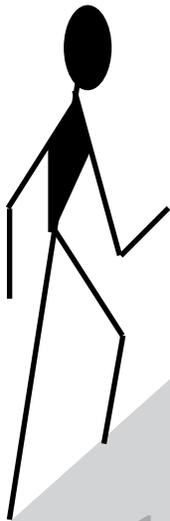


A Must-Have for Pennsylvania Part Two: Investment in Higher Education for Growth and Opportunity

by Stephen Herzenberg, Mark Price, and Michael Wood



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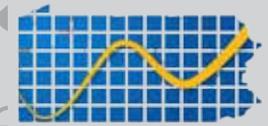
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PENNSYLVANIA
Budget and Policy Center

October 2014

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Executive Summary

Pennsylvania's deep cuts in funding to K-12 education since 2010-11 have drawn a great deal of attention in recent months. Less widely recognized is the fact that Pennsylvania enacted even deeper cuts, on a percentage basis, to funding for public higher education in the same period. Four-year colleges received the largest reductions in funding, including an 18% cut to state support for the Pennsylvania's most affordable four-year options, the 14 state-owned Pennsylvania State System of Higher Education (PASSHE) universities. Even before these cuts, Pennsylvania ranked low among states in funding for higher education and in the affordability of public higher education. Given the importance of higher education to economic growth and to opportunity for individuals, underinvesting in higher education represents a clear case of shooting ourselves in the foot. Short-sighted decisions to manage the state's recovery through cuts alone, rather than raise the revenue needed to invest adequately in higher education, sacrificed the longtime well-being of the Commonwealth and its citizens. These cuts have also held back the state's economic recovery, especially in more rural areas that are home to the state-owned schools.

This report summarizes key insights from the economic research literature on the importance of higher education. It then presents basic information on Pennsylvania's investment in higher education. We focus especially on the 14 public community colleges and 14 state-owned universities that are the most affordable and accessible to middle- and low-income Pennsylvania families. In many comparisons with other states we also include in our analysis Pennsylvania's investment in state-related higher education institutions (Penn State University, Pitt, Temple, and Lincoln). State support for those institutions is included in the main national databases that compare public higher education funding and tuition, across the 50 states. Our main findings follow:

States and regions with a well-educated workforce enjoy faster economic growth and higher overall wage levels.

- In a study of 261 metro areas, each one year increase in average education beyond high-school was associated with a rise in Gross Domestic Product per capita of 17.4% and wages of 17.8%.
- States with the largest share of college-educated workers enjoy hourly wage levels nearly 50% higher than states near the bottom. Pennsylvania falls in the middle on both college-degree share and wage levels.

High levels of education also powerfully influence opportunity for individuals.

- ***Pennsylvania's college-educated workers earn hourly wages more than three-quarters higher than the wages of workers with only a high-school degree.*** While this gap has not widened since 2000, it remains far larger than in 1979.
- ***The unemployment rate of college-educated workers in Pennsylvania is roughly half that of groups with lower levels of education.*** This rate remained under 5% throughout the Great Recession and has now fallen to 3.6%.

Despite the strong association of educational attainment with better economic outcomes for the state and for individuals, Pennsylvania sharply underinvests in higher education.

- ***Pennsylvania ranks 47th among states in funding for public higher education per \$1,000 of personal income and 48th in funding per capita.***
 - On both measures, Pennsylvania's funding is only slightly over half (55% to 57%) of the U.S. average, and roughly a quarter of the investment of the leading states.

- The top four states for investment in higher education are resource-rich states with severance taxes that help raise the revenue needed to invest in two- and four-year colleges (Alaska, New Mexico, North Dakota, and Wyoming).
- In terms of college access and affordability, underinvestment in community colleges and four-year State System universities is most pivotal. These institutions serve overwhelmingly Pennsylvania students (87% in the case of PASSHE), including many first-generation students, and other low- and middle-income students who could not otherwise afford college.
- ***Pennsylvania has the third-highest tuition and fees at its public four-year colleges***, with a cost over 50% above the U.S. average, and tuition and fees 3.35 times those in lowest-cost Wyoming. Even the average tuition and fees at PASSHE schools considered alone (which are lower than tuition and fees at state-related universities) would give Pennsylvania the ninth-highest tuition and fees of the 50 states.
- ***Pennsylvania has the third-highest average student debt (\$31,675) among graduates of four-year colleges, and 70% of graduates have some debt (fourth highest among states)***. While state-owned schools cost less to attend, their graduates still have average debt of around \$30,000.
- ***Inadequate funding for higher education perpetuates Pennsylvania's low ranking for share of adults ages 25-64 with more than a high-school education. The state ranked 41st by this measure in 2013***. While the state progressed on this measure from 2000-02 to 2010-11 (climbing from around 45th to 40th), the state has not progressed since 2011.

Even though the state already had a low ranking for higher education funding and affordability, **Pennsylvania cut higher education funding more deeply than most states in recent years.**

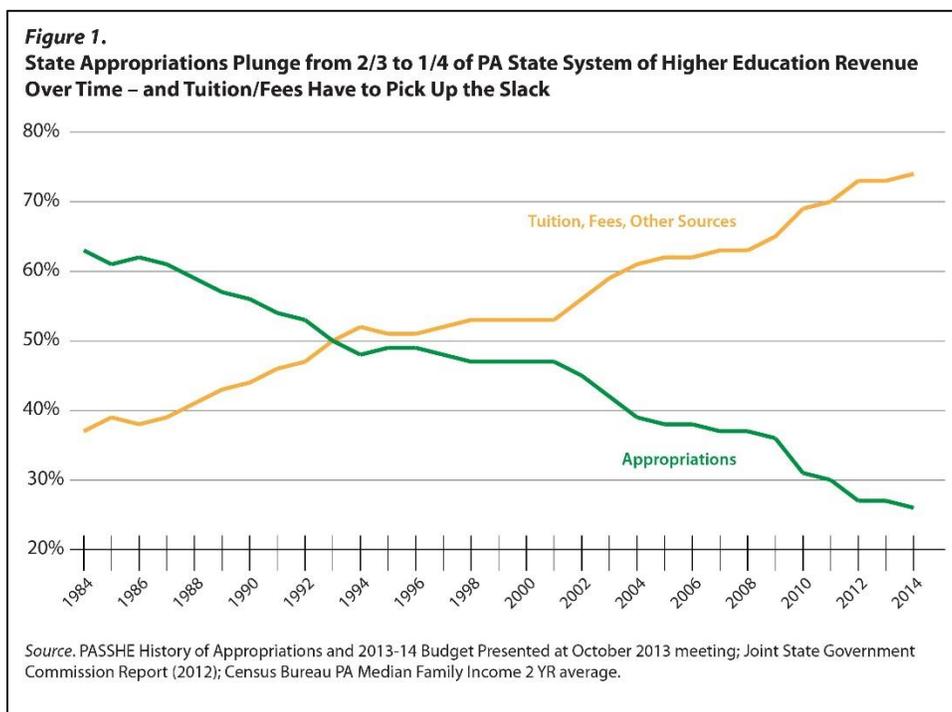
- ***In 2011-12, the state slashed funding for state-owned universities by \$90 million***, and it has kept those cuts in place since.
- ***From 2010-11 to 2013-14, Pennsylvania higher education experienced a funding cut of 11.8%, the fifth largest cut nationally.***
- Due to the lack of funding, over 900 positions at the state's four-year Universities have been eliminated or left vacant, over 95 programs have been cut or placed under a moratorium since 2010-11, and tuition has increased by 15 percent.
- ***In the 1980s state financial support accounted two thirds of the budget of the state's state-owned four-year public Universities. Today that figure has fallen to roughly 25%***, placing the financial burden on Pennsylvania students and families.

As a first step towards restoring the promise of affordable higher education for the middle class, Pennsylvania should restore the funding cut from PASSHE schools and community colleges in 2011-12, and invest sufficient state funds to maintain current tuition levels for the next four years. These steps would provide a foundation for a collaborative search for long-term solutions to the crisis in higher education affordability, including creative approaches to raising revenues and “bending the cost curve” so that tuition increases less quickly.

Introduction

This report summarizes key insights from the economic research literature on the importance of higher education and presents the basic facts on Pennsylvania’s funding of higher education, focusing on the state-owned, four-year universities and two-year community colleges that are the most affordable for middle-class families. Pennsylvania’s 14 state-owned universities make up the Pennsylvania State System of Higher Education (PASSHE) (www.passhe.edu), which enrolled 112,225 students in 2012-13 (according to IPEDS data, online at <http://www.passhe.edu/FactCenter/Pages/System.aspx>). Pennsylvania also has 14 community colleges, which enrolled 218,952 credit students and 165,398 non-credit students in 2012-13, according to the *Fact Book 2012-13* published by the Pennsylvania Commission for Community Colleges. In addition, Pennsylvania has four “state-related” universities – Penn State, Pitt, Temple, and Lincoln – that receive substantial state funds.

Figure 1 displays the long-term trends in state funding and tuition at Pennsylvania’s state-owned universities. State appropriations used to provide two-thirds of the revenues of PASSHE schools, but appropriations now provide only one quarter of the revenues. As a result, tuition, fees, and other sources of revenues have had to pick up the slack. The next two sections explain why Pennsylvanians need to worry about low investment in higher education.



Why Invest in Higher Education: The Impact on Economic Growth

Increases in educational and skill levels – what economists call human capital – are primary sources of productivity and economic growth. In fact, they are arguably THE primary source of growth if you take into consideration the role of education in training the innovators and scientists who develop new

product and process technologies. Of course, formal education is not responsible for all productivity-enhancing skills. Many of these skills are acquired through experience (“learning-by-doing”) and peer learning (acculturation into and participation in occupational communities), building on a foundation of formal schooling.

To get at the importance of schooling and other factors in economic growth, economists use a method called “growth accounting.” This approach seeks to disentangle how much of productivity growth results from increased schooling, from increases in the amount of capital available to each worker (the capital/labor ratio), and from “other factors,” including technological change.¹ Over the last century, increased schooling accounts for at least 25% of U.S. productivity growth, with only a tiny part resulting from increases in capital/output ratios. Most of the “other factors” are research and development, and technology adoption that largely results from having a cadre of cutting-edge scientists and innovators and a more educated workforce better able to adopt new methods. Thus, according to Professor Larry Katz, one of the leading U.S. experts on education and growth: “You can make a case for almost all of economic growth being the direct (25%) and indirect (through R&D and technology adoption) result of increased education.”²

Economists also use statistical (“regression”) analysis to explore how much differences in education levels drive economic and wage growth across countries or regions. Using these methods, researchers do their best to control for other factors besides education that impact growth, although it is hard to be confident that they are completely successful.³ In a recent regression study of 261 metropolitan areas, DeVol and co-authors found that “adding one extra year to the average years of schooling among the employed in a metropolitan area is associated with an increase in real GDP per capita of 10.5 percent, and an increase in real wages per worker of 8.4 percent.” These authors also found that the benefits of additional schooling to regional economies grow at higher educational levels. “Adding one year of schooling to the average educational attainment among employed workers with at least a high school diploma is associated with an increase in real GDP per capita of 17.4 percent, and an increase in real wages per worker of 17.8 percent.”⁴

In a simpler correlation analysis, which does not attempt causal explanation, Berger and Fisher found that between 1979 and 2012 higher productivity (measured by gross state product per hour) increases were associated with larger increases in the share of adults with at least a college degree.⁵ They also found that states with the highest share of college-educated workers enjoy hourly wage levels nearly

¹ These “other factors” are called “the Solow Residual” by economists, named after the Nobel-Prize-winning MIT economist Robert Solow who pioneered growth accounting. The measure of productivity that economists use in growth accounting is “Total Factor Productivity,” which analyzes factors that increase total output other than increases in labor and capital inputs (or holding those inputs constant).

² Personal communication with Larry Katz. See also Claudia Goldin and Larry F. Katz, *The Race between Education and Technology* (Cambridge, MA: Harvard College, 2008).

³ One problem is “omitted variable bias.” If factors other than education are omitted from the analysis, and these factors are correlated with educational attainment and with productivity, then estimates of the importance of education will be overstated. Examples of omitted variables possibly correlated with education level are entrepreneurial spirit, or unmeasured individual characteristics (energy/productivity) that make people more willing to move to areas with concentrations of other educated people.

⁴ Ross C. DeVol, I-Ling Shen, Armen Bedroussian, and Nan Zhang, *A Matter of Degrees: The Effect of Educational Attainment on Regional Economic Prosperity*, Milken Institute, February 2013, p. 1 and p. 10; online at <http://www.milkeninstitute.org/publications/view/564>

⁵ Noah Berger and Peter Fisher, *A Well-Educated Workforce Is Key to State Prosperity*, Economic Analysis Research Network (EARN), August 22, 2013; online at <http://www.epi.org/publication/states-education-productivity-growth-foundations/>

50% higher than states near the bottom – with Pennsylvania in the middle on college-degree share and wage levels.

In considering the payoff to investment in education, it is also important to underscore that many of these benefits accrue to people other than the individuals who acquire more schooling. When Pennsylvanians generally become better educated, businesses enjoy a more productive workforce and higher profits. College graduates with higher salaries also buy more at local businesses. All Pennsylvanians benefit when college graduates impose fewer costs on social programs and the criminal justice system; pay more in taxes to local, state, and national government and contribute disproportionately to civic leadership and economic innovation. Since investment in education generates “positive externalities” not solely captured by the individual person who is being educated, it is often described as a public good.⁶ Because we all benefit from having a more educated population it makes sense for all of us to contribute to investment in education via the tax system. By contrast, the more individuals have to shoulder the full cost of their own higher education themselves, the more likely it is that they will under-invest, and all Pennsylvanians will suffer because of this under-investment..

MIT Economist Lester Thurow explained the “public good” benefits of investment in education this way: “...Education and training are not [a matter of ethics and generosity.] I am willing to pay for, indeed insist upon, the education of my neighbors’ children not because I am generous, but because I cannot afford to live with them uneducated.”⁷

Why Invest in Higher Education: The Impact on Opportunity for Individuals

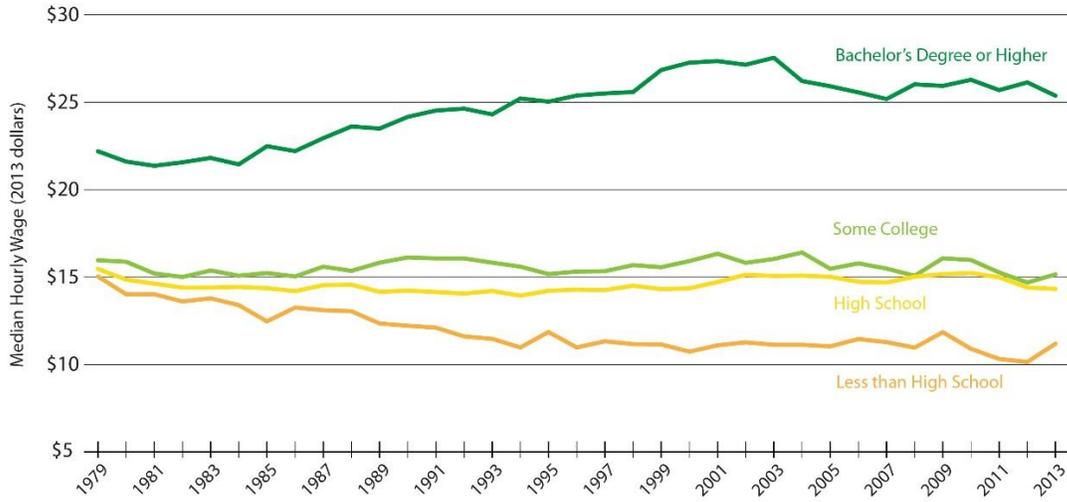
High levels of education also powerfully influence opportunity for individual Pennsylvanians. Since 1979, the wage gap between college-educated Pennsylvanians and less educated groups has nearly doubled (in inflation-adjusted 2014 dollars), from about \$5-\$6 per hour to \$10 to over \$14 per hour (Figure 2). In fact, wages of less-educated groups have not increased at all since 1979; only college-educated workers have seen an increase. As Figure 2 shows, the increase in the wage gap all emerged in the 1979 to 2000 period; since 2000 the median wage of all educational groups has fallen slightly, in part because a rising share of income flowed to the top 1%. Even so, a college degree remains much more important than in the 1970s to access most middle-class jobs.

College-educated Pennsylvanians also have lower levels of unemployment than groups without a four-year degree (Figure 3). The unemployment rate of college-educated workers in Pennsylvania is roughly half that of groups with lower levels of education. The unemployment rate for college-educated workers remained under 5% throughout the Great Recession, and has now fallen to 3.6%.

⁶ Sandy Baum and Michael McPherson, “Is Education a Public or a Private Good?” *Chronicle of Higher Education*, January 18, 2011; online at <http://chronicle.com/blogs/innovations/is-education-a-public-good-or-a-private-good/28329>

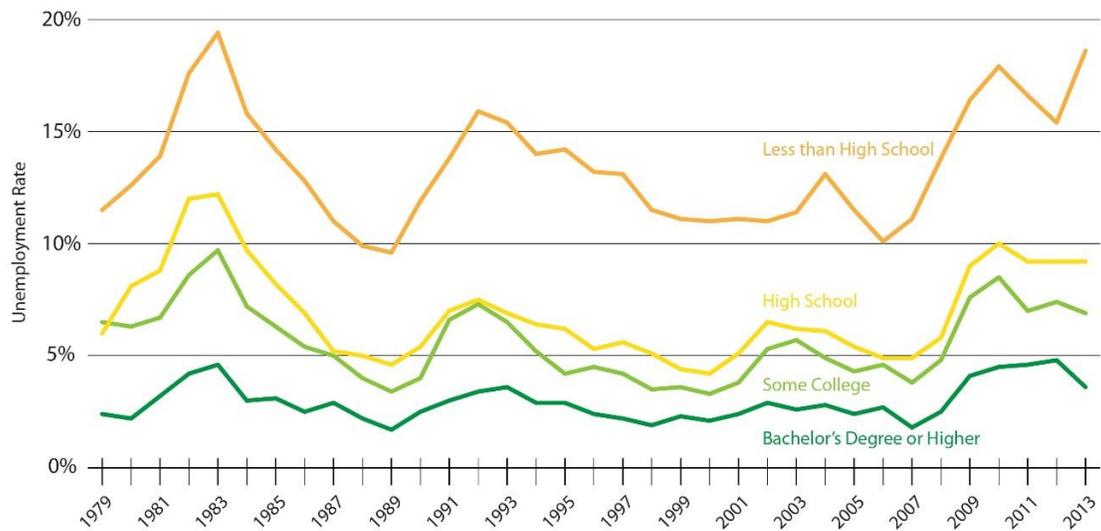
⁷ Lester Thurow, *The Zero Sum Solution* (New York: Simon and Schuster, 1985), p. 187.

Figure 2.
Wage Gap Between College-Educated Pennsylvanians and Less Educated Groups Roughly Doubles Since 1979



Source: Keystone Research Center based on Current Population Survey data

Figure 3.
College-Educated Pennsylvanians Experience Lower Levels of Unemployment

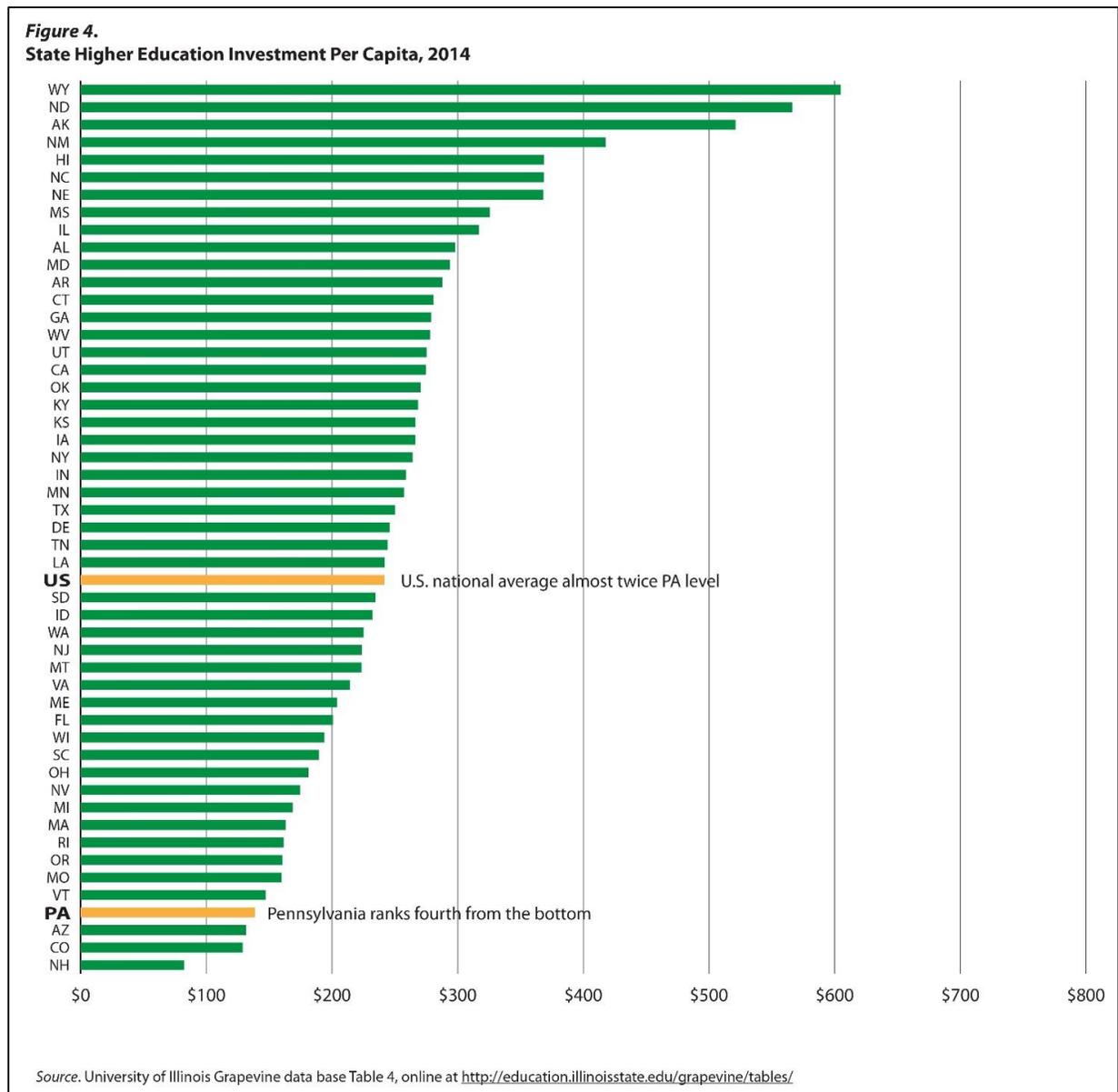


Source: Keystone Research Center based on Current Population Survey data

Pennsylvania's Underinvestment in Public Higher Education

In the global, knowledge-based economy, higher education is critical to economic success and quality of life for individuals, families, and states. Yet Pennsylvania ranks near the bottom on higher education indicators.

Pennsylvania ranks 48th in funding per capita for higher education (Figure 4) and 47th in funding per \$1,000 of personal income. These rankings include Pennsylvania's support for PASSHE, community colleges, state-related institutions, and private colleges. On both measures, Pennsylvania's funding is only slightly over half (55% to 57%) of the U.S. average, and roughly a quarter of the investment of the leading states. The top four states for investment in higher education are resource-rich states with severance taxes that help raise the revenue needed to invest in two- and four-year colleges (Alaska, New Mexico, North Dakota, and Wyoming).



According to the National Center for Education Statistics, Pennsylvania has the third-highest tuition and fees at its publicly supported four-year colleges (including state-owned and state-related institutions), with a cost over 50% above the U.S. average, and 3.35 times those in lowest-cost Wyoming.⁸ Comparing PASSHE schools alone to four-year public institutions in other states, Pennsylvania would still have the ninth-highest tuition and fees. Pennsylvania ranks seventh highest for tuition and fees at public two-year institutions with average tuition and fees of \$4,133, three times those of low-cost California.

Student Debt: A Growing Drag on Economic Recovery

Not surprisingly, given the high tuition rates at its public colleges, Pennsylvania has the third-highest average student debt (\$31,675) among graduates of four-year colleges. Seventy percent of Pennsylvania graduates have some debt, a share that is fourth highest among states.⁹ This Pennsylvania average includes private colleges. The average student debt level for graduates of state-owned universities is only slightly lower, about \$30,000.¹⁰

Nationally, student loan debt now equals \$1.11 trillion and provides a growing drag on consumer demand.¹¹ Average student debt held by 29- to 37-year-olds nationally has grown more than six times since 1989, to \$12,000 per person in 2010, second only to home mortgage debt.¹² Consumer debt does not simply burden college graduates. A quarter of people with “some college” – i.e., without a college degree – have student debt. Roughly a fifth of 29- to 37-year-olds in every income group (from below \$25,000 to over \$100,000) have student debt, along with a third (34%) of African-Americans, and over a quarter of Hispanics (28%). These figures compare to 16% of whites. Diverse, lower-income populations most burdened by debt depend most heavily on affordable and accessible public colleges, such as Pennsylvania’s community colleges and state-owned schools.

As *The New York Times* noted in 2012, “...growing student debt hangs over the economic recovery like a dark cloud for a generation of college graduates and indebted dropouts.”¹³ The *Times* cited a Rutgers University survey of 444 recent college graduates that “found that 40% had delayed making a major

⁸ This ranking (data online at http://nces.ed.gov/programs/digest/d13/tables/dt13_330.20.asp) is for tuition and fees for in-state students. This source lists average tuition and fees in 2012-13 at Pennsylvania public four-year universities as \$12,184 whereas State System Schools alone cost \$10,024 according to the *PASSHE Factbook*.

⁹ The Institute for College Access and Success, the Project on Student Debt, *Student Debt and the Class of 2012*, online at http://projectonstudentdebt.org/state_by_state-sum2013.php

¹⁰ Weighting the average debt at individual state-owned universities by their fall enrollment of full-time undergraduates, average debt of PASSHE graduates as a group in 2011-12 was \$29,819. Since this data is one year older than the overall Pennsylvania average level of debt cited above, average debt for graduates of state-owned institutions is, for all practical purposes, as average debt across all four-year institutions. Data downloaded from <http://college-insight.org/#explore/go&h=454bc82b20abf041b28832ddbdc48b8d>

¹¹ Federal Reserve Bank of New York, *Quarterly Report on Household Debt and Credit*, May 2014; online at http://www.newyorkfed.org/householdcredit/2014-q1/data/pdf/HHDC_2014Q1.pdf

¹² This finding is based on analysis of data from the Survey of Consumer Finance. See Caroline Ratcliffe and Signe-Mary McKernan, *Forever in Your Debt: Who Has Student Loan Debt, and Who’s Worried?* Urban Institute, June 2013, online at <http://www.urban.org/UploadedPDF/412849-Forever-in-Your-Debt-Who-Has-Student-Loan-Debt-and-Whos-Worried.pdf>

¹³ Andrew Martin and Andrew W. Lehren, “A Generation Hobbled by the Soaring Cost of College,” *The New York Times*, May 12, 2012; online at <http://www.nytimes.com/2012/05/13/business/student-loans-weighing-down-a-generation-with-heavy-debt.html?pagewanted=all&r=0>

purchase, like a home or car, because of college debt, while slightly more than a quarter had put off continuing their education or had moved in with relatives to save money.”¹⁴

Underinvestment Perpetuates PA’s Low “Middle Skill” Educational Ranking

Inadequate funding of public higher education perpetuates Pennsylvania’s low ranking for share of adults ages 25-64 with more than a high-school education. As Table 1 shows (based on 2013 data), Pennsylvania ranks reasonably well – at the bottom end of the top third of states – at both the high end of the educational attainment spectrum and the low end. That is, Pennsylvania has the 15th-highest share of people with at least a high-school degree or GED. Pennsylvania also has the 16th-highest share of the workforce with an advanced degree.

The Achilles heel of the Pennsylvania educational attainment spectrum is in the middle. Pennsylvania ranks 41st for the share of the adult population with more than a high-school degree 2013 and ranks 49th for the share of the adult population with “some college.” On the flip side, Pennsylvania ranks second for the share of adults 25-64 with exactly a high-school degree.

Education Level	% of PA Population 25-64 Years Old With Each Education Level	PA Rank (1 = higher; 50 = lower)
At Least a High School Degree	93.1%	15
More Than a High-School Degree	56.1%	41
Some College	12.4%	49
Bachelor’s Degree	20.7%	29
Advanced Degree	11.8%	16

Source. Keystone Research Center based on the American Community Survey

Two obvious explanations for Pennsylvania’s unusual educational profile stand out. One is cultural and historical. In Pennsylvania’s dynamic mass manufacturing economy, men (especially) could acquire a family supporting job with only a high-school degree, possibly leading to the undervaluing of educational advancement in parts of the state.

The second explanation is the lack of accessibility and affordability of public higher education, a point powerfully made by the Legislative Budget and Finance Committee (LBFC) in a report on Pennsylvania community colleges.¹⁵ As the LBFC documented, Pennsylvania’s low educational progress beyond high school is perpetuated by the uneven geographic coverage of the state’s community colleges. Five Pennsylvania regions, encompassing 26 rural counties, have little access to community colleges and have correspondingly low shares of workers with education beyond high school. While community colleges have sought to address this need by establishing growing number of campuses (now 26

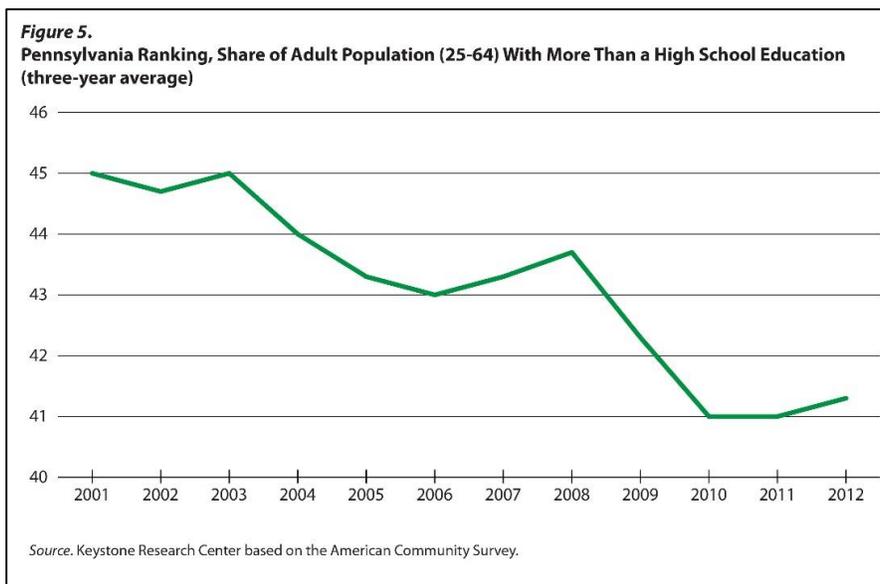
¹⁴ The quote is from Martin and Lehren, “A Generation Hobbled.” The original source is Charley Stone, Carl Van Horn, and Cliff Zukin, *Chasing the American Dream: Recent College Graduates and the Great Recession*, John J. Heldrich Center for Workforce Development, Rutgers University, May 2012; online at http://media.philly.com/documents/20120510_Chasing_American_Dream.pdf

¹⁵ Legislative Budget and Finance Committee (LBFC), *The Need for Public Community College Programs in Rural Pennsylvania*, conducted pursuant to Senate Resolution 2011-147, December 2011; online at <http://lbfc.legis.state.pa.us/Resources/Documents/Reports/415.pdf>

counting main and branch campuses) and satellite instructional sites (bringing the total number of instructional sites to 98), only five of the 26 rural counties have an instructional site within their boundaries.¹⁶ Outside their sponsoring counties or school districts, moreover, community college tuitions are double the already high rates (relative to most states) in sponsoring areas. The LBFC report documents the stunningly low enrollment of residents of rural counties in Pennsylvania community colleges, with a dozen counties having less than 10 full-time students enrolled at any Pennsylvania community college in the fall of 2010.¹⁷ In sum, rural counties remain in need of more accessible and affordable higher education. Informed by the 2011 LBFC report, the legislature, led by Representative Scarnati, did provide in Act 78, the 2014 Fiscal Code bill, for the establishment of a rural community college spanning multiple counties.¹⁸

Reflecting the access to affordable college, **in 13 rural regions that include almost all the rural counties in Pennsylvania, more than half of adults 25-64 have no more than a high-school education.** In the nine-county North Central Pennsylvania region, six in 10 working-age adults have no more than a high-school education.¹⁹ By contrast, 70% or more of adults 25-64 have more than a high-school degree in Allegheny County in the west and Chester and Montgomery Counties in the east.

Looking at changes over time, Pennsylvania as a whole did improve its post-secondary educational attainment ranking slightly from 2003 to 2010 (Figure 5). Since 2010, however, Pennsylvania’s educational attainment improvement has halted, possibly because of the higher education funding cuts described in the next section, which have led to further tuition increases at public colleges.



¹⁶ On the number of branch campuses and satellite instructional sites, see PA Commission for Community Colleges, *Fact Book 2012-13: PA Community Colleges*, no date. For a map showing which Pennsylvania counties have a community college main campuses, branch campuses, or satellite locations, see LBFC, *The Need for Public Community College*, Exhibit 4, p. 25.

¹⁷ LBFC, *The Need for Public Community College*, Exhibit 4, pp. 35-38; see especially Exhibits 7 and 8.

¹⁸ See Printer No. 393 of House Bill 78, Artic XVII-E.1 “Rural Regional College for Underserved Communities;” online at <http://www.legis.state.pa.us/cfdocs/billinfo/billinfo.cfm?sYear=2013&slnd=0&body=H&type=B&bn=278>. For a description of the rural community college concept based on earlier stand-alone legislation (Senate Bill 1000), see <http://www.senatorsarnati.com/senate-passes-sarnatis-rural-regional-community-college-legislation/>

¹⁹ In portions of rural Pennsylvania, Just a note, the Rural Regional Community College in the Northern Tier authorized by the 2014-15 Fiscal Code bill may provide more accessible and affordable education in the near future.

Higher Education Funding Cuts Since 2010

Table 2 presents Pennsylvania's funding of higher education for selected years since 2007-08. It shows that higher education experienced a cut of over \$300 million dollars, or 14.5%, in 2011-12. Community colleges received a smaller cut than other parts of Pennsylvania's higher education system – 10% in 2011-12, with a small increase in funding since then. This smaller funding reduction reflects a recognition on the part of the legislature of the importance of community colleges to maintaining access and affordability to higher education. State-owned universities, Pennsylvania's most affordable four-year public colleges, did not fare as well, experiencing a cut of 18% from 2010-11 to 2014-15. State-related colleges received the largest cut in state funding, 28.9% in 2011-12 with some recovery of funding since (reducing the cut to 24.3% by 2014-15). Since these research institutions depend less on state funding, the cuts in 2010-11 were an estimated 2.6% of their total revenues, about half the roughly 5% reduction in funding that PASSHE schools experienced.²⁰ Table 2 also shows that PHEAA grants have been cut somewhat less than appropriations for both state-owned and state-related universities. One issue we return to in the conclusion concerns the targeting of PHEAA assistance to community colleges and state-owned institutions. Currently, 30% of PHEAA grants, and 38% of their dollar value, go to independent four-year and two-year colleges, the latter percentage being higher than the former because the average size of grant assistance to private colleges is higher than to state-owned, community college (and even state-related) institutions.²¹

As a result of recent budget trends, Pennsylvania now spends more on prisons than higher education as the infographic below illustrates.

²⁰ The combined budgets of the four state-related institutions is currently \$7.8 billion. So the roughly \$200 million reduction in state funding in 2011-12 was about 2.5% to 3% of the total budget of the four schools. The individual budgets for state-related institutions are Penn State \$4.6 billion (<http://budget.psu.edu/Openbudget/default.aspx>); Pitt \$1.94 billion (<http://www.news.pitt.edu/news/university-pittsburgh-trustees-approve-2013-14-operating-budget>); Temple \$1.21 billion (http://www.temple.edu/budget/documents/ApprovedFY14OperatingBudget_000.pdf); and Lincoln \$61 million (<http://www.lincoln.edu/bot/resolution434.html>).

²¹ Estimates based on Pennsylvania Higher Education Assistance Agency, *2013-14 Pennsylvania State Grant Program*; online at <https://www.pheaa.org/about/pdf/yearsummarystats.pdf>. The targeting of PHEAA assistance to public higher education has increased slightly over the past decade: in 2003-04, 40.4% of PHEAA grant assistance went to independent two- and four-year institutions.

Table 2. Pennsylvania Higher Education Funding, 2007-08 to Present (nominal dollars)

	2007-08	2010-11	2011-12	2012-13	2013-14	2014-15*	07-08 to '14-15	10-11 to 11-12	10-11 to '14-15
	Actual	Actual	Actual	Actual	Available	Approved	Percent Cut (minus means an increase in funding)		
SSHE	504,240	503,355	412,751	412,751	412,751	412,751	18.1%	18.0%	18.0%
Community Colleges	229,359	235,741	212,167	212,167	212,167	215,667	6.0%	10.0%	8.5%
State Related (PSU-Temple-Pitt-Lincoln)	689,102	688,377	489,107	514,850	519,067	521,067	24.4%	28.9%	24.3%
Thaddeus Stevens	10,930	10,876	10,332	10,332	10,332	12,332	-12.8%	5.0%	-13.4%
PHEAA	451,968	441,152	422,950	386,125	386,475	391,475	13.4%	4.1%	11.3%
Interdepartment Transfers (estimated)	160,000	160,000	160,000	160,000	160,000	160,000	0.0%	0.0%	0.0%
Other	307,510	225,527	252,233	256,429	263,900	265,700	13.6%	-11.8%	-17.8%
Higher Education Total	2,193,109	2,105,028	1,799,540	1,792,654	1,804,692	1,818,992	17.1%	14.5%	13.6%

Note . Other includes funds for non-state related colleges, higher education related to medical and agricultural occupation, and other items. For compatibility with data elsewhere in this report, we included all higher education funding reported by the Commonwealth to the Grapevine data base at the University of Illinois-Chicago. Interdepartment transfers are included in reporting to Grapevine but not explained. There is a roughly \$34 million discrepancy between the numbers reported here and those reported to Grapevine in 2013-14. The Pennsylvania Department of Education also discovered this discrepancy and is seeking to resolve it.

Source. Governor's Executive Budget, various years

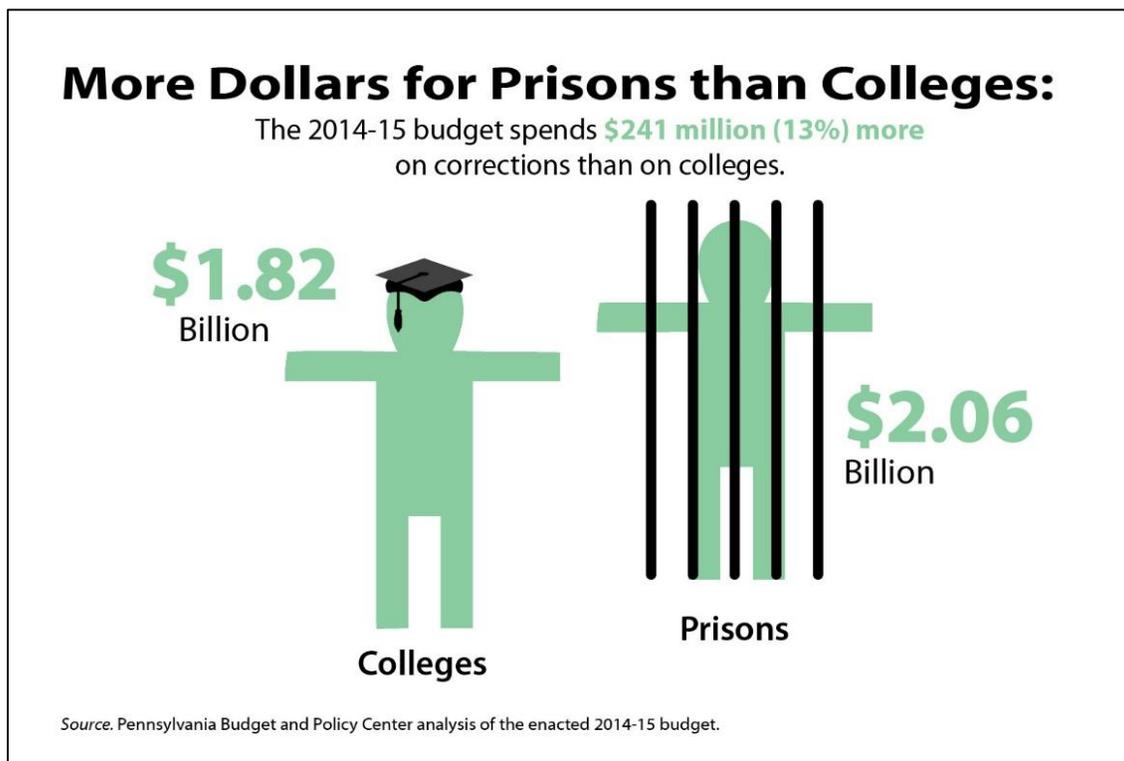
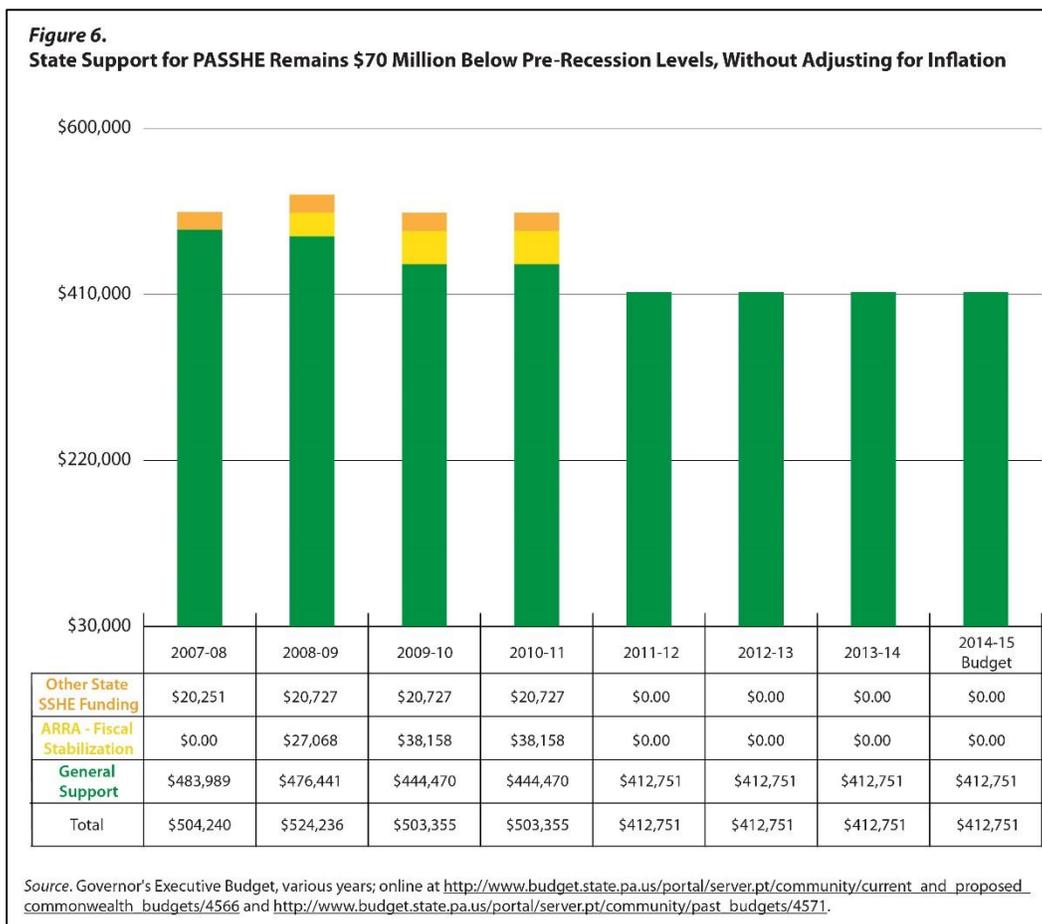


Figure 6 and the table embedded at the bottom of that figure look more closely at state funding for Pennsylvania’s state-owned four-year universities. In 2011-12, the state reduced PASSHE funding by \$90 million. This resulted from reducing PASSHE’s general appropriation by \$70 million, from \$482.6 million in 2010-11 (including \$38.2 million in ARRA funds) to \$412.8 million. In addition, other state-funded SSHE programs totaling \$20.7 million were eliminated or cut, including:

- PASSHE’s \$18.5 million “Program Initiatives” line item, which supports performance funding, was zeroed out.
- Funding to Cheyney’s Keystone Honors Academy was cut by \$475,000, despite a graduation rate two times higher than the national average for Historically Black Colleges and Universities (HBCUs).²²



From 2010-11 to 2013-14 (the latest year comparable 50-state data are available), according to the University of Illinois Grapevine data base, Pennsylvania higher education experienced nominal dollar state funding cuts of 11.8% compared to a nominal increase nationally of 0.7%. Pennsylvania experienced the fifth largest cut among states over this period.²³ Within the PASSHE system, the 2014-

²² State funding for the Pennsylvania Center for Environmental Education (\$368,000) and the McKeever Center (\$213,000) was also eliminated.

²³ Data online at <http://grapevine.illinoisstate.edu/tables/>

15 Pennsylvania state budget keeps cuts in place by funding PASSHE’s general appropriation at \$412.8 million and not restoring the eliminated line items.

Between 2007-08 and the 2014-15 state budget, Pennsylvania higher education has experienced dollar cuts of 17.1% in state funding. Taking inflation into account, we estimate this cut at 25.4% if we use the overall U.S. Consumer Price Index, and nearly 29% if we use the price index computed specifically based on costs of inputs to higher education.²⁴

Table 3 shows funding for individual campuses of the state-owned system for selected years from 2007-08 to 2013-14. Three campuses have experienced cuts of over 20% in state support since 2007-08: East Stroudsburg, Kutztown, and Millersville. Three campuses experienced cuts in state support of 12.2% or less: Bloomsburg, Cheyney, and West Chester.

					Percent Cut		
	2007-08	2010-11	2011-12	2013-14	07-08 to '13-14	10-11 to 11-12	10-11 to '13-14
Bloomsburg	\$37.6	\$34.9	\$33.1	\$33.0	-12.2%	-5.3%	-5.5%
California	\$35.7	\$33.3	\$29.2	\$29.8	-16.7%	-12.5%	-10.8%
Cheyney	\$14.8	\$13.8	\$13.4	\$13.1	-11.7%	-2.9%	-5.3%
Clarion	\$27.5	\$25.2	\$23.4	\$22.3	-19.1%	-7.2%	-11.6%
East Stroudsburg	\$26.5	\$24.9	\$21.5	\$21.2	-20.0%	-13.9%	-15.1%
Edinboro	\$29.5	\$27.0	\$25.3	\$25.0	-15.3%	-6.3%	-7.7%
Indiana	\$64.8	\$57.7	\$51.4	\$52.4	-19.2%	-10.9%	-9.2%
Kutztown	\$41.6	\$37.6	\$34.9	\$33.1	-20.5%	-7.2%	-11.9%
Lock Haven	\$23.8	\$21.7	\$19.8	\$20.0	-16.0%	-8.7%	-7.9%
Mansfield	\$19.6	\$18.4	\$17.4	\$16.7	-14.9%	-5.7%	-9.3%
Millersville	\$39.0	\$34.0	\$30.5	\$30.9	-20.8%	-10.1%	-9.1%
Shippensburg	\$34.8	\$31.3	\$28.4	\$28.2	-19.0%	-9.3%	-10.0%
Slippery Rock	\$38.8	\$36.3	\$32.5	\$32.3	-16.8%	-10.5%	-11.1%
West Chester	\$55.1	\$52.0	\$47.4	\$49.9	-9.4%	-8.8%	-4.1%
Total	\$489.1	\$448.3	\$408.2	\$407.6	-16.7%	-9.0%	-9.1%

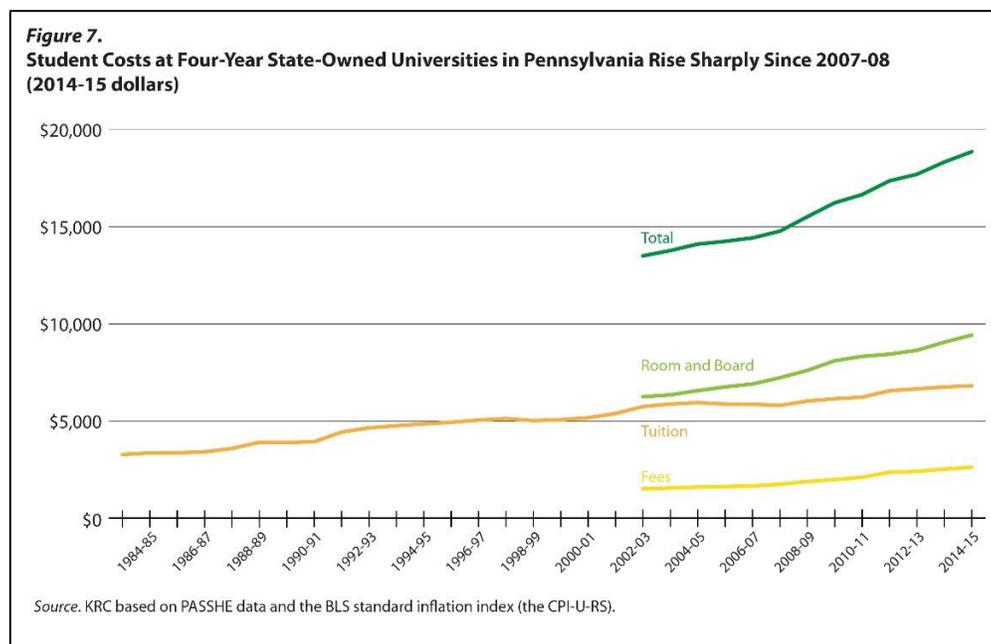
Sources: 2013 *PASSHE Factbook*, 72; *PASSHE Allocation Formula Report*, September 2013 PASSHE Board of Governors Meeting

²⁴ The current “standard” consumer price index use by the Bureau of Labor Statistics (BLS) is the CPI-U, available online at <http://data.bls.gov/cgi-bin/surveymost?cu>. This increased 11% from 2007-08 to 2013-14. Assuming 2% inflation from 2013-14 and 2014-15 yields the estimate in the text. If we instead use the “Higher Education Price Index” (HEPI) for public higher education which is calculated based on changes in the 25 most important cost drivers in higher education, the cut is 28.7%. The HEPI index is reported in Commonfund, *2014 Higher Education Price Index Update*, Table C, p. 11; online at https://www.commonfund.org/CommonfundInstitute/HEPI/HEPI%20Documents/CF_HEPI_2014.pdf.

Funding Cuts Lead to Higher Tuition and Fewer Jobs, Slowing Recovery in PASSHE Communities

In the context of declining funding, the number of full-time salaried employees at PASSHE schools has, since 2009-10, decreased by 472, or 3.6%, from 13,015 to 12,544.²⁵ According to the 2012-13 budget request from PASSHE, 900 positions total (i.e., not limited to full-time or to salaried employees) have been eliminated or “held vacant” across system campuses.²⁶

Adjusted for inflation, total student costs have increased by 27.7% since 2007-08, although tuition alone has increased only by 17.5% (Figure 7).²⁷ (Nominal tuition has increased by 17.7% since 2010-11). One hundred and eighteen programs have been placed on moratorium since the middle of 2010; 95 were eliminated in the 2011-12 to 2013-14 period. This means that students will no longer be admitted to the programs during the period of moratorium, but currently enrolled or admitted students will be allowed to complete the programs. While universities can bring programs out of moratorium within a five-year period, the fear is that many of these programs will be permanently eliminated. These cuts span a wide range of programs, the largest bloc in foreign languages. One quarter of the programs cut led to a Bachelor or Masters of Science degree in fields that include biology, mathematics, GIS spell out, electronic media, applied physics, and medical technology. According to the PASSHE administration, these are the largest program and faculty cuts in the system’s history.

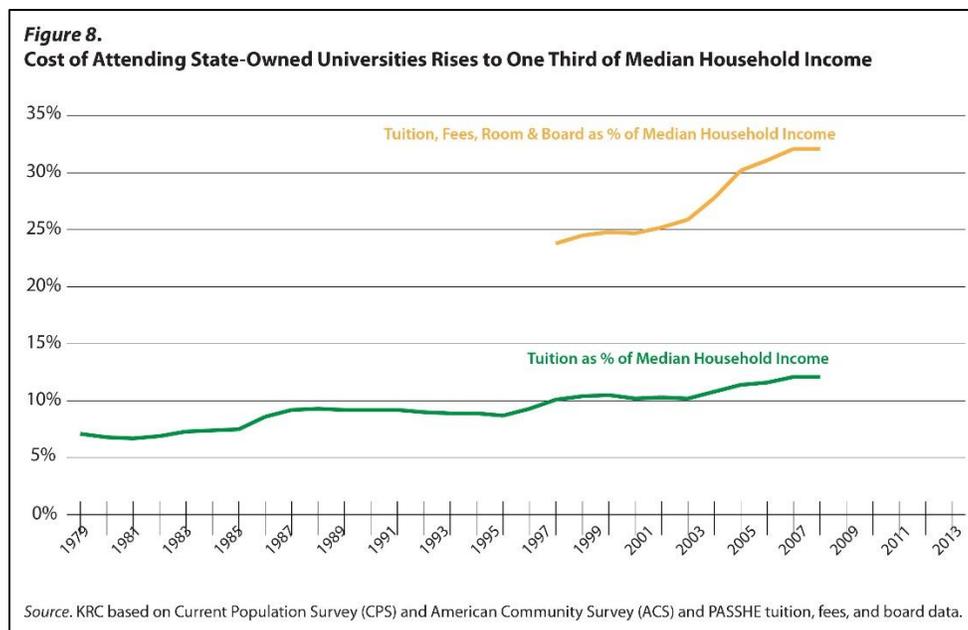


²⁵ Salaried employment in PASSHE schools for recent years is online at <http://www.passhe.edu/FactCenter/Pages/faculty.aspx>. These employment numbers are somewhat different than those reported in the *PASSHE Fact Book 2012-13*, p. 77. That source has an anomalously high employment level in 2008-09, since which 1,414 positions have been eliminated; the drop since 2009-10 according to this source is 330. No other year between 2007-08 and 2012-13 is within 1,000 of the 2008-09 number.

²⁶ Board of Governors, *PASSHE, Fiscal Year 2013-13 Appropriations Request*, p. 4. This source describes these 900 positions as having been eliminated or held vacant “in these challenging times.” The period over which these reductions occurred is not specified.

²⁷ Tuition and fee increases from *PASSHE Fact Book 2012-13*, p. 45.

Figure 8 compares student costs for attending state-owned universities against household income. Tuition alone has gone from 6.5% of family income in the 1980s to 10% today. In the last decade, total costs for attending state-owned institutions have gone from less than one-quarter of household income to nearly one third.



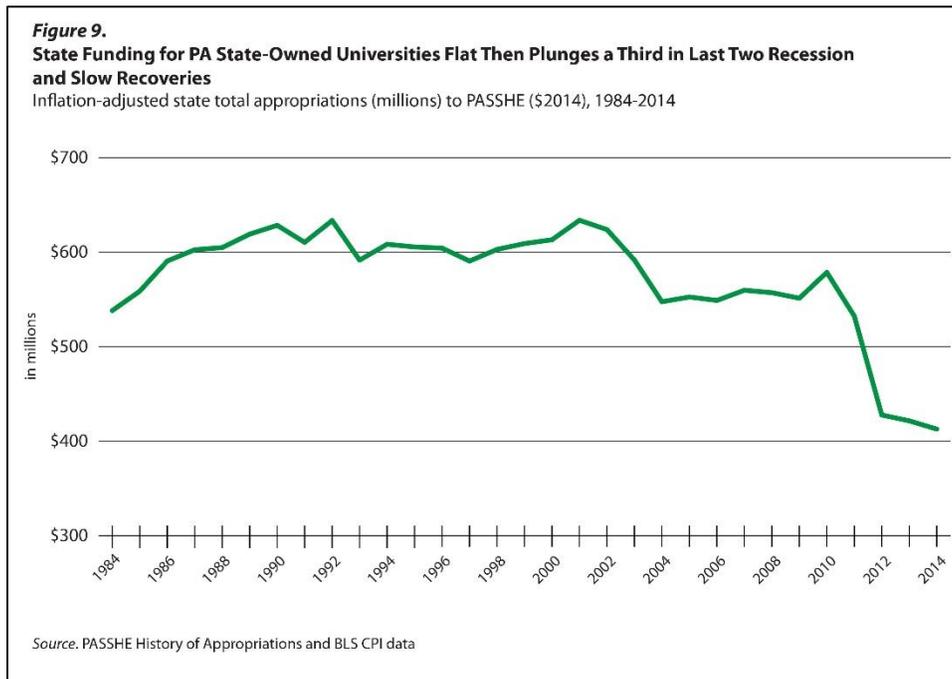
In addition, just as K-12 funding cuts have slowed the economic recovery across the state, so have funding cuts in higher education, albeit on a smaller scale. These cuts are felt most in rural areas where PASSHE schools are among the largest employers. A 2012 study of the economic impact of PASSHE schools suggests that the state’s \$90 million in funding cuts since 2010-11 may have reduced employment in local communities by about 2,000 jobs.²⁸

State System Funding Plunges in the Last Two Recessions and Slow Recoveries

Figure 9 provides a longer term look at funding for Pennsylvania’s state-owned universities since the PASSHE system was created in the early 1980s. The chart shows that inflation-adjusted state funding rose substantially in the second half of the 1980s, but then plateaued in the 1990s. State funding then dropped dramatically in the last two recessions and recoveries, and did not bounce back. As a result, over a period of rising enrollment, state funding has fallen a third. As Figure 1 at the start of this report

²⁸ John G.Kooti, *The Pennsylvania State System of Higher Education: Economic Impact on the Commonwealth of Pennsylvania*, John L. Grove College of Business, Shippensburg University, March 17, 2011; online at <http://www.ship.edu/search.aspx?searchtext=economic%20impact%20study>. The top table on p. 8 of this study indicates that the total jobs supported by State System schools is 41,045. Ninety million dollars, the scale of the state’s cut, represents about 5% of the total budget for State System schools. Five percent of 41,045 is 2,052 jobs. The economic impact may have been cushioned by tuition increases of about 14% since 2010-11 (and larger fee increases), although these increases could also have reduced student spending in area businesses.

illustrated, state financial support accounted for nearly 70% of PASSHE’s budget in the mid-1980s, but is only 25% today, placing the financial burden on Pennsylvania students and families.



Since 2000, when state funding for Pennsylvania’s four-year schools started to decline in inflation-adjusted dollars, wages and family incomes have also stagnated. This one-two punch has hammered middle-class families, leading to the picture shown in Figure 8, with student costs rising as a share of household income.

Funding Cuts Exacerbate a Two-Tier Faculty Pay and Benefit System

Funding cuts over an extended period of time have also contributed to a dramatic increase in the share of courses in Pennsylvania’s publicly subsidized higher education taught by part-time and other contingent faculty. Even before the most recent cuts in 2007-08, contingent faculty members and instructors taught 42% of the courses at Pennsylvania’s community colleges, state-owned universities, and state-related institutions, considered as a group.²⁹ At Pennsylvania community colleges as of that time, contingent faculty members taught 56% of courses. At state-related institutions, contingent faculty, including graduate students, taught 59% of courses (68% at Temple). Only state-owned institutions managed to contain the growth of contingent faculty, holding it to 20%, with only 8% in the most economically vulnerable, part-time category, and the other 12% full-time, non-tenure track faculty.

²⁹ The figures in this sub-section on the use and compensation of Pennsylvania contingent faculty come from Deidre Brill and Stephen Herzenberg, *Reversing Course in Pennsylvania Higher Education: The Two Tiers in Faculty Pay and Benefits and a Way Forward*, Keystone Research Center, January 20, 2011; online at <http://keystoneresearch.org/sites/keystoneresearch.org/files/1-19-11%20Reversing%20Course%20in%20PA%20Higher%20Ed..pdf>

In addition, contingent faculty members in most of Pennsylvania's publicly subsidized higher education earned much lower salaries per course than full-time, tenured and tenure-track faculty members. At community colleges, the per-course pay for part-time/adjunct faculty was 43% of full-time tenured/tenure-track faculty. At state-related universities, relative pay per course for part-time/adjunct faculty was an astonishing 19% of the per-course pay of tenured/tenure-track faculty. Absolute pay levels per course at community colleges for part-time/adjunct faculty members were so low (\$2,547 per course) that even if part-time/adjunct community college "road warriors" cobbled together an overall total of 10 courses per year at multiple institutions, they earned an average of only \$25,470 per year, below a "self-sufficiency income" needed for a family of one adult and one child to support itself without public assistance.

The benefit picture was equally dismal: Most part-time/adjunct faculty members in Pennsylvania public higher education received NO health or pension benefits.

Measured by compensation as well as the share of courses taught by contingent faculty, the state-owned universities again represented a bright light as of 2007-08 and a model for other institutions. Both part-time/adjunct faculty members and non-tenure-track full-timers earned 63% as much per course as full-time tenured/tenure-track faculty.

The emergence of two tiers among publicly subsidized colleges and universities undermines educational quality as well as increases poverty and low-income status among post-secondary teachers, most of whom have graduate degrees. Going forward, Pennsylvania needs to invest in higher education sufficiently to restore affordability and accessibility for students and also to ensure fairness for faculty, including compensation and institutional support sufficient to enable contingent faculty to deliver a quality education.

A Must-Have for Pennsylvania: Investment in Higher Education

Recent cuts in higher education funding in Pennsylvania have underscored that the state faces an affordability crisis that is placing even the state's community colleges and state-owned four-year schools beyond the reach of too many families, and burdening many who do attend even these lowest-cost options with substantial debt (whether they obtain a degree or not).

The underinvestment in higher education is not simply a problem for families. It is a problem for Pennsylvania businesses and for all Pennsylvanians because of the connection between investment in higher education and economic growth. The benefits of higher education are captured by both the businesses that employ college graduates, and the businesses that cater to the increased consumer demand of such graduates. These benefits are captured by all Pennsylvanians in the form of higher tax revenue, lower social costs, and a stronger civil society and democracy. Although there is no way to generate precise estimates, public investment in higher education almost certainly pays for itself several times over. Pennsylvania state government invests less than a third of one percent of state personal income in higher education. Yet this investment plays a central part in generating long-term productivity growth that averages roughly 2% per year. In sum, when Pennsylvania underinvests in higher education it shoots itself in the foot, as well as undermines opportunity for its middle class.

Given Pennsylvania's longstanding low rank for investing in higher education, and high rank for tuition and fees -- both exacerbated by recent funding reductions -- remedying the state's underinvestment will

not be easy or something that can be accomplished in one or two budgets. Pennsylvania needs a coherent vision for 21st century higher education, including how to find sustainable public funds to support this vision, and how to maximize the payback for increased investment. It does not currently have a vision.

As a starting part for moving towards such a vision, Pennsylvania should:

- Restore the \$90 million in funding cuts to the State System of Higher Education since 2010-11, and also restore \$20 million in funding cuts to community colleges. These amounts equal about one-third of one percent of the state budget, a small price for taking a first step towards restoring the affordability of college education for the state's middle class.
- Provide sufficient additional funds to freeze tuition at state-owned institutions and community colleges for the next four years, and develop and begin to implement a plan to lower tuition at these institutions at least to the national average. Assuming a 2.5% tuition increase absent additional funds, freezing tuition in year one would require another roughly \$30 million.
- Build on recent legislative action to establish a rural community college; make community college accessible and affordable to every Pennsylvanian, with instructional sites in every county; and allow all Pennsylvanians to pay the lowest-cost (sponsoring region) tuition.
- Explore further modifications in the distribution of PHEA grants to (a) lift average grants to attend public colleges and universities at least to the level for peer institutions in the private sector; and (b) maximize middle-class access to affordable public higher education.
- Develop a plan to limit use of contingent faculty and elevate compensation at community colleges and state-related institutions, using the state-owned system as a model. Ensure that overuse of contingent faculty does not compromise educational quality, or make state government responsible for spreading poverty and low-income status among college teachers. The development of a plan to limit overuse of contingent faculty members and elevate their pay should begin with an updating of the Keystone Research Center 2011 status report on the use and compensation of contingent faculty in publicly supported higher education.
- Ensure that increased investment in higher education is combined with greater coordination with key industries, increasing the payback in productivity, profitability, and economic growth.³⁰
- Promote a collaborative effort among colleges, their faculty, and the state to “bend the cost curve” in higher education, capitalizing on the potential of on-line education while ensuring that this is coupled with the amount of in-person teaching, mentoring, and peer learning that research documents will yield real learning and skill development.

When it comes to creating a 21st century educational system, Pennsylvania's current low levels of investment and lack of statewide community-college coverage are, in a sense, an advantage. Pennsylvania has the luxury of designing a new and adequately funded higher education system informed by today's knowledge of the investments that will best serve citizens, businesses, and the commonwealth. It is long past time to get started.

³⁰ This recommendation was also made by DeVol et al., *A Matter of Degrees*, as a way to enhance to economic payoff to educational investment. This recommendation also overlaps the recommendations of the Governor's Advisory Commission on Postsecondary Education, especially under Goals 2.2, 2.3.1, and 4. See Governor's Advisory Commission on Postsecondary Education, *Report and Recommendations*, November 14, 2012; online at <http://teampa.com/wp-content/uploads/2012/11/ACPE-Final-Recommendations-11-14.pdf>

Table A1. Educational Attainment by Pennsylvania County and Region

Educational attainment for the population aged 25 to 64

County	Less than high school	High school	More than High School	Some college	Bachelor's degree	Advanced degree
Adams & Franklin	12%	42%	46%	17%	13%	7%
Allegheny	4%	26%	70%	18%	25%	18%
Armstrong & Indiana	7%	47%	45%	16%	13%	6%
Beaver & Lawrence	7%	40%	53%	19%	15%	7%
Bedford, Blair, Cambria, Fulton, Huntingdon, & Somerset	8%	48%	44%	16%	12%	6%
Berks County	12%	37%	50%	18%	17%	8%
Bradford, Sullivan & Tioga	10%	45%	45%	17%	12%	6%
Bucks	4%	30%	65%	19%	23%	15%
Butler	5%	33%	62%	17%	23%	11%
Cameron, Clarion, Clearfield, Elk, Forest, Jefferson, McKean, Potter, & Venango	9%	49%	42%	16%	11%	5%
Carbon, Lehigh, & Northampton	10%	34%	55%	19%	17%	9%
Centre	6%	30%	64%	13%	22%	21%
Chester	6%	21%	73%	15%	32%	20%
Clinton, Juniata, Lycoming, Mifflin, Snyder, & Union	12%	44%	44%	16%	12%	6%
Columbia & Luzerne	8%	39%	53%	20%	15%	8%
Crawford & Warren	9%	46%	45%	16%	13%	7%
Cumberland & Perry	7%	35%	58%	18%	20%	11%
Dauphin	8%	34%	58%	18%	19%	11%
Delaware	6%	29%	65%	19%	23%	15%
Erie	8%	39%	53%	18%	18%	10%
Fayette	8%	43%	49%	17%	15%	7%
Greene & Washington	7%	39%	54%	17%	19%	9%
Lackawanna & Wyoming	9%	36%	56%	17%	18%	11%
Lancaster	14%	38%	48%	16%	17%	8%
Lebanon	11%	42%	47%	17%	14%	8%
Mercer	9%	43%	48%	18%	15%	6%
Monroe	8%	36%	56%	22%	16%	8%
Montgomery	4%	23%	73%	17%	29%	20%
Montour & Northumberland	10%	47%	43%	15%	13%	7%
Philadelphia	16%	33%	50%	19%	15%	11%
Pike, Susquehanna, & Wayne	9%	40%	52%	22%	13%	7%
Schuylkill	11%	47%	43%	16%	10%	6%
Westmoreland	5%	36%	59%	20%	18%	9%
York	9%	41%	50%	18%	15%	8%

Source. Keystone Research Center based on American Community Survey microdata provided by Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.