominator because it was not available in the 1995-96 academic year.
Sources: College Board, 2005; U.S. Census Bureau.

Both *sticker prices* and median income increased over time, but affordability declined in public and private 4-year institutions – that is, prices increased faster than median income. Estimates based on sticker prices showed little change in the affordability of public 2-year colleges over time. These results are consistent with results found by the National Center for Public Policy and Higher Education.[81] Ratios using *net prices* show a different trend. Affordability was more or less unchanged over time for public institutions and slightly increased for private 4-year institutions. These data suggest that when a student applies for a college or university, the sticker price will likely make college seem less affordable a year from now than it is today. However, students who obtain financial aid grants or scholarships and claim education tax benefits will find the net price of college to be about as affordable next year as it is today.

The price of attending college affects more than affordability and student debt. Research shows that change in price over time affects access to college generally, the type of college or university selected by students, and rates of degree completion. Although their overall effect is

quite small,[82] price increases tend to reduce access more substantially for low-income students and for racial and ethnic minorities, who are disproportionately represented in the lowest socioeconomic quartile.[83] It appears that youth from the middle and upper classes are likely to go to college regardless of price increases, while the odds of college attendance for lower income youth and for racial and ethnic minorities decrease as the price of attending college rises.

On average, price seems to have a stronger affect on the student's choice of type of college or university. Even middle class students may think twice about attending expensive private colleges and universities, opting instead for less expensive public institutions. The choice of college made by upper income students and their parents may be less affected by price. At some point price also seems to affect the likelihood that a low or middle income student will opt for a public 2-year institution instead of a 4-year college or university.[84]

One of the more important effects of price is on persistence and degree attainment. The more affordable the college relative to family income, the more likely is the student to complete her or his degree.[85]

The percentage of the cost of educating a student covered by the price

Student tuition and fees plus room and board, however high the price and however much the price has increased over time, cover only a fraction of the costs a college or university incurs in educating a student. Using data from the *Digest of Education Statistics 2004,*[86] Table 17 shows over a 20-year period the ratio of average tuition and fees plus room and board to the current-fund expenditures per FTE student. This ratio estimates the proportion of the total cost of educating a student accounted for by the price paid by a student. For public 2-year colleges only tuition and fees are included in the numerator because few students in public 2-year colleges live in dormitories on campus.

In the more expensive private colleges and universities, the percentage of the cost to educate a student covered by tuition and room and board doubled in the 15 years between 1980-81 and 1995-96 to stand at slightly more than half in 1995-96. Similarly, the percentage of the cost covered by tuition and fees plus room and board at public 4-year institutions doubled between 1980-81 and 2000-01 to slightly more than 30 percent. The proportion of the cost to educate a student contributed by tuition and fees at public 2-year colleges is quite low, less than 15 percent. This percentage actually declined between 1990-91 and 2000-01.

These data suggest why students and their parents and college and university administrators view costs and prices from such different perspectives. Parents look at the rising costs and wonder whether they can afford to send their children to college. University administrators look at the total cost of operating their institutions, as well as flat or declining state appropriations for public institutions, and wonder how they can manage the increasing costs to compete for faculty, maintain facilities and add technology without raising tuition and fees so much that many able students cannot afford to attend. This dilemma lies at the heart of the balancing act between cost, benefits, access and quality. We return to it in the final section.

Table 17
Percentage of Total Costs of Educating an FTE Student Accounted for by Student Price, by Year and Type of Institution

Type of Institution /Year	Tuition & Fees + Room & Board (A)*	Current-fund Expenditure per FTE Student (B)	A/B: The Percentage Contribution of Student Prices to the Cost of Educating an FTE Student
Public 2-Year			
1980-81	$799	$6,186	12.9%
1990-91	1,612	7,535	21.4
2000-01	1,333	9,183	14.5
Public 4-Year			
1980-81	2,550	16,856	15.1
1990-91	5,243	21,163	24.7
2000-01	8,653	27,793	31.1
Private 4-Year			
1980-81	5,594	21,355	26.2
1990-91	13,237	30,441	43.5
2000-01	17,612	32,394	54.5

*For public 2-year colleges only tuition and fees are included; room and board charges do not apply.
Source: NCES, 2004.

Why Do Costs and Prices Increase?

The economics of higher education seem mystifying. On the one hand, demand exceeds supply at the more prestigious institutions. Economic theory would expect prices to rise to reflect limited supply. However, these same institutions seem to set prices less in response to demand than in response to last year's budget.[87] In this context, the price to students has less to do with the cost of producing a degree and more to do with making up for the shortfall in revenue between last year and this year.

Price increases tend to decrease enrollment by low-income students, while wealthier students seem not to respond to price increases by turning elsewhere; they apply anyway. This conundrum is especially vexing for selective state universities simultaneously trying to provide access to the citizens of the state while dealing with demand that exceeds the supply of spaces for students.

Adding to the confusion is the relationship between cost and price. Colleges and universities may raise the price of tuition and fees when their costs rise. The new price, however, will not cover the entire cost to the academic institution; it may cover even *less* of the cost than before depending on how much the cost of educating a student has increased. Even at elite private institutions the price or tuition covers only about half the cost of educating a student; the percentage is much lower at public institutions. In addition, colleges and universities may raise prices when their costs are stable but their revenue declines. In the latter case, students end up

paying a higher percentage of the full cost of educating a student. When state appropriations to public institutions go down or fail to exceed inflation, these institutions may make up for the shortfall in part by shifting an increasing percentage of the cost of educating a student to the student by increasing tuition and fees.

Determining costs and setting prices is complex in part because colleges and universities are complex. The cost to produce an undergraduate degree is not the same as the cost to produce a Ph.D. The cost to educate a student hoping to obtain an associate's degree and transfer to a 4-year institution is different than the cost of delivering an on-line course to a teacher needing one or two courses to retain her or his certification. The cost of a laboratory-based course is different from one in the humanities. The production costs for outreach and public service and especially for research have little to do with the production cost of any type of instruction, although some personnel—especially some faculty members—participate in all of these activities. No wonder academic institutions find it difficult to set a single price for current and prospective students. It is far easier to look at last year's budget and the prices set by peer institutions than to piece together an overall cost that can be related to a price for students.

Although institutions vary by type and mission, they all share an interest in maintaining quality. Maintaining quality in a labor-intensive organization is expensive; even with technology, part-time faculty members and other forms of cost reduction, higher education is challenged in its ability to improve efficiency while maintaining quality.[88] The labor intensity of academic organizations is the most commonly cited reason for increases in costs and prices. So we return to the balancing act: How do colleges and universities control costs and set affordable prices for students while at the same time providing needed services and maintaining quality?

The traditional argument made by college administrators is that external conditions beyond their control forces costs (and hence prices) upward.[89] There is some truth to this argument. Public institutions certainly have had to increase their prices to make up for cutbacks in state appropriations.[90] Sometimes states reduce a university budget during the academic year, making it difficult for a public college or university to set an accurate price for students in advance. Federal appropriations for research and for financial aid tend to have up and down cycles, making it difficult for universities to plan their expenditures thus driving up costs. Greater student demand has led some public and private institutions to increase their contribution to student financial aid, resulting in a price increase to expand the total institutional revenue pool. Technology and laboratories cost top dollar. Maintaining or increasing quality requires hiring and keeping top faculty members, which is especially expensive for research universities and elite liberal arts colleges. Research evidence, though, suggests that faculty salaries are not highly correlated with price increases for college students.[91]

These claims tell only part of the story. The pursuit of prestige has high value in the academic world, and that pursuit often leads institutions to spend money to enhance prestige rather than to achieve quality.[92] Sometimes the pursuit of prestige in high status activities comes at the expense of the quality of less prestigious activities. Kuh & Pascarella recently showed that neither the selectivity of an institution nor its cost is related to the quality of the students' learning experience.[93] The most effective instructional strategies are no more likely to be found at Ivy League institutions than at less selective institutions. Kuh & Pascarella conclude that this pattern in part reflects the lower status of teaching and learning on college campuses relative to research.

In this complex environment—producing essential educational outcomes and services while pursuing prestige and maintaining quality—Bowen's Law[94] rules: a university will raise all the money it can and spend all the money it can raise. Massy explains college and universities costs and prices as follows:

> Universities press their pricing to the limits that markets, regulators, and public opinion will allow. They justify their actions in terms of the rising cost of excellence and other factors beyond their control, but that is only part of the story. The impetus for price hikes stems from the university's own choices—in particular, from the way it defines "excellence."[95]

According to Rhodes, higher education costs and prices rise ultimately because collectively and individually these institutions try to do everything and do it all well. It is easier to add functions and try to make them excel than to choose between functions and invest more heavily in a reduced set of activities. Rhodes is eloquent on the need for academic institutions to make choices while informing various stakeholders that these choices have consequences, not all of which are appealing:

> If strict tuition control is a priority…and an adequate financial aid program is also a priority, the some expenses must be excised from the budget to meet both. If very competitive faculty salaries are also a priority, it becomes more likely that the *number* of faculty and/or staff will have to be reduced. And that, in turn, will mean fewer classes or larger classes or increased teaching loads.[96]

These choices become even more complex when we move from actions taken by individual institutions to the combined effect of actions taken across a group of public colleges and universities. We return to this important topic—the need to make choices and understand tradeoffs – in the final section.

College Costs and Student Prices in Michigan

National averages are important and explain broad trends affecting all colleges and universities and the governments and individuals that help pay for them. What ultimately counts for Michigan residents, though, are trends in Michigan and among the states. This section examines trends in state appropriations for higher education over time, as well as recent trends in tuition and fees by institution.

The Michigan House Fiscal Agency reports that from fiscal year 2002 to fiscal year 2006 state appropriations for Michigan's 15 public 4-year colleges and universities have declined about 19 percent in inflation-adjusted dollars overall.

Table 18
Michigan State Appropriations for Public 4-Year College and Universities, 2002-2006

Fiscal Year	Appropriations (billions)
2002	$1.926
2003	$1.845
2004	$1.697
2005	$1.669
2006	$1.734

Source: Michigan House Fiscal Agency.

This is not surprising given the condition of the state economy.[97] For the ten years between fiscal year 1996 and fiscal year 2006, Michigan's higher education appropriations, including public community colleges and financial aid, increased 20.3 percent, which ranked Michigan 41st out of 50 states. The national average for this period was 50.1 percent. During the 5 years between fiscal year 2001 and fiscal year 2006, Michigan's higher education appropriations declined 9.2 percent, similar to the decline indicated by the Michigan House Fiscal Agency. For this 5-year time period the national increase was 9.9 percent; Michigan ranked 43rd out of 50 states.[98]

Table 19 shows the tuition and fees charged by Michigan's public and private colleges and universities for 2004-05 and 2005-06. To estimate the complete price for students, readers should add between $5,000 and $7,500 for room and board, depending on the institution. Michigan 2-year public colleges remain in line nationally both in average tuition and in the percentage increase from one year to the next. Michigan's private 4-year institutions on average charge less than other states in part because Michigan does not have a high-cost private research university. The percentage increase in tuition and fees at Michigan's private non-profit institutions is at the national average. Michigan's public 4-year institutions are about 20 percent higher than the national average in tuition and fees and substantially higher in the percentage increase from FY2005 to FY2006. The average tuition and fee cost for public 4-year institutions is higher in Michigan in part because it has three public research universities and a public technical university, all of which have higher operating costs than the other public institutions. The increase in tuition is also directly related to the real decline in state appropriations for higher education over the past 5 years. These patterns of state appropriations are crucial to understanding how the state helps pay for the education of its citizens and for any effort by the state to increase the involvement of its citizens in a college or university education.

Table 19

Tuition and Fees* at Michigan's Colleges and Universities, 2004-05 and 2005-06, by Type of Institution ($)

Type of Institution Name	Tuition + Fees 2004-05	Tuition + Fees 2005-06	% Change by Type of Institution
Public 2-Year			
Alpena	2,532	2,660	
Bay de Noc	2,000	2,000	
Bay Mills**	2,680	2,760	
Delta	2,296	2,400	
Glen Oaks	2,295	2,516	
Gogebic	2,394	2,736	
Grand Rapids	1,980	2, 085	
Henry Ford	1,704	1,704	
Jackson	1,836	2,160	
Kalamazoo Valley	1,251	1,320	
Kellogg	1,984	2,077	
Kirtland	2,374	2,366	
Lake Michigan	2,326	2,535	
Lansing	1,690	1,975	
Macomb	1,931	2,015	
Mid Michigan	2,110	2,220	
Monroe County	1,810	1,930	
Montcalm	1,995	2,085	
Mott	2,469	2,960	
Muskegon	1,710	1,800	
North Central MI	1,929	1,900	
Northwestern MI	2,060	2,060	
Oakland	1,716	1,759	
Schoolcraft	2,050	1,986	
Southwestern MI	2,322	2,565	
St. Clair County	2,164	2,292	
Saginaw Chippewa**	1,456	1,456	
Washtenaw	2,412	2,484	
Wayne County	1,466	1,507	
West Shore	1,643	1,705	
Michigan Average	**2,019**	**2,134**	**6%**
National Average	**2,079**	**2,195**	**5%**

*For public 2-year institutions the rates shown are in-district. For public 4-year institutions the rates shown are in-state.
**Tribal college.

TABLE 19 CONTINUED			
Type of Institution Name	**Tuition + Fees 2004-05**	**Tuition + Fees 2005-06**	**% Change by Type of Institution**
Private 2-Year			
Lewis College	7,680	8,130	6%
Private 4-Year			
Liberal Arts/Bachelor's			
Adrian	17,600	18,530	
Albion	22,918	24,926	
Alma	19,986	21,134	
Ave Maria	NA	NA	
Baker-Flint	6,120	6,300	
Baker-Muskegon	6,120	6,300	
Baker-Owosso	6,120	6,300	
Baker-Port Huron	6,120	6,300	
Calvin	17,700	19,150	
Concordia	17,765	18,205	
Finlandia	14,700	15,434	
Hope	20,420	21,540	
Kalamazoo	24,351	25,644	
Olivet	15,944	16,464	
Rochester	11,456	12,356	
Master's			
Aquinas	16,992	17,925	
Cornerstone	14,700	15,550	
Lawrence Tech.	13,570	14,394	
Madonna	9,700	10,300	
Marygrove	12,440	12,800	
Siena Heights	15,520	15,780	
Spring Arbor	15,980	16,270	
U. Detroit-Mercy	20,970	22,470	
Doctoral-Intensive			
Andrews	15,470	16.506	
Michigan Private 4-Year College			
Average	**16,215**	**17,084**	**5%**
National Average	**20,045**	**21,235**	**6%**

TABLE 19 CONTINUED			
Type of Institution Name	**Tuition + Fees 2004-05**	**Tuition + Fees 2005-06**	**% Change by Type of Institution**
Public			
Master's			
Eastern Michigan	5,951	6,541	
Ferris State	6,090	6,686	
Grand Valley State	5,782	6,220	
Lake Superior State	5,736	6,306	
Northern Michigan	5,334	5,858	
Saginaw Valley State	4,913	5,282	
U. Michigan-Dearborn	5,711	6,255	
U. Michigan-Flint	5,422	6,068	
Doctoral-Intensive			
Central Michigan	5,365	6,390	
Michigan Tech.	7,610	8,194	
Oakland U.	5,354	5,856	
Western Michigan	5,668	6,478	
Doctoral-Extensive			
Michigan State Univ.	6,999	8,172	
U. Michigan-Ann Arbor	8,201	9,213	
Wayne State Univ.	4,435	5,208	
Michigan Public 4-Year			
Average	**5,904**	**6,582**	**11%**
National Average	**5,126**	**5,491**	**7%**
Source: IPEDS, NCES.			

Consider the Cherry Commission's recommendation to double the number of degrees and certificates awarded by Michigan colleges and universities within ten years. In 2004-05 Michigan's public and private colleges and universities produced 110,589 degrees of all types.[99] Even after subtracting the degrees produced by private colleges and universities, accepting that for-profit institutions add some small capacity to produce credentials and degrees, and recognizing that not everyone will need a bachelor's degree, it seems inescapable that the cost of increasing educational attainment on the scale envisioned by the Cherry Commission will be enormous. If the state were to increase its investment in line with doubling degree production, the first estimate of increased cost to the state would be double the current amount it spends on higher education, assuming that state funding is based at least in part on head count. If colleges and universities overall can achieve some increased efficiency to reduce the overall costs, the state would need to invest less than double the amount it does now. Yet the largest degree producers already are efficient and are unlikely to absorb larger enrollments. The key question is whether less efficient degree producers can increase their efficiency dramatically with increased

state dollars based on greater head counts, or whether they need substantial investment in better facilities and better faculties to do so *in addition to the dollars allocated to increase capacity*. To the extent that these less efficient institutions need improved infrastructures to improve their graduation rates, state investment in higher education would likely need to be more than double the current investment. Whether intentional or not, Michigan's recent pattern of state appropriations suggests that the burden of paying for a college or university education increasingly will fall on students and their parents.

Section IV
What are realistic expectations?

To increase educational attainment in the State of Michigan with the expectation of improved state economic vitality and better lives for Michigan citizens, the Cherry Commission recommended several changes to current state and academic institution policy. The general goals laid out in the report are to:

- Double the percentage of residents who attain college or university degrees or other credentials that link them to success in Michigan's new economy
- Improve the alignment of Michigan's institutions of higher education with emerging employment opportunities in the state's economy, and
- Build a dynamic workforce of employees who have the talents and skills needed for success in the twenty-first century.[1]

Among the 19 specific recommendations made by the commission, the most important for this report are to:

- Make Higher Education Universal. The Commission encourages "an expectation that all students will achieve a postsecondary degree or credential coupled with a guarantee from the state of financial support linked to the achievement of that goal."[1]
- "Improve Institutional Completion Measures"
- "Expand Access to Baccalaureate Institutions and Degrees"
- "Increase the Number of Post baccalaureate Professionals"
- "Expand Opportunities for Early College Achievement"
- "Target Adults Seeking to Complete Postsecondary Credentials"
- "Align Postsecondary Education with Economic Needs and Opportunities"
- "Expand the Role of Higher Education in Community Development."

Presented as a blueprint for the future of higher education and the economy in the state, the Commission relies on presumed state need as its standard for selecting and making recommendations. Whether the recommendations are feasible, though, depends in part on the norms in other states, even other countries. For example, the Cherry Commission's vision of universal access is literal – that is, each citizen having access to some form of college or university education during her or his lifetime. This is a noble goal to be sure, yet the international standard for universal access to colleges and universities in any nation is 50 percent or greater, not 100 percent.[1] No other states now appear to offer universal access in the manner suggested by the Commission.[1] In comparative terms, the goal of increasing the college participation rate in Michigan to the equivalent of top states seems reasonable; the goal of universal access less so.

Equally important, the implications of the Commission's recommendations for cost and for who pays are implicit, unacknowledged, even ignored. What will it cost to ensure universal access to colleges and universities? What are the organizational and cost implications for the ways colleges and universities operate? Can the Commission's recommendations be achieved simultaneously or are some of them at odds with others? Do recommendations for degree completion rates and increased access apply equally to all 2- and 4-year institutions, or are the

implications quite different for the distinct types of colleges and universities in the state? Can the state afford to subsidize efforts to increase access and degree completion, or will the costs increasingly be passed on to parents, students, and institutions?

Defining Realistic Expectations for Implementing Cherry Commission Recommendations

Of the 19 recommendations made by the Cherry Commission, 14 focus indirectly or directly on colleges and universities. With two exceptions – promoting investment in and commercialization of research, and forming better links with community organizations – in one form or another all of the Commission's recommendations for Michigan's colleges and universities focus on educational attainment and degree production. The recommendations range from providing universal access to some form of college or university education, to ensuring smoother transfer from community colleges to 4-year institutions; from improving degree completion rates to creating new degree programs in entrepreneurship; from helping adults obtain educational credentials to aligning degree programs with employment needs. All of these recommendations *view the production of more and better educated and trained citizens as the primary contributions of Michigan's colleges and universities to the future of the state's economy and the availability of educated people as a necessary if not sufficient condition for economic revitalization.*

Although important, the emphasis on educational attainment and degree production are only part of the important contributions that colleges and universities make to local, regional, and state economies. Basic and applied research, technology transfer, community outreach, other forms of public service, and the generation of tax revenues and local jobs are also important contributions that colleges and universities make to the economy. By placing its primary emphasis on increased educational attainment and degree production, the Cherry Commission may inadvertently shortchange other important functions of higher education in economic development. As we discuss in a later section, given scarce resources the way to think about the state role in higher education is *both* the absolute level of investment *and* the tradeoffs between investing in more degree production and other college and university endeavors. Also important are the effects of increased access, educational attainment, and degree production on the *quality* of the educational experience and on the *costs* to the state, to students and parents, and to colleges and universities.

Degree production and economic development do not fully describe the missions of Michigan's colleges and universities. Many of these missions are arguably as important to the economic and cultural futures of the state as raising the average educational attainment of individuals and producing more degrees. The more complex the mission of a college or university, the more its costs and production overlap. Geiger shows that the more production overlaps, the more difficult it is to separate the costs and benefits of degree production from those of research and public service.[100]

Collectively, Michigan's colleges and universities carry out many functions, often simultaneously. These functions, which are not uniformly distributed across types of institution, include:

- Providing everyone access to post-secondary education and the opportunity to attain certificates and degrees, especially lower income and minority students who attend college less often and graduate less frequently
- Competing for the best prepared students; this includes retaining the top students in Michigan and attracting top students from elsewhere
- Providing the efficient delivery of popular programs
- Providing effective vocational and technical training and preparation for the workplace
- Providing re-training and certification for adults
- Providing quality education at all levels, undergraduate through graduate and vocational training through degree-seeking
- In the case of the research universities, producing high quality research
- Assisting in economic development
- Providing service to the citizens of Michigan and to society as a whole.[101]

Some of these functions or missions are consistent with increased undergraduate degree production, but others are not. Some are directly related to producing more graduate degrees, others are not. In either case, substantially increasing the numbers of students served is not necessarily reconcilable with maintaining educational quality.[102] For example, doubling the number of students by increasing the use of large lectures and decreasing the time that faculty members spend with students may increase the number of degrees produced but decrease the quality of the degrees produced. Kuh and Pascarella and others have shown that quality is increased by having students more actively engaged with their professors and learning experiences.[103]

Some functions of the institution can *run counter* to effective teaching and learning and to degree production. Despite the mythology that teaching and research go hand in hand, the time faculty members spend on research is inversely proportional to the time they spend on teaching.[104] Moreover, faculty members are rewarded more for their research productivity than for their teaching productivity *regardless of type of institution.* Essentially, research and scholarship are pitted against teaching and other educational outcomes. In his *Scholarship Reconsidered*[105] argues that the greatest challenge to the modern American university is better service to the public, and that the best ways to achieve this goal are to improve the quality of the student learning experience and to find better ways of balancing teaching and research.

Massy has shown that colleges and universities are the ultimate nonprofit organizations, in the sense that they produce *value* (i.e., benefits) for individuals, the state and society rather than *profit*.[106] Colleges and universities often act as if they provide their greatest value by focusing on quality (and, to a lesser degree, prestige) and by allocating their resources to maximize it. What the state values – in the case of the Cherry Commission, the increased production of college degrees and increased participation in colleges and universities by citizens – is not always what the institution values. At research universities in particular, even as they pay close attention to local and state needs, institutional leaders must at the same time make sure that their faculties maintain their scholarly stature within their respective academic disciplines.

Michigan colleges and universities are not a homogeneous group. Three institutions are defined by the Carnegie Foundation for the Advancement of Teaching[107] as Doctoral/Research Universities-Extensive, i.e., among the leading producers of Ph.D.s and R&D expenditures in the nation. Among them one is a land-grant institution paying close attention to its role in the state,

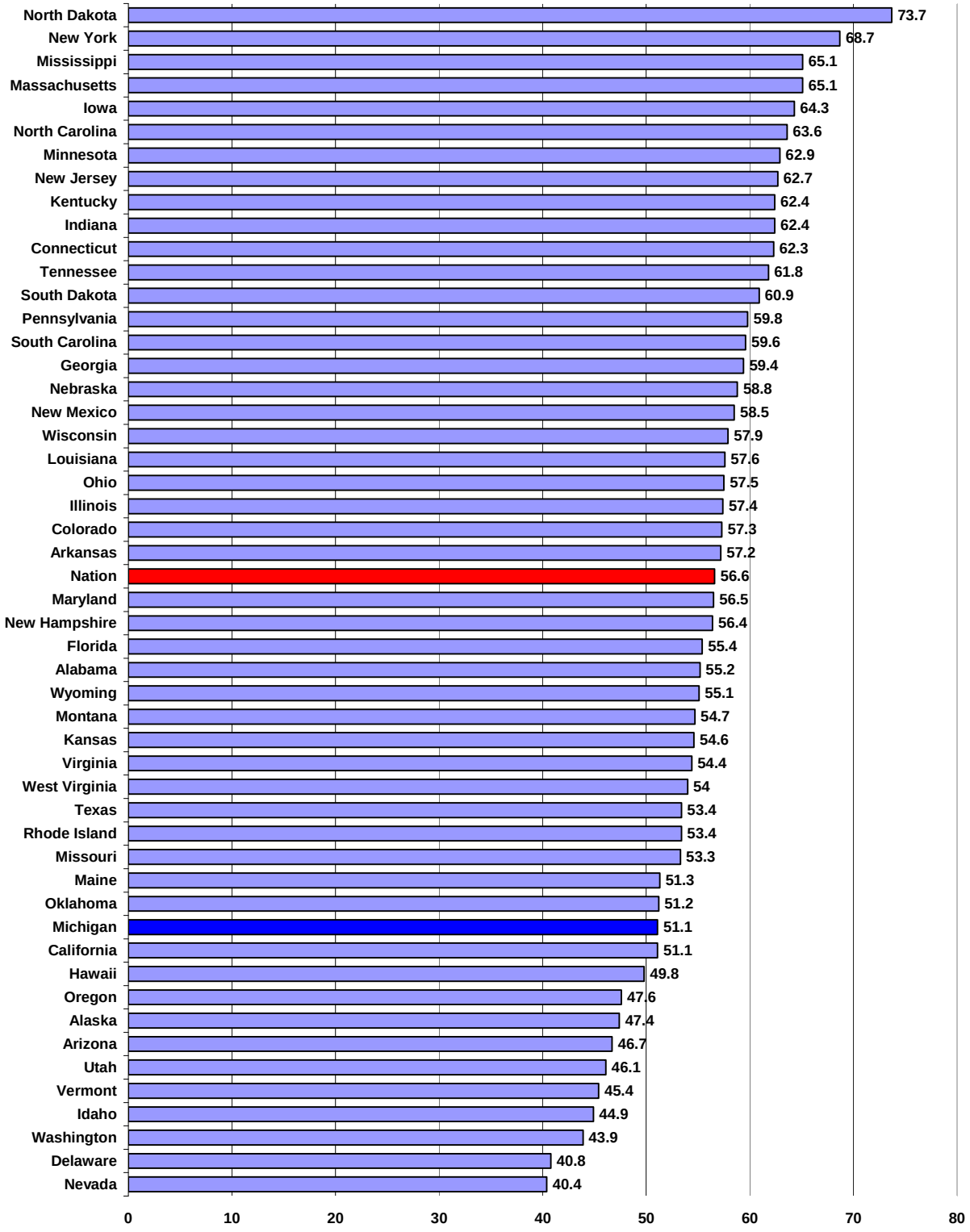
one is an urban university with close ties to the City of Detroit, and the third provides as much service to the nation as it does to the state. And these are just the research universities! The state also has public master's level colleges and universities, community colleges, private liberal arts colleges, and a variety of other types of institutions. Some of these institutions, particularly research universities and elite liberal arts colleges, serve students who are very well prepared to succeed in college. Others serve students much less well prepared for college work; sometimes these students are the first in their family ever to attend college. Within community colleges, some students seek to prepare and transfer to 4-year institutions while other students take a course or two as part of their job requirements. The diversity of mission represented by Michigan's colleges and universities makes the implementation of the Cherry Commission recommendations all the more difficult.

The magnitude of this challenge is considerable. On the one hand, the state has an enviable set of public and private colleges and universities of substantial national stature that appeal to a broad array of students throughout the state, the nation and the world. Many high school students consider it "natural" to go to college and seek interesting careers and high paying jobs as a consequence of their educational attainment. It is relatively straightforward for students with this world perspective to anticipate contributing to the emerging knowledge-based economy, which is already closely linked with Michigan's higher education sector.

On the other hand, for generations those who worked in the Michigan manufacturing sector viewed the high school diploma as the only educational requirement for getting a good-paying job that would last a lifetime. Education from this perspective was less of an investment in human capital or in future potential than a hurdle to jump on the way to a well-paying, well-established, primarily local career in manufacturing. Although these traditional manufacturing careers largely have disappeared, the cultural residue of such a history works directly against the need for increased educational attainment and the recognition of its importance in future economic and personal well-being.

Whether the goal is the high likelihood of increasing individual wages and career earnings or the possibility of improving economic development with increased educational attainment, the current participation of Michigan residents in higher education indicates the magnitude of the challenge to the state. In 2002, Michigan ranked 39th out of 50 states in college-going rates of high school graduates, more than 20 percentage points lower than leading states.[108]

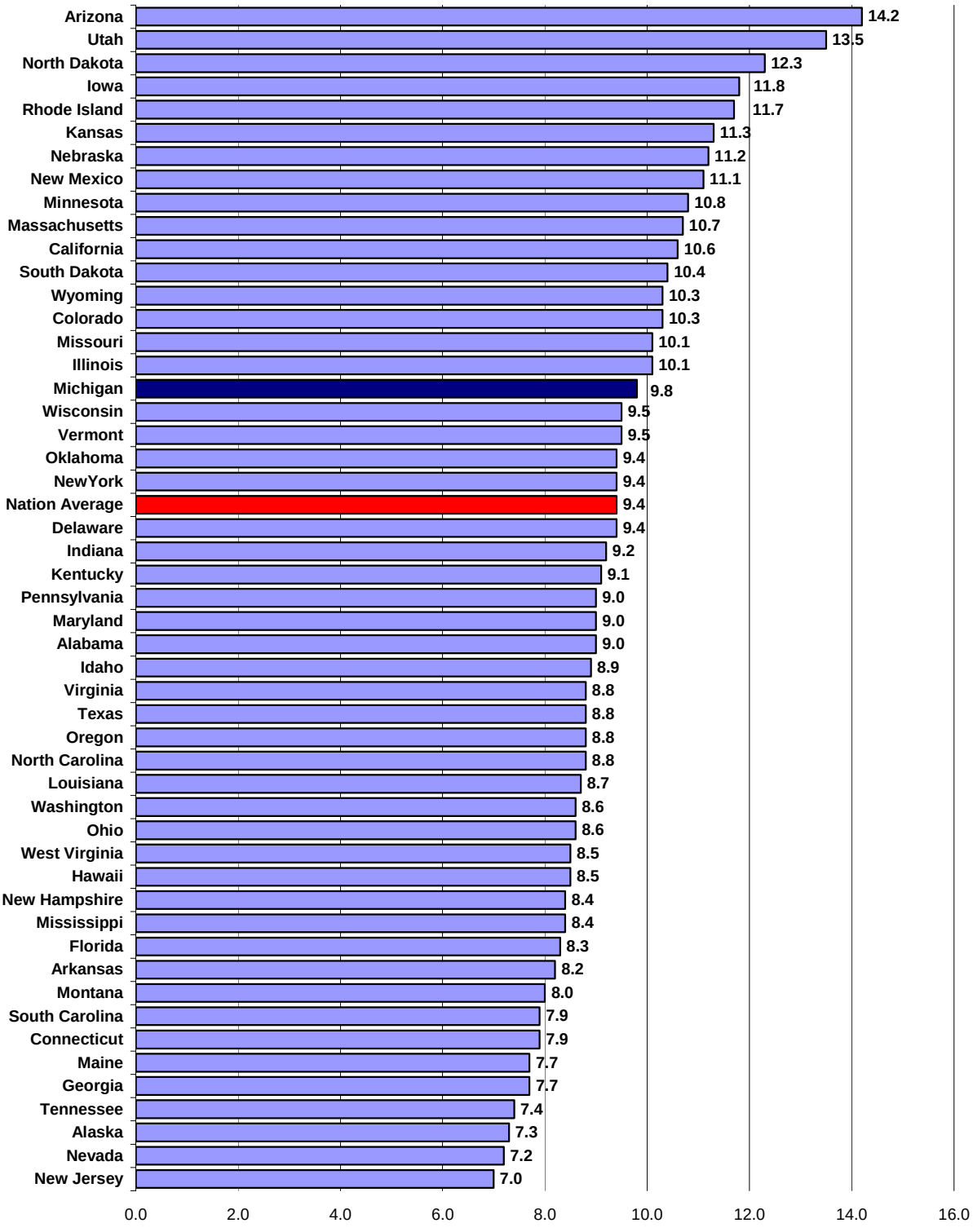
Figure 4
College-Going Rates of High School Graduates



Michigan's participation rate that year was 51.1 percent, below the national average of 56.6 percent.[109] According to the National Center for Public Policy and Higher Education, the

percentage of adults aged 25 or older enrolled part-time in any type of college or university, a principal target audience for re-training and advanced skills development, was 4.1 percent in 2004. This percentage, below the national average, represents an almost 25 percent decline since 1994.[110] On a more positive note, Michigan is tied for 20th in graduation rates within 6 years of college entrance; Figure 5 shows that Michigan ranks 17th in the percentage of the population enrolled in some form of higher education. For almost all measures of higher education attainment, African-Americans and Hispanics fare worse than the state averages.[111]

Figure 5
Percent of Total Population Enrolled In College, 18 – 64 Year Olds, 2004



Section V
Implementing the Cherry Commission Recommendations: Implications for Policies and Practices

Calculating not just the *feasibility* but the *advisability* of implementing the Cherry Commission recommendations is a complex undertaking. It is not just a matter of the cost of implementation, or even a matter of the relationship between costs and benefits. It involves the interplay between cost, benefits and access, and the relationship of all three to the quality of the educational experience provided by Michigan's colleges and universities.

The Cherry Commission's interest in and support of using increased educational attainment to generate economic benefits for the state and its residents relies implicitly on maintaining or even increasing the quality of education, professional preparation and training, outreach and research provided by Michigan's colleges and universities. No one suggests that lowering quality to achieve greater access and degree production is the path to economic renewal and vitality. Typically, however, the conversation among policy makers about cost does *not* take benefits and quality (and even sometimes access) into account.

This preoccupation with cost is not surprising, given the increases in tuition costs in the past decade (even though many students and families over-estimate these costs) and the apparent decline in affordability of higher education (even though financial aid continues to make it possible for millions of students to attend a college or university). More families than ever wonder whether they can afford to send their children to college.[112] And they want to send them to college. Parents especially feel that "the costs of [their child] not going [to college] outweigh the price of attendance, even at the higher tuition levels."[113]

Fortunately, Michigan has an enviable set of colleges and universities. The three research-extensive universities are among the 61 top producers of research and development in the nation. Two of these institutions are in the top 40. The state has strong public post-secondary institutions throughout, ranging from small regional campuses to emerging doctoral-granting and research universities. The state has a network of community colleges that plays an important role locally, regionally and statewide. Michigan has a strong group of private colleges and universities, too, and a growing sector of for-profit institutions that provide needed education and especially training.

When examining the cost of higher education, it is important to keep in mind the balancing act of keeping costs reasonable to provide greater access while at the same time maintaining quality, increasing degree production capacity while maintaining the strength of university research and outreach.

Implications for the Higher Education "System" in Michigan

The Cherry Commission's goals of increased college participation and degree production will play out very differently at Michigan's colleges and universities because of the substantial variation in their nature and missions. For example, it may be easier to increase undergraduate

degree production at institutions without doctoral programs or a heavy emphasis on research than at the flagship institutions. At the same time, undergraduate institutions that primarily serve less well-prepared students may find it more challenging to increase their graduation rates than would universities with better prepared students.

To double the percentage of residents obtaining a college or university degree or credential of some type – the primary emphasis of the Cherry Commission Report – Michigan's colleges and universities must either enroll more students or graduate more of the ones they have now – ideally both. Key questions include:

- Where do Michigan's colleges and universities stand nationally on enrollment and degree completion?
- How do these patterns play out institution by institution?
- What is the capacity of Michigan's colleges and universities as currently configured and supported to handle additional enrollments and/or to graduate more of their students?

Part of the challenge of implementing the Cherry Commission recommendations is the unique governance structure of higher education in Michigan. Simply put, there is no unified system. Michigan is home to 48 for-profit institutions, 45 of which focus on 2-year degree programs or certificates. There are 31 2-year colleges, 30 of which are public community colleges. The state contains 15 private liberal arts colleges, 8 public and 8 private Master's-level institutions, and 7 public and 1 private Doctoral/Research universities, including three labeled Doctoral/Research Extensive to indicate their top standing in producing Ph.D.s and research.

Encouraging more students, both younger and older, to enroll in post-secondary education is the first challenge. In 2004 Michigan colleges and universities enrolled 593,524 students.[114] In 2004-5, the state's institutions produced 110,589 degrees of all types.[115] The National Center for Higher Education and Public Policy (NCHEPP) reports in its *Measuring Up 2004* that Michigan's college participation rate earns a B+. Michigan is above the national average in 18-24 year olds enrolled in colleges and universities, although it is slightly below the top states (38 percent versus 40 percent). When comparing participation rates for individuals over the age of 25, however, Michigan drops slightly below the national average.

The next challenge is to graduate more of the students who do enroll. NCHEPP gives Michigan a C+ for college completion. The percentage of first-time, full-time students completing a bachelor's degree within 6 years is 54 percent, which is about the national average but 10 percentage points below the top states. In both cases, the Cherry Commission understandably has chosen to compare Michigan's performance with the top states when it recommends substantially increasing educational attainment to foster state economic development and transformation. Indeed, in comparison with other states it seems that Michigan has room for improvement in both the percentage of its residents attending college and the rate at which they graduate.

The implications of the Cherry Commission recommendations change considerably, though, when looking at the individual colleges and universities that comprise Michigan higher education. This is necessary because it is the individual institutions that enroll students and produce degrees, not the state. As shown in Tables 20 and 21, there is great variation in enrollment, degree production, graduation efficiency, and capacity among Michigan's colleges and universities.

Table 20
Michigan College and Universities, By Type of Institution and Enrollment, 2004-05

Type of Institution		# Institutions[1]	Enrollment	% of Total Enrollment
For-Profit		**48**	**21,421**	**3.6**
2-year		*45*	*15,661*	
	Business	3		
	Cosmetology	25		
	Design & Technology	8		
	Health Care	3		
	Other	4		
4-year		3	5,760	
Non-Profit				
2-year		**31**	**201,191**	**33.9**
	Public[2]	30	200,846	
	Private	1	345	
4-year		**39**	**322,164**	**54.3**
	Private liberal arts/ Bachelor's colleges	15	30,597	
	Master's Institutions			
	Public	8	94,003	
	Private	8	28,851	
	Doctoral/Research Universities			
	Extensive[3]			
	Public	3	86,755	
	Intensive			
	Public	4	78,941	
	Private	1	3,017	
Specialized		**29**	**48,748**	**8.2**
	Art	2	1,417	
	Business	12	37,804	
	Engineering	1	2,992	
	Law	3	4,287	

[1]Independently-operated campuses are counted as separate institutions. Branches of a centrally-controlled operation are not counted separately.
[2]Includes 2 tribal colleges.
[3]Top producers of Ph.D.s and research and development expenditures.

Table 21
Michigan Non-Profit 2- and 4-Year Colleges and Universities, by Type of Institution, Enrollment, Degree Production, and Six Year Graduation Rates, 2004-05

Type of Institution/ Name	Enrollment	Degree Production				6-Year Graduation Rate[2]
2-Year Public		Assoc.	Bachelors	Masters	Ph.D.[1]	
Alpena	1,268	246				
Bay de Noc	2,355	349				
Bay Mills[3]	401	26				
Delta	10,454	1,028				
Glen Oaks	1,493	145				
Gogebic	959	140				
Grand Rapids	14,144	1,281				
Henry Ford	12,712	1,117				
Jackson	5,837	523				
Kalamazoo Valley	10,634	665				
Kellogg	5,647	729				
Kirtland	1,873	134				
Lake Michigan	4,155	274				
Lansing	19,471	1,278				
Macomb	20,471	2,109				
Mid Michigan	3,232	159				
Monroe County	4,177	416				
Montcalm	2,080	129				
Mott	10,328	787				
Muskegon	4,797	386				
North Central MI	2,699	215				
Northwestern MI	4,609	389				
Oakland	24,296	1,908				
Schoolcraft	10,213	908				
Southwestern MI	2,777	268				
St. Clair County	4,193	542				
Saginaw Chippewa[3]	109	14				
Washtenaw	12,022	897				
Wayne County	11,858	991				
West Shore	1,320	116				
2-Year Private						
Lewis College	345	38				

[1]The Ph.D. category includes professional degrees.
[2]Graduation rates for public 2-year colleges are not included because many students enroll without intending to obtain an Associate's degree.
[3]Tribal College.

Table 21 – Continued
Michigan Non-Profit 2- and 4-Year Colleges and Universities, by Type of Institution, Enrollment, Degree Production, and Six Year Graduation Rates, 2004-05

Type of Institution/ Name	Enrollment	Degree Production				6-Year Graduation Rate (%)
4-Year-Private Liberal Arts/Bachelor's		**Assoc.**	**Bachelor's**	**Master's**	**Ph.D.**	
Adrian	1,007	9	213			47.1
Albion	1,867		341			70.5
Alma	1,268		231			70.6
Ave Maria	121		39			NA
Baker-Flint	6,034	451	147			26.7
Baker-Muskegon	4,433	419	122			24.6
Baker-Port Huron	1,505	144	75			21.4
Calvin	4,180		913	12		75.9
Concordia	557	1	86	21		49.1
Finlandia	515	49	49			NA
Hope	3,112		652			73.1
Kalamazoo	1,234		271			77.4
Olivet	1,037		132	17		37.4
Rochester	992	15	278			37.8
Master's – Public						
Eastern Michigan	23,862		2,923	1,135	12	41.0
Ferris State	11,803	844	1,412	158	149	32.8
Grand Valley State	22,063		2,938	920		49.8
Lake Superior State	2,888	95	478			37.7
Northern Michigan	9,331	137	1,198	156		46.7
Saginaw Valley State	9,448		1,084	502		35.1
U. Michigan-Dearborn	8,420		1,155	619		49.7
U. Michigan-Flint	6,188		907	206		37.4
Master's – Private						
Aquinas	2,235	2	381	160		51.2
Cornerstone	2,412	51	273	90	14	39.6
Lawrence Tech.	4,058	36	435	434		45.7
Madonna	4,343	8	509	160		49.7
Marygrove	4,610	13	101	2,161		27.5
Siena Heights	2,161	14	609	76		45.7
Spring Arbor	3,511	5	757	339		50.7
U. Detroit-Mercy	5.521	2	550	404	212	52.7

Table 21 - Continued
Michigan Non-Profit 2- and 4-Year Colleges and Universities, by Type of Institution, Enrollment, Degree Production, and Six Year Graduation Rates, 2004-05

Type of Institution/ Name	Enrollment	Degree Production				6-Year Graduation Rate[2]
Doctoral-Intensive - Public		**Assoc.**	**Bachelors**	**Masters**	**Ph.D.[1]**	
Central Michigan	27,683		3,549	2,548	78	55.4
Michigan Tech.	6.527	28	1,048	185	44	62.1
Oakland U.	16,902		2.012	886	20	46.7
Western Michigan	27,829		4,291	1,424	95	54.7
Doctoral-Intensive – Private						
Andrews	3,017	5	293	167	133	38.5
Doctoral-Extensive Public						
Michigan State U.	44,836		7,733	2,004	774	71.2
U. Michigan – Ann Arbor	39,533		5,880	3,563	1,406	86.6
Wayne State U.	32.386		2,293	2,347	682	31.7

What are the implications of this variation for the Cherry Commission's recommendation to double the number of college graduates in Michigan? The for-profit sector, although growing, accounts for less than 4% of all enrollments in the state. It is unlikely that the for-profit sector can be a major contributor to overall degree production in the state, even if the University of Phoenix grows significantly. Community college enrollments comprise a third of the state total, 4-year colleges and universities more than one-half. Institutions specializing in certificate programs account for about 8% of all enrollments. Private liberal arts colleges and private master's level universities account for roughly 10 percent of all enrollments in the state. Although they play an important role in providing alternatives for residents, and many of these institutions are of very high quality, it seems unlikely that any substantial expansion of state higher education capacity will come from the private sector. The state does not control these institutions and in any case many of them focus on achieving quality by keeping enrollments down and student/faculty ratios low. The special certificate sector, though small, is growing and may be able to expand access especially for individuals desiring training and re-training in business fields. Overall, however, it seems that the most likely sectors of the higher education "system" to meet increased demand for degrees will come from the public 2- and 4-year institutions.

Public community colleges vary substantially in enrollment. They also vary in the reasons that their students enroll in them. Some students seek an associate's degree in order to transfer to a 4-year institution. Others take courses for job training or for personal enjoyment. Because community colleges typically respond to changes in student demand and local need rapidly, it may be possible to expand this sector. To increase the enrollment capacity of Michigan's public 2-year colleges, however, the investment by the state and localities would likely be substantial. One reason is that the capacity and demand in different locations varies. Community colleges with small enrollments are located in areas with smaller population bases. It is easier to conceive of expanding access by enlarging the larger community colleges; the scale-up costs would be less and the enrollment demand is likely higher. The key questions here are whether the larger campuses can expand, have the right mix of faculty to handle growth fields, are prepared to boost their transfer programs to 4-year colleges and universities, and whether enough prospective students want to start their college careers at community colleges.

That leaves the 4-year public institutions. Here the variation is greatest and the policy implications the most profound. The graduation rates at the two largest and most prestigious institutions in the state – the University of Michigan-Ann Arbor and Michigan State University – already equal or exceed those of the most prestigious liberal arts colleges in the state. It is unlikely that UM and MSU can achieve dramatically higher efficiencies in graduating their undergraduate students – at least not enough to make much of a difference in overall degree production within the state. The state could increase their size, although both campuses might resist the effort because of the likely compromise in educational quality. Moreover, the state has an interest in both institutions maintaining large research programs, and a dramatic increase in enrollment at either school, particularly undergraduate enrollment, might hamper the research productivity at each institution. It appears that some undergraduate degree production gains can be made at Wayne State University, which has a relatively low graduation rate. Even here, though, the contribution to the degree production overall in the state is likely to be modest, at least by the standards set by the Cherry Commission. Finally, all three institutions contribute substantially to the production of graduate degrees in the state, another factor to be taken into account when considering how best to increase degree production in the state.

The four public Doctoral/Research Intensive universities – those producing fewer Ph.D.s and generating fewer research dollars than the Doctoral/Research Extensive universities – and public Master's-level institutions seem the most likely place to add degree production capacity, especially for undergraduates. As before, the costs may be considerable, especially if facilities and faculty members need to be added. Two of the four institutions in this sector – Central Michigan University and Western Michigan University – and to a lesser extent Oakland University have expanded considerably in the past decade. (The fourth, Michigan Technological University, is a specialized university located in the Upper Peninsula.) However, these institutions have encouraged their faculty members to increase their engagement in research – a possible conflict with a large increase in enrollment capacity. Graduation rates at Central and Western are about 50 percent, which suggests that some combination of growth and degree completion efficiency can result in larger degree production for the state.

The cost of both expanding capacity and increasing degree completion at Michigan's eight public Master's-level institutions may be substantial. These institutions, especially those in the western part of the state, are both growing and expanding capacity. Their graduation efficiency,

though, is modest: only a third to a half of their entering freshmen graduate within 6 years. It may be that the students attending these institutions are less well prepared for academic work than those in the Doctoral/Research universities. It may be that more of their students work full-time, or that more of them are the first in their family to attend college, both of which affect college completion. These institutions may also require upgrades to their instructional environments and facilities.

These data suggest that achieving the Cherry Commission's goal of doubling degree production in Michigan will not be easy. State (and possibly private) investments to achieve Cherry Commission goals must carefully consider the institutions involved, both in terms of their capacities for increased degree production as well as the consequences of new priorities for the other contributions they make to the state. Whichever policy course is chosen, it is safe to assume that new resources will be required and that the cost will not be trivial.

Prospects for Increasing Access and Affordability while Maintaining Quality

The Cherry Commission can be taken to task for recommending universal participation in Michigan's colleges and universities rather than establishing as the benchmark the participation rates in top states. The Commission's lack of attention to cost and to who will pay for this expansion in educational opportunity also is an obvious shortcoming. What the Cherry Commission got right, though, is more important than all of its shortcomings: the State of Michigan faces a fundamental economic restructuring. One key – perhaps the key – to a successful economy is a more highly educated populace capable of participating in and contributing to the emerging economy of the 21st century. Greater access to and completion of higher education certificate and degree programs may not be the only answer to the state's economic future, but it is undoubtedly a fundamental part of it.

The costs to the state, the colleges and universities and the students to achieve a substantial increase in overall educational attainment will likely be very high. It is not in the state's interest to increase enrollment radically without making sure that colleges and universities have the capacity to educate large numbers of new students. The loss in the quality of education and training would far outweigh any gains in access. This scenario hardly seems likely to improve the state's economic future.

It is likely that some "scaling back" of the Cherry Commission's expectations for rates of participation in colleges and universities is called for. It is also clear that additional resources from the state, however much needed, will only be as effective as the strategic allocation of those resources to state colleges and universities. Some state colleges and universities are already very efficient in graduating their students. It is unlikely that either Michigan State University or the University of Michigan-Ann Arbor will produce many more bachelor's graduates without greatly increasing enrollments, an approach likely to reduce quality and adversely effect the research and development and graduate student production that also help the state economy. Continued state investment in these institutions seems essential to continue their ability to contribute in these various ways to the future of the state. The other highly efficient institutions in graduating students are private; the state has little influence over these institutions and in any case their capacity for adding significant numbers of new students is very limited.

Less clear are the investment options for the public colleges and universities with less efficient graduation rates. Increasing the capacity of many of the state universities, especially those with low graduation efficiency, is not simply a matter of giving more appropriations for them to enroll more students. It also requires a greater investment in infrastructure, facilities, and faculty members. It may involve additional student services, because many students attending state colleges and universities with lower graduation rates are less well-prepared for college than their peers at the more selective institutions.

Recommended Strategies and Actions

- To overcome misperceptions about the cost of attending college and to help students and families prepare for paying for higher education, the State should actively disseminate information about the price of colleges and universities and the sources of financial support for students and families.

- Increased state investment in higher education will be required to increase access to and graduation from Michigan's public colleges and universities.

- In addition to general state subsidies, the State of Michigan might consider more targeted investments to achieve specific economic goals. Some of these efforts, such as the biotechnology corridor, are already underway. Strategic investment by the state in high technology 2-year programs at community colleges to provide skilled workers for current industries is another step. Each of these strategies should be seen as supplemental to the emphasis on increased access; they will not be accomplished simply by increasing general state subsidies for higher education.

- Currently the State only has a limited role currently in providing financial aid for college students. Most of its focus has been on merit scholarships. Although federal support remains the largest component of student financial aid, colleges and universities, public and private, increasingly have borne the cost of providing financial aid to students. The State of Michigan should consider increasing its role in providing financial aid to students. It will recoup this amount through loan repayments while making it possible for more students to attend.

- Improving access and achieving greater college graduation efficiency depends in part on the preparation of students in the public schools. State efforts to improve the preparation of K-12 students will increase the odds of greater student participation in and successful completion of higher education.

Implementing the Cherry Commission Recommendations

State policymakers face difficult but crucial decisions about higher education funding in Michigan. The Cherry Commission recommendations are irrelevant if they do not take into account two fundamental facts: 1) the cost of attending college has risen and will almost certainly continue to rise; and 2) college attendance is voluntary. If a more educated, skilled workforce is the key to regaining the kind of prosperity the people of the state once had, our

elected leaders must help make it possible for Michigan citizens to choose to pursue post-secondary opportunities.

Even if the State of Michigan dramatically increases its appropriations for state colleges and universities, prospective students and their parents should count on saving more money for college. After World War II, a generation of state and federal policies actively supported higher education as a public good. However, the past three decades have seen a fundamental shift from public to private funding for higher education, with no evidence that this trend will be reversed. Whether by taking advantage of Michigan's acclaimed college savings plan or seeking information about the cost of college and making financial plans accordingly, it seems very likely that students will bear a major share of any increase in the price of attending college in the future. At the very least, their share of the financial burden will not decrease.

Legislators also have important role to play beyond the appropriations process. The lack of information about the cost of going to college needlessly leads some people to opt out of the educational process. Low-income youth and racial and ethnic minorities are the most prone to fall into this trap. A more active role by state leaders in explaining and disseminating the cost of going to college as well as explaining the costs of *not* doing so seems fundamental to helping shift the state's culture toward more active interest in higher education attainment.

Michigan's institutions of higher education have their own responsibilities in helping Michigan reach its long-term goals. A fundamental part of making college affordable and increasing access is cost containment by colleges and universities. There is some evidence of such cost efficiency, such as when colleges and universities use more on-line services and reach more students without increasing the number of faculty. Colleges and universities increasingly use less expensive part-timers to teach students, which increases efficiency but may adversely affect quality if taken to an extreme.[116] Most state institutions in Michigan outsource at least some auxiliary functions, such as food service or bookstores, to save money.

Where state colleges and universities can improve is in better estimating the cost of producing instructional, research, and service outputs and goods, making strategic choices between these functions, and allocating resources strategically rather than on the basis of incremental budget changes from year to year.[117] Colleges and universities should also consider providing needed services *within the context of state higher education as a whole* rather than individually trying to be "all things to all people" and trying to move "up the prestige ladder." Finally, whatever tradeoffs and choices the citizens of Michigan and their elected representatives make, it is up the colleges and universities in Michigan to ensure quality. Ultimately, tradeoffs in favor of greater access and lower cost that result in lower quality are not in the state's interests. Finding the right balance between cost, access and quality is crucial to the state's economic future.

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