AGENDA
Tuition Development Work Group

Council on Postsecondary Education
Friday, February 19, 2016
1:00 PM
Conference Room A

Dial-in Number: (866) 754-7476
Conference Code: 1589321673

Council on Postsecondary Education
2016-17 Tuition Setting Timeline

Jan 29, 2016	CCBO Meeting – CPE staff initiates discussion of potential issues related to the 2016-17 tuition and fee setting process.
Feb 3, 2016	**Presidents' Meeting** – CPE staff presents draft timeline and provides an update on potential issues related to the 2016-17 tuition and fee setting process.
Jan – Mar 2016	Council staff collects data and generates policy relevant information related to funding adequacy, affordability, access, financial aid, and productivity. Campus staffs collect data and generate information related to fixed cost increases and anticipated uses of additional tuition revenue.
Feb 19, 2016	TDWG Meeting – CPE staff presents work group members with a draft timeline, provides an update on the current environment, shares preliminary policy relevant data, and initiates discussion of potential issues related to the 2016-17 tuition setting cycle.
Feb (24 – 26)	CCBO Conference Call – CPE staff and campus officials continue to discuss potential issues related to the 2016-17 tuition setting process.
Mar 2, 2016	**Presidents' Meeting** – CPE staff presents final timeline, provides an update on the current environment, shares preliminary policy relevant information, and continues discussion of issues related to the 2016-17 tuition and fee setting process.
Mar – Apr 2016	CPE and campus staffs exchange information from respective data collection efforts and work to finalize for distribution to Council members.
Mar (23 – 25)	TDWG Meeting – CPE staff provides an update on discussions to date with campus presidents and CBOs.
Apr (1, 4, or 5)	CCBO Meeting – CPE staff presents proposed tuition and fee ceiling recommendation to CBOs, including resolution of issues related to across sector differentiation, within sector differentiation, and elimination of exceptions to the nonresident rate floor. CBOs provide feedback regarding these proposals.

Apr 6, 2016 **Presidents' Meeting** – CPE staff presents proposed tuition and fee ceiling recommendation to campus presidents, including resolution of issues related to across sector differentiation, within sector differentiation, and elimination of exceptions to the nonresident rate floor. Presidents provide feedback regarding these proposals.

Apr (18 – 20) TDWG Meeting – CPE staff shares with work group members: policy relevant information related to funding adequacy, affordability, access, financial aid, and productivity, as well as, information about campus fixed cost increases and anticipated uses of additional tuition revenue.

CPE staff presents final tuition and mandatory fee ceiling recommendation to work group members for their consideration, including resolution of issues related to across sector differentiation, within sector differentiation, and elimination of exceptions to the nonresident rate floor.

Work group members provide feedback to CPE staff regarding endorsement of the recommendation.

Apr 26, 2016 *CPE Meeting* – CPE staff shares with the full Council: policy relevant information related to funding adequacy, affordability, access, financial aid, and productivity, as well as, information about campus fixed cost increases and anticipated uses of additional tuition revenue.

CPE staff presents final tuition and mandatory fee ceiling recommendation to Council members for their consideration, including resolution of issues related to across sector differentiation, within sector differentiation, and elimination of exceptions to the nonresident rate floor.

The Council takes action on recommended tuition and fee ceilings and proposed changes in policy, related to across sector differentiation, within sector differentiation, and elimination of exceptions to the nonresident rate floor.

Apr – May 2016 Campus staffs share proposed tuition and mandatory fee rates with the Council president. The Council president updates Council members regarding the proposed rates.

Jun 3, 2016 *CPE Meeting* – The Council takes action on each institution's proposed tuition and mandatory fee rates.

February 19, 2016

Governor's Proposed 2016-18 Biennial Budget (HB 303)
Summary for Postsecondary Institutions

Operating Funds

- Includes proposal for a 4.5% reduction in the current fiscal year for the postsecondary institutions, applied to the enacted 2015-16 net General Fund base.
- Includes a proposed 9.0% reduction in 2016-17, again applied to the enacted 2015-16 net General Fund base, not the revised net General Fund base after the 4.5% cut.
- The 9.0% reduction is carried forward into the second year of the biennium (i.e., flat funding), but the Governor's budget also contains a proposal to reallocate one-third of each institution's operating funds in 2017-18 to a Postsecondary Education Performance Fund, which will be allocated among institutions based on progress toward and achievement of performance goals. Desired outcomes, performance indicators, and time-period goals are yet to be determined. The budget bill does not specify a governing authority for the Performance Fund.
- Provides an additional $5.3 million from the General Fund in fiscal year 2016-17 and $10.7 in fiscal year 2017-18 for NKU to address disparities in the allocation of state appropriations among the comprehensive postsecondary education institutions.
- Provides an additional $2.6 million from the General Fund in fiscal year 2016-17 and $5.2 million in fiscal year 2017-18 for WKU to address disparities in the allocation of state appropriations among the comprehensive postsecondary education institutions.

Trust Funds

- The Governor's proposed budget contains no new funding for Strategic Investment and Incentive Trust Funds.

Capital Construction

- The Governor's budget does not include any General Fund or agency bond supported capital projects.
- The budget provides partial authorization (i.e., $668.7 million) for requested capital projects ($1.090 billion) financed with third-party or other funding sources.
- Restricted funds projects below $15.0 million at the research institutions and below $5.0 million at the comprehensive institutions and KCTCS were included (i.e., ($1.049 billion out of requested $4.309 billion).
- No land purchases were authorized in the proposed budget.

Kentucky Public Postsecondary Institution
Change in Enacted and Proposed Net General Fund Appropriations
Between Fiscal Years 2016 and 2018

Institution	2015-16 Enacted Net [a] General Fund		2017-18 Proposed Net [d] General Fund	Dollar Change	Percent Change
University of Kentucky	$279,611,300		$254,446,300	($25,165,000)	-9.0%
University of Louisville	139,076,900		126,560,000	(12,516,900)	-9.0%
Eastern Kentucky University	68,033,800		61,910,800	(6,123,000)	-9.0%
Kentucky State University	23,429,600		21,321,000	(2,108,600)	-9.0%
Morehead State University	43,339,500	(b)	39,438,900	(3,900,600)	-9.0%
Murray State University	48,025,100		43,702,800	(4,322,300)	-9.0%
Northern Kentucky University	48,537,600		54,837,600	6,300,000	13.0%
Western Kentucky University	74,649,400	(c)	73,107,000	(1,542,400)	-2.1%
KCTCS	190,162,300		173,047,700	(17,114,600)	-9.0%
System Totals	$914,865,500		$848,372,100	($66,493,400)	-7.3%

[a] Does not include proposed 4.5% cut in the current year, which would result in $41.2 million reduction to the existing base.

[b] Includes $2,300,000 for MoSU's Craft Academy dual credit program.

[c] Includes additional $2,000,000 for WKU's Gatton Academy of Math and Science.

[d] Does not include proposed $282.5 million reallocation from institutions to performance funding program.

Source: Kentucky Budgets of the Commonwealth, multiple biennia.

Kentucky Public Postsecondary Institution
Change in Enacted and Proposed Net General Fund Appropriations
Between Fiscal Years 2008 and 2018

Institution	2007-08 Enacted Net General Fund	2017-18 Proposed Net [c] General Fund	Dollar Change	Percent Change
University of Kentucky	$335,071,000 [a]	$254,446,300	($80,624,700)	-24.1%
University of Louisville	168,572,300	126,560,000	(42,012,300)	-24.9%
Eastern Kentucky University	79,761,400	61,910,800	(17,850,600)	-22.4%
Kentucky State University	27,441,700	21,321,000	(6,120,700)	-22.3%
Morehead State University	48,202,100	39,438,900	(8,763,200)	-18.2%
Murray State University	56,068,700	43,702,800	(12,365,900)	-22.1%
Northern Kentucky University	55,099,500	54,837,600	(261,900)	-0.5%
Western Kentucky University	85,115,600	73,107,000	(12,008,600)	-14.1%
KCTCS	228,704,900 [b]	173,047,700	(55,657,200)	-24.3%
System Totals	$1,084,037,200	$848,372,100	($235,665,100)	-21.7%

[a] Includes $2,000,000 special session appropriation for UK's Center for Applied Energy Research.

[b] Includes $2,373,800 reorganization transfer to KCTCS for Kentucky Board of Emergency Medical Services.

[c] Does not include proposed $282.5 million reallocation from institutions to performance funding program.

Source: Kentucky Budgets of the Commonwealth, multiple biennia.

Senate Bill 75

Sponsor: Dan Seum

Summary:

SB 75 would amend KRS 164.020 to require the Council to:

- Limit tuition for resident students at the public postsecondary institutions to the 2015-16 tuition level for four years: 2016-17, 2017-18, 2018-19, and 2019-2020.
- Require tuition increases for resident students following the 2019-2020 academic year to be determined in consultation with the General Assembly; and
- Limit incidental fees for resident students to the 2015-16 level for four years.

Tuition limits would apply to all resident students. No mention is made of differentiation for graduate, professional, or dual credit students.

President King testified before the Senate Education Committee on February 18 regarding this bill.

Making Kentucky STRONGER BY DEGREES

Presentation to Senate Education Committee
Robert L. King, President Council on Postsecondary Education
February 18, 2016

Discussion for Today

- **Tuition setting process:** CPE’s role as advocate for students and institutions.
- **Debunking tuition:** Sticker Price vs. Net Price
- **Tuition and student loan debt:** How does Kentucky rank?
- **Tuition and state funding:** Does tuition solve the funding gap problem?

Statutory Responsibility

KRS 164.020 Powers and duties of council.

The Council on Postsecondary Education in Kentucky shall:

Determine tuition and approve the minimum qualifications for admission to the state postsecondary educational system.

In determining the tuition for non-Kentucky residents, the council shall consider the fees required of Kentucky students by institutions in adjoining states, the resident fees charged by other states, the total actual per student cost of training in the institutions for which the fees are being determined, and the ratios of Kentucky students to non-Kentucky students comprising the enrollments of the respective institutions, and other factors the council may in its sole discretion deem pertinent;

Tuition and Fee Policy

- Funding Adequacy
  - The Council seeks to balance the affordability of postsecondary education for Kentucky's citizens with the institutional funding necessary to accomplish the goals of HB 1 and the *Strategic Agenda*.
- Shared Benefits and Responsibility
  - The Council and the institutions believe that funding postsecondary education is a shared responsibility of state and federal governments, students and families, and postsecondary education institutions.
- Affordability and Access
  - The Council and the institutions are committed to ensuring that college is affordable and accessible to all academically qualified Kentuckians, with particular emphasis on adult learners, part-time students, minority students, and students from low and moderate income backgrounds.

Tuition and Fee Policy (Cont'd)

- Affordability and Access
  - The Council believes that no citizen of the Commonwealth who has the drive and ability to succeed should be denied access to postsecondary education in Kentucky because of inability to pay.
  - Access should be provided through a reasonable combination of savings, family contributions, work, and financial aid, including grants and loans.

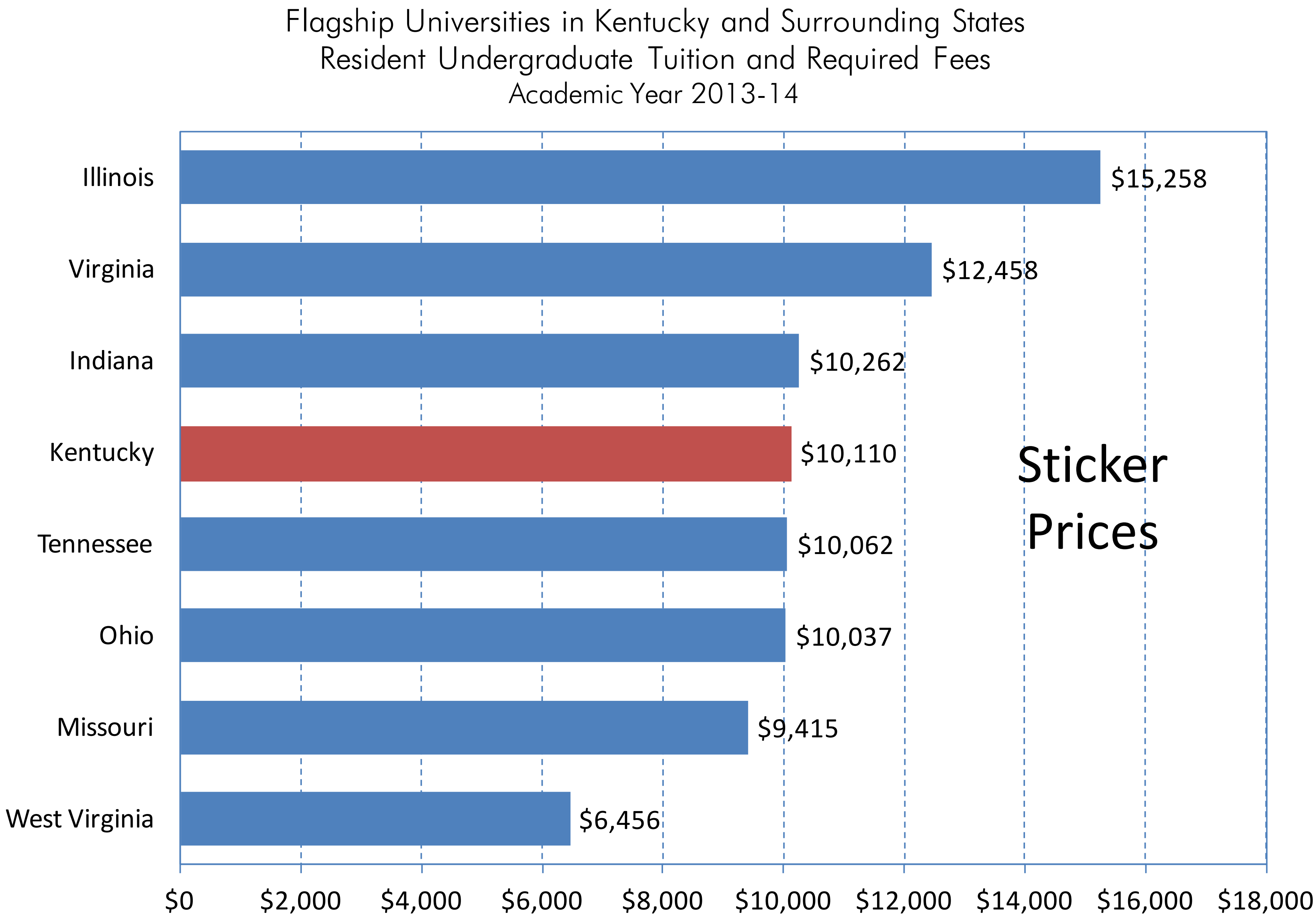
Tuition Setting Process

- Six-month process involving multiple stakeholders
  - Council president and staff
  - Campus presidents and chief budget officers
  - Tuition Development Work Group
  - Council members
- Data driven and transparent
  - Regional and national comparisons of sticker price and net price
  - Trends in federal, state, and campus funded student aid
  - Regional and national comparisons of family income and student debt
  - Trends in state appropriations, tuition revenue, and total public funds
  - Regional and national funding comparisons
  - Trends in student enrollment (resident and NR; UG and graduate)
  - Anticipated fixed cost increases and uses of tuition revenue

Sticker Price versus Net Price

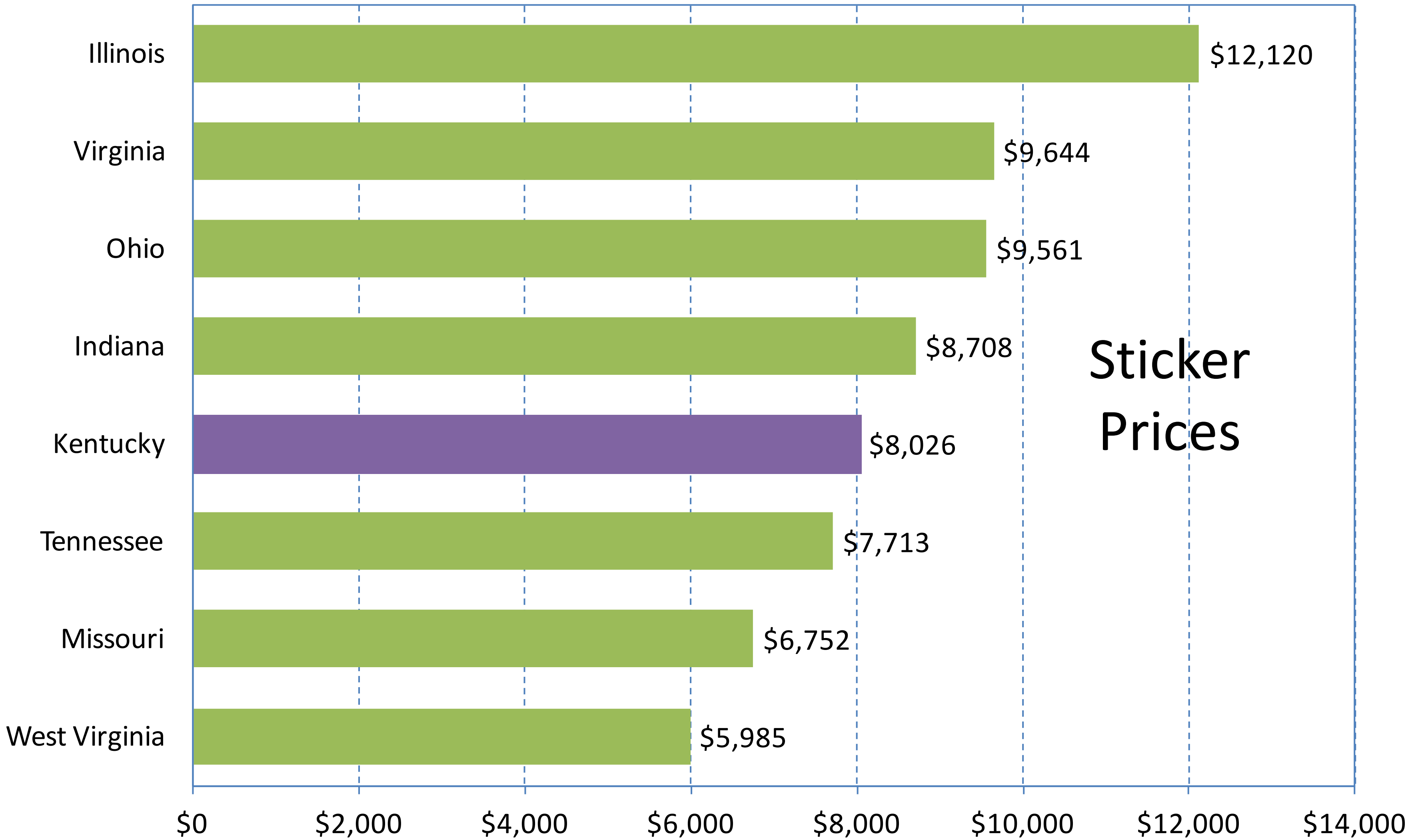
Sticker Price Comparison

- Kentucky research universities are moderately priced both regionally and nationally
- Sticker prices at comprehensive universities are also moderate for our region and nationally
- KCTCS tuition and fees rank at the 78th percentile nationally
  - Lack of local tax support
  - Relatively low level of state funding per student
- Most students do not pay published sticker prices due to federal, state, and campus funded financial aid



Source: Washington Student Achievement Council (WSAC).

Comprehensive Colleges and Universities in Kentucky and Surrounding States
Resident Undergraduate Tuition and Required Fees (State Averages)
Academic Year 2013-14

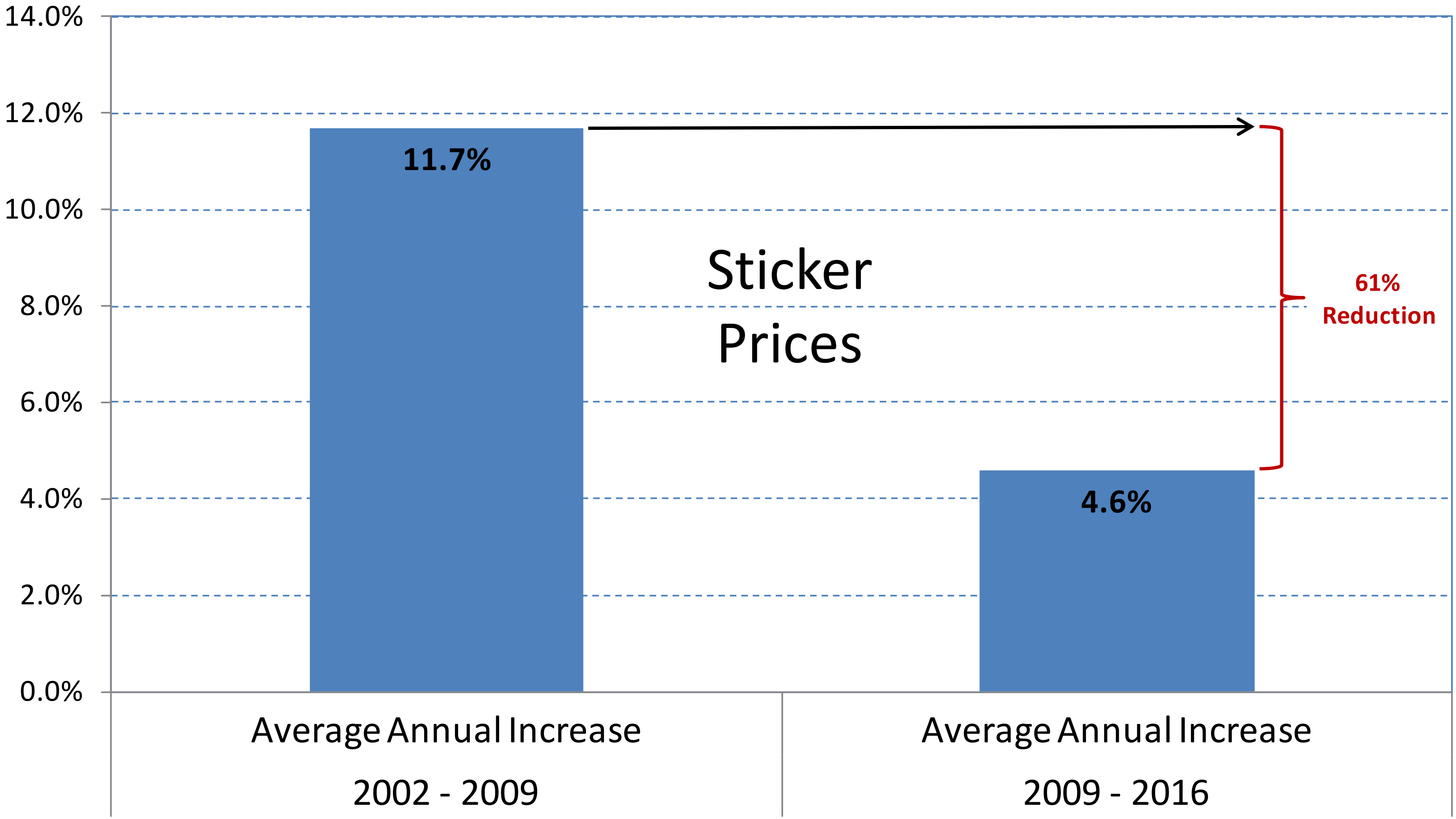


Source: Washington Student Achievement Council (WSAC).

Sticker Price Change

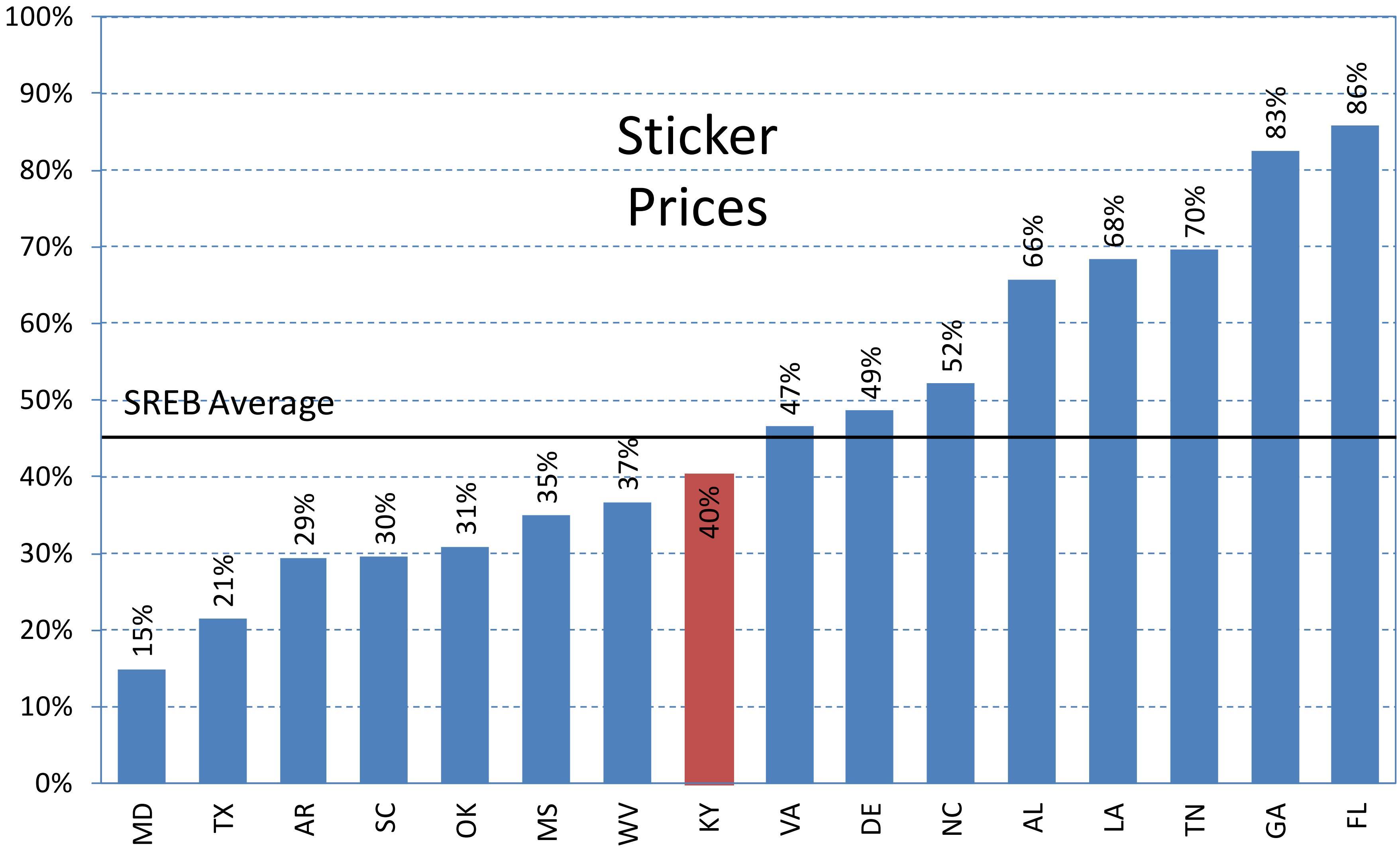
- Every year since 2009 the Council has adopted tuition and fee ceilings (i.e., resident undergraduate rates)
- The ceilings regulate both tuition and mandatory fees
- Average rate of increase has been reduced by more than 60%
- Increases at research and comprehensive universities have been below regional and national averages
- Increases at KCTCS have been among the lowest in our region and nationally

Kentucky Public Postsecondary System
Average Annual Increases in Resident Undergraduate Tuition and Fees
Academic Years 2002 - 2009 and 2009 - 2016



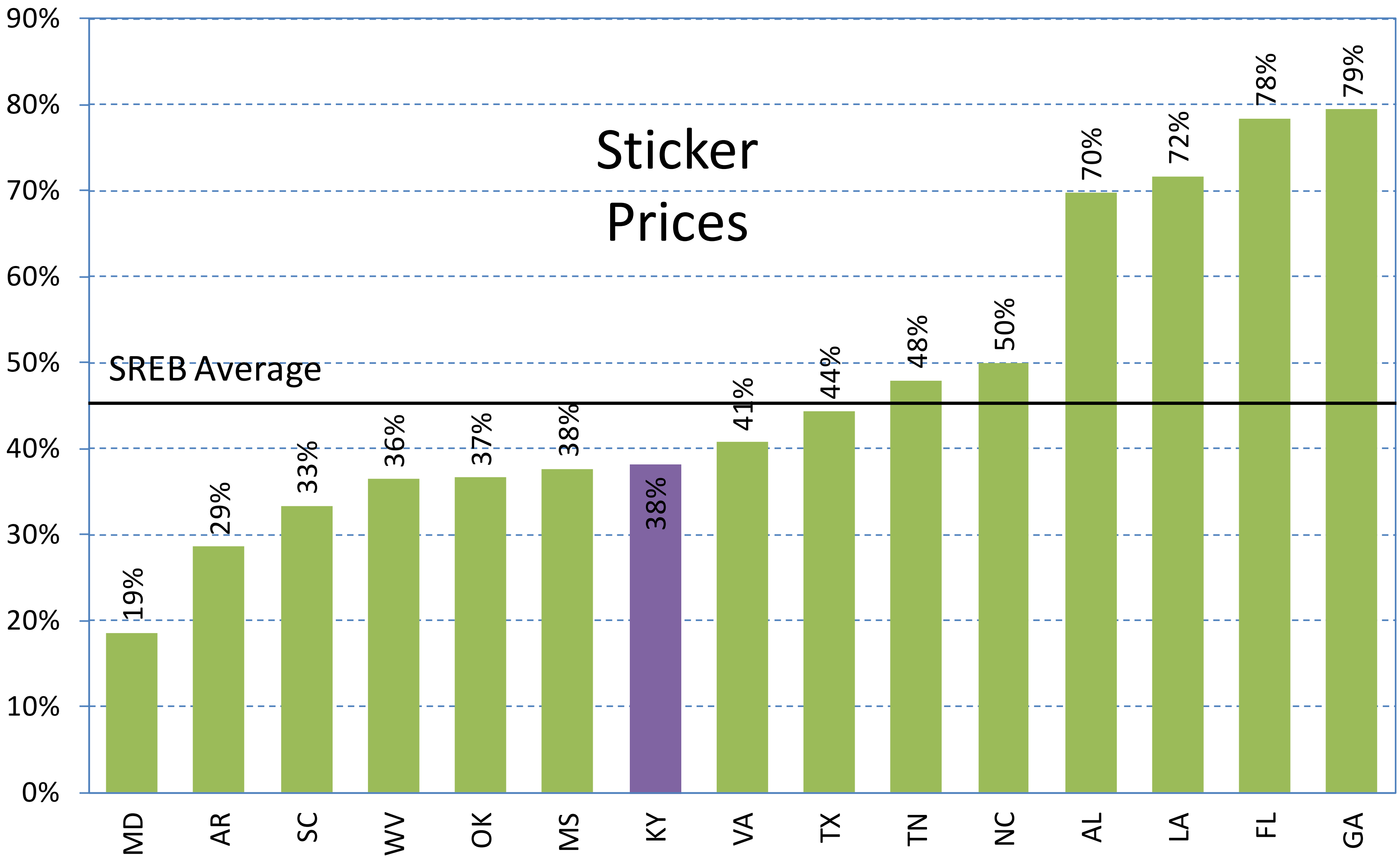
Source: CPE Comprehensive Database.

Flagship Universities in SREB Member States
Change in Resident Undergraduate Tuition and Required Fees
Between Academic Years 2007-08 and 2013-14



Source: Washington Student Achievement Council (WSAC).

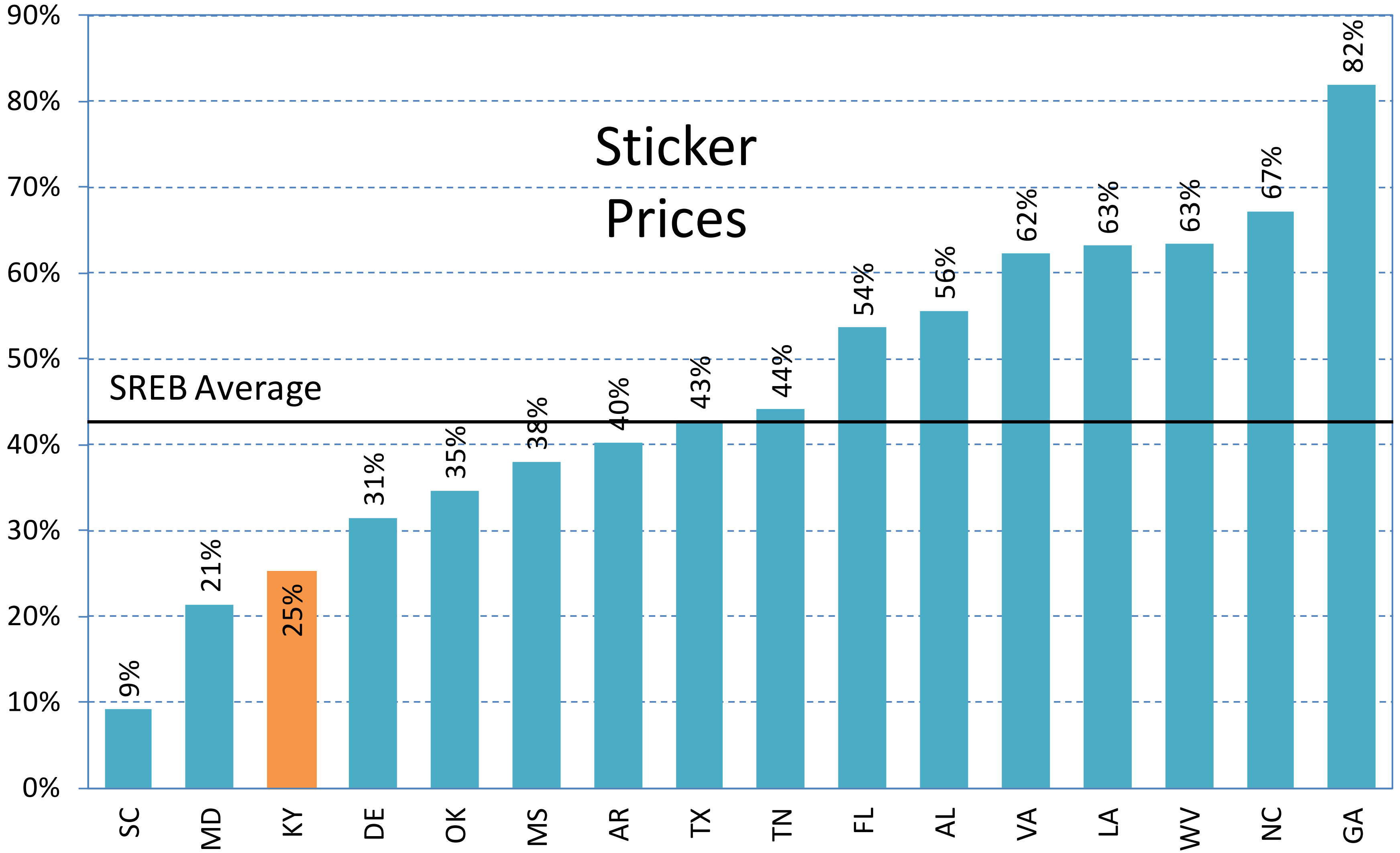
Comprehensive Colleges and Universities in SREB Member States
Change in Resident Undergraduate Tuition and Required Fees
Between Academic Years 2007-08 and 2013-14



Source: Washington Student Achievement Council (WSAC).

KENTUCKY COUNCIL ON POSTSECONDARY EDUCATION

Community Colleges in SREB Member States
Change in Resident Tuition and Required Fees
Between Academic Years 2007-08 and 2013-14

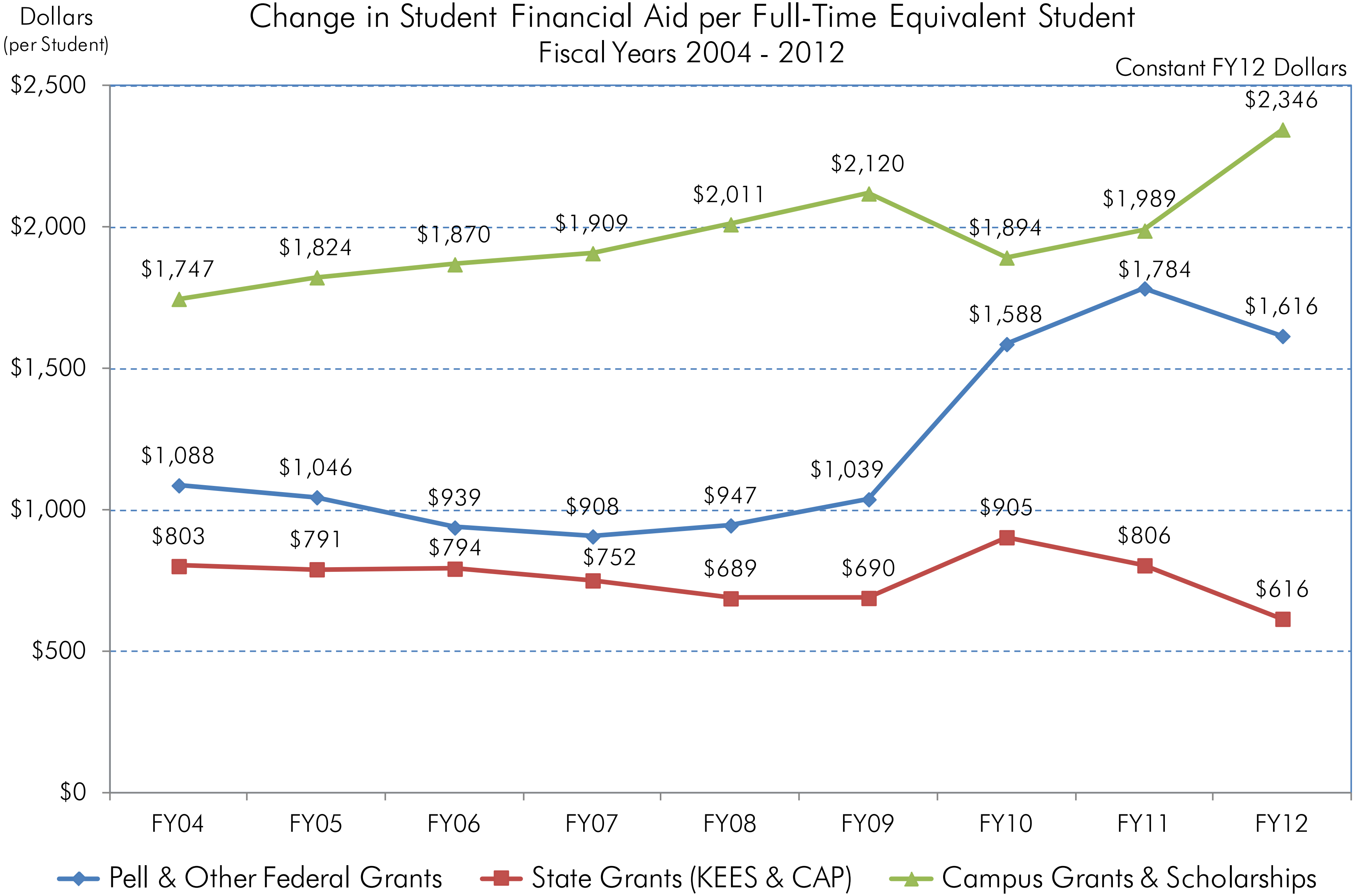


Source: Washington Student Achievement Council (WSAC).

Student Financial Aid

- In terms of state funded student aid program expenditures, Kentucky is a high aid state
- Postsecondary institutions are the largest provider of student financial aid
- Campus financed student aid programs have kept pace with enrollment growth and inflation
- Lottery funded state aid programs have not
- In recent years, campuses have filled the gap caused by declining federal and state aid per student

Kentucky Public Postsecondary System
Change in Student Financial Aid per Full-Time Equivalent Student
Fiscal Years 2004 - 2012

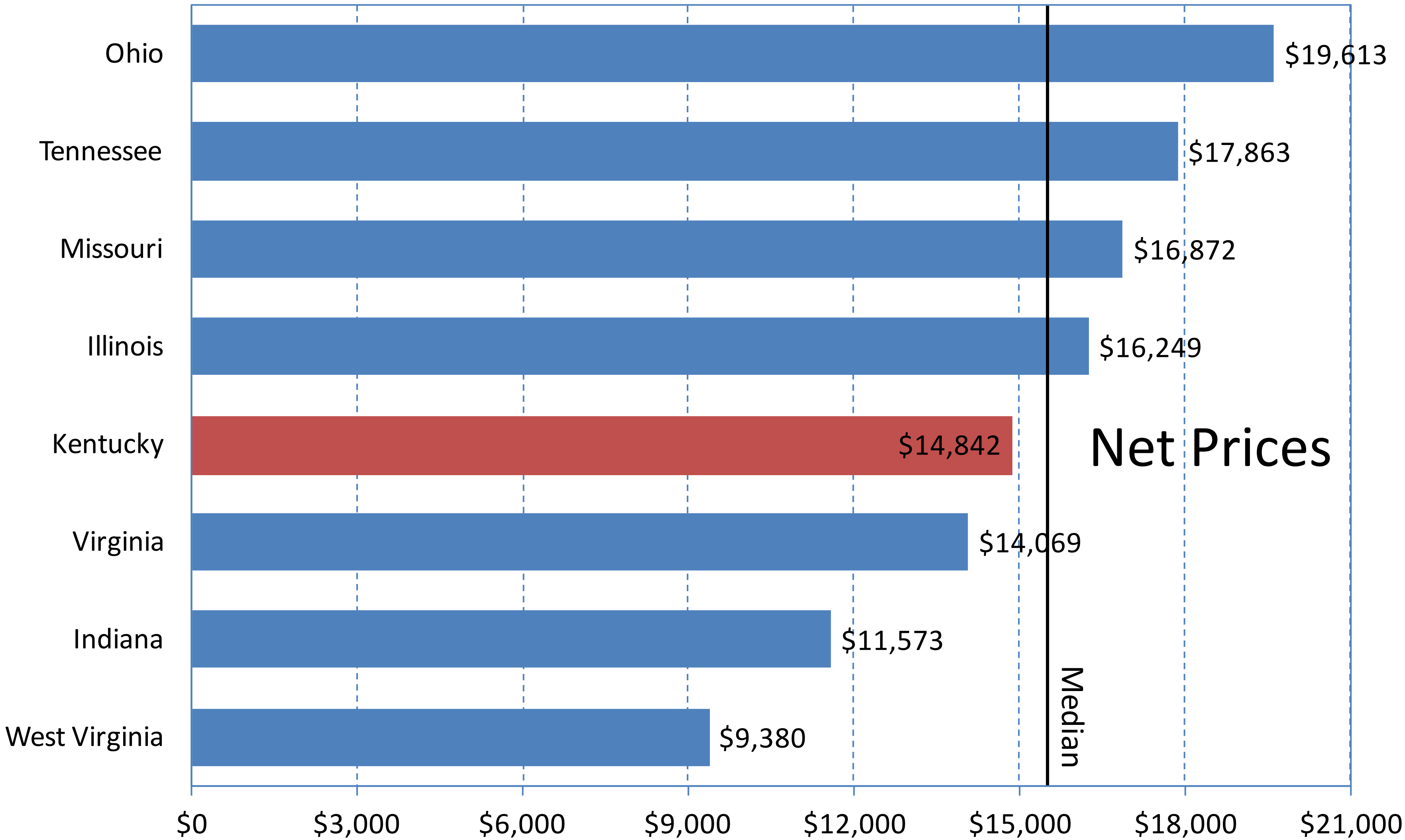


Source: Integrated Postsecondary Education Data System (IPEDS); Commonfund Institute, Higher Education Price Index (HEPI).

Net Price Comparison

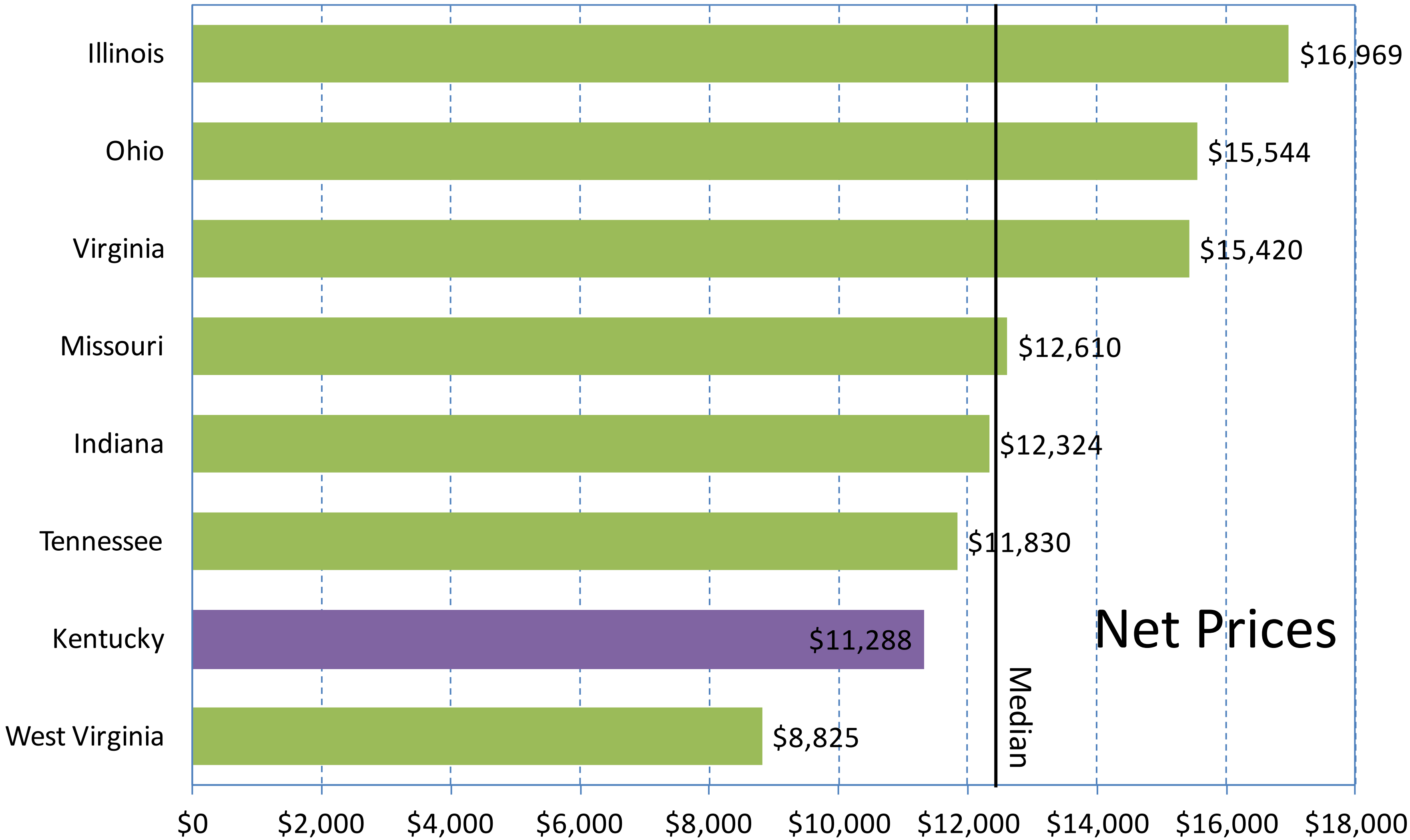
- Most students do not pay published sticker prices for their college education
- Net price is defined as total cost of college attendance minus all forms of student grant aid (funds not repaid)
- The average net price at Kentucky research institutions is below the regional average
- The net price at Kentucky comprehensive universities is among the lowest in our region
- Student aid covers the cost of tuition, fees, and books for all but the highest income students at KCTCS

Flagship Universities in Kentucky and Surrounding States
Average Net Price for Full-Time, Degree-Seeking Undergraduates
Academic Year 2013-14



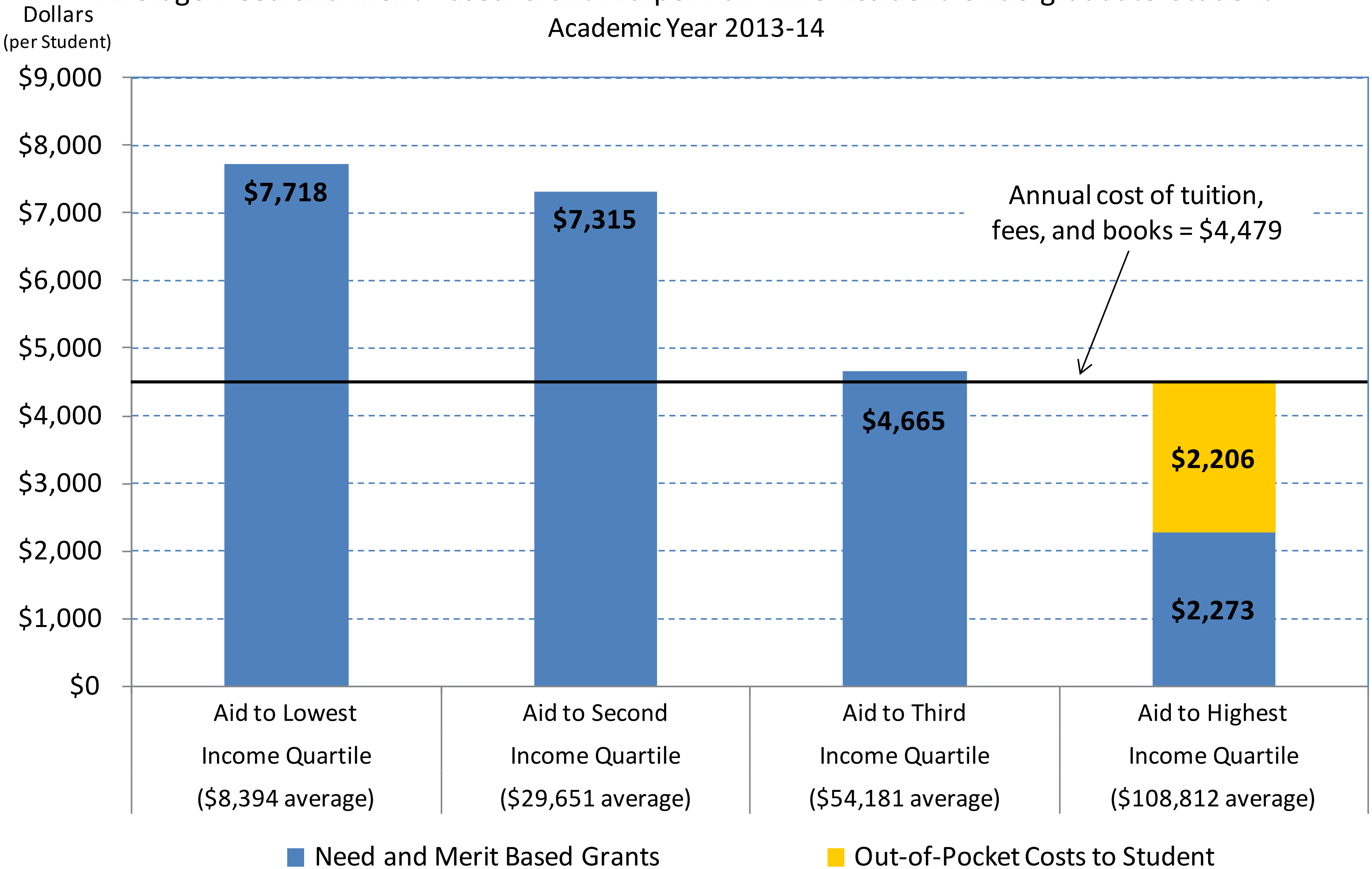
Source: Integrated Postsecondary Data System.

Comprehensive Colleges and Universities in Kentucky and Surrounding States
Average Net Price for Full-Time, Degree-Seeking Undergraduates
Academic Year 2013-14



Source: Integrated Postsecondary Education Data System.

Kentucky Community and Technical College System
Average Need and Merit Based Grant Aid per Full-Time Resident Undergraduate Student
Academic Year 2013-14

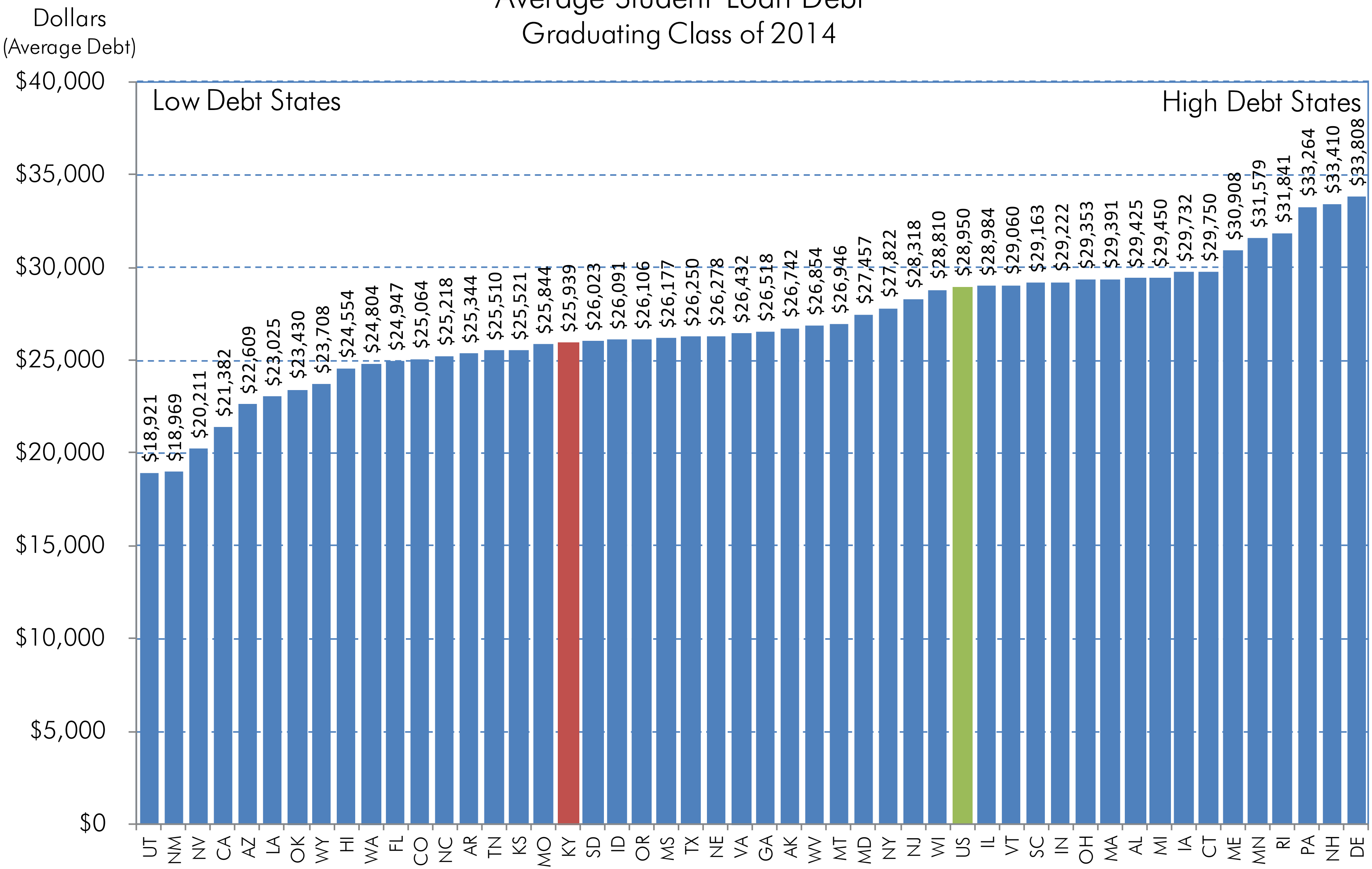


Sources: CPE Comprehensive Database; Integrated Postsecondary Data System.

Student Loan Debt Comparison

- Average student loan debt of graduating seniors and the proportion graduating with debt are important measures of college affordability
- Council staff performs annual assessments of student loan debt as part of the tuition setting process
- For the class of 2014, about 64% of graduated with debt
- On average, about 9.5% of monthly wages would be required to make monthly loan payments (2008; 5 years out)
- Kentucky has historically been, and continues to be, a relatively low student loan debt state

Four-Year Universities in Kentucky and the United States
Average Student Loan Debt
Graduating Class of 2014

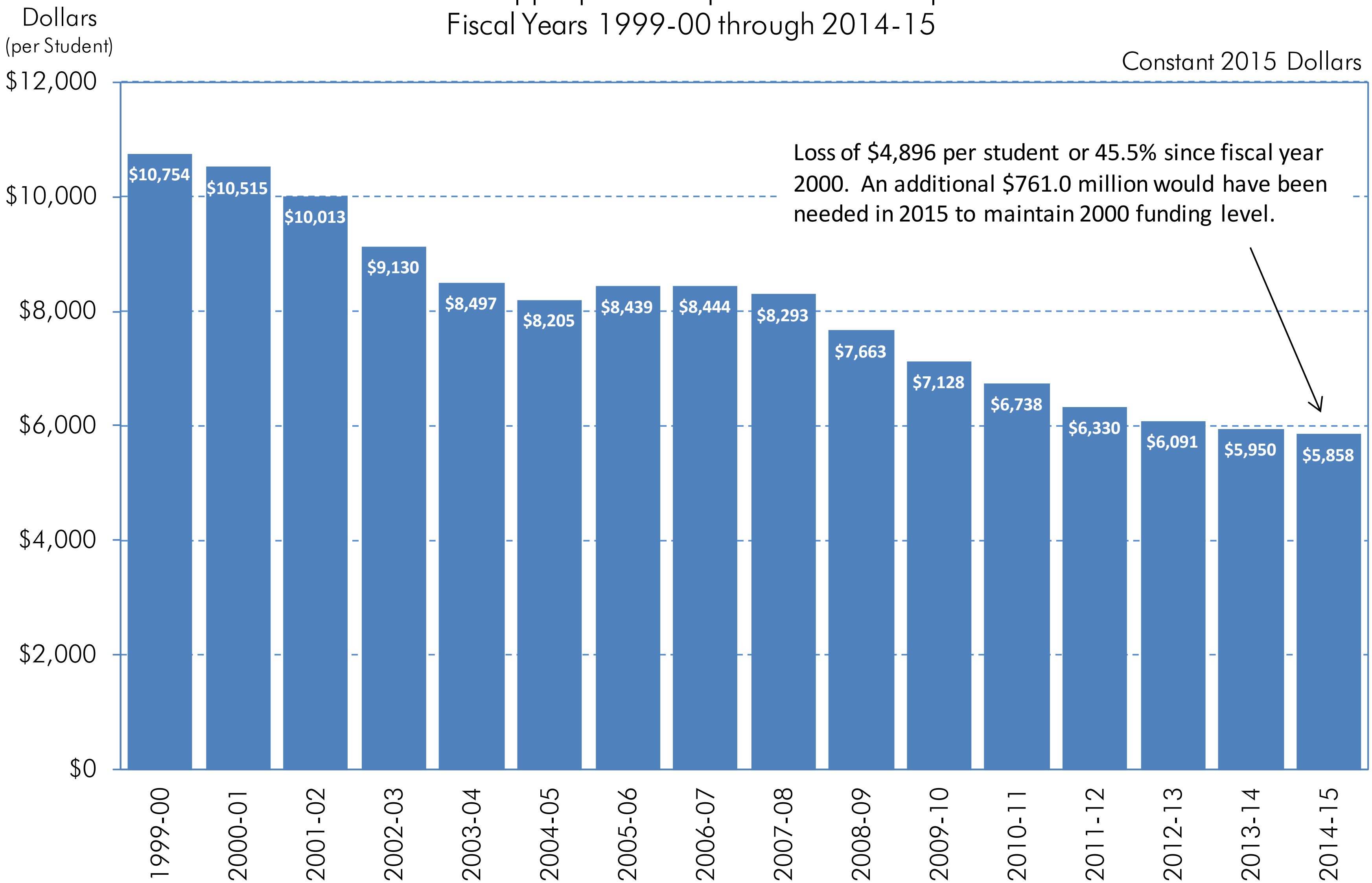


Source: The Project on Student Debt, Student Debt and the Class of 2014, December 2015.

Higher Education Funding Gap

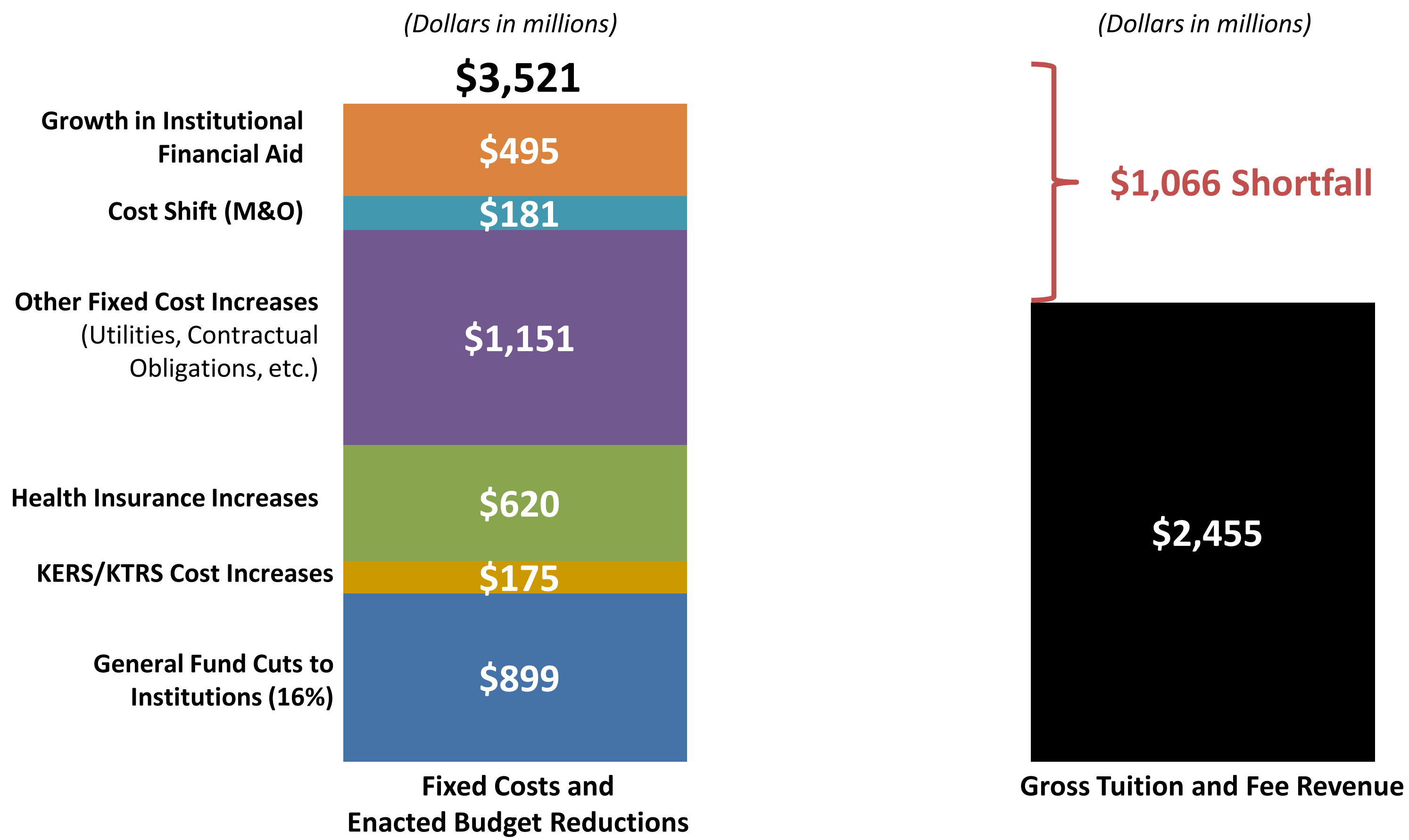
- Since 2008, the postsecondary institutions have lost $173 million or 16% of their General Fund support
- Looking at loss in nominal terms ignores impacts of:
  - enrollment growth
  - inflation (fixed costs increases)
  - mandated cost increases (KERS; M&O)
  - growth in campus funded student aid
- The best way to understand these budget challenges is on a inflation adjusted per student basis
- Tuition has not filled the gap caused by declining state support

Kentucky Public Postsecondary System
Net General Fund Appropriations per Full-Time Equivalent Student
Fiscal Years 1999-00 through 2014-15



Sources: Kentucky Budget of the Commonwealth; CPE Comprehensive Database; Commonfund Institute, Higher Education Price Index.

Challenges for Institutions: Impact of Budget Cuts from 2007-08 to 2014-15



Note: Some numbers are estimates, due to changes in data collection over the time period. Source: CPE KPEDS.

Parting Thoughts

- **CPE's role** as advocate for both students and institutions in tuition setting **has been responsive to the realities** of the marketplace, yet cutting the rate of growth down in the face of continual state cuts in funding.

- Even with tuition and fee income, **Kentucky's campuses cannot endure both General Fund appropriation cuts and tuition freezes without endangering the quality academic environments** they've worked hard to create and maintain.

- Overall, **tuition freezes may seem immediately helpful to students, however they are a long-term detriment** to our campuses, our students and Kentucky's employers depending on our campuses to produce a highly educated, highly trained workforce.

Making Kentucky
STRONGER BY DEGREES

Presentation to Senate Education Committee
Robert L. King, President Council on Postsecondary Education
February 18, 2016

Kentucky Public Postsecondary Sector
Average Yearly Increases in Resident Undergraduate Tuition and Fees
Academic Years 2002 - 2009 and 2009 - 2016

	7-Year AAGR 2002 - 2009	7-Year AAGR 2009 - 2016
Research Sector	10.4%	5.0%
Comprehensive Sector	12.1%	4.5%
Two-Year College Sector	14.0%	3.6%
Postsecondary System	11.7%	4.6%

61% Reduction in Average
Annual Increases FY09 - FY16

AAGR - Average Annual Growth Rate.
Source: CPE Comprehensive Database

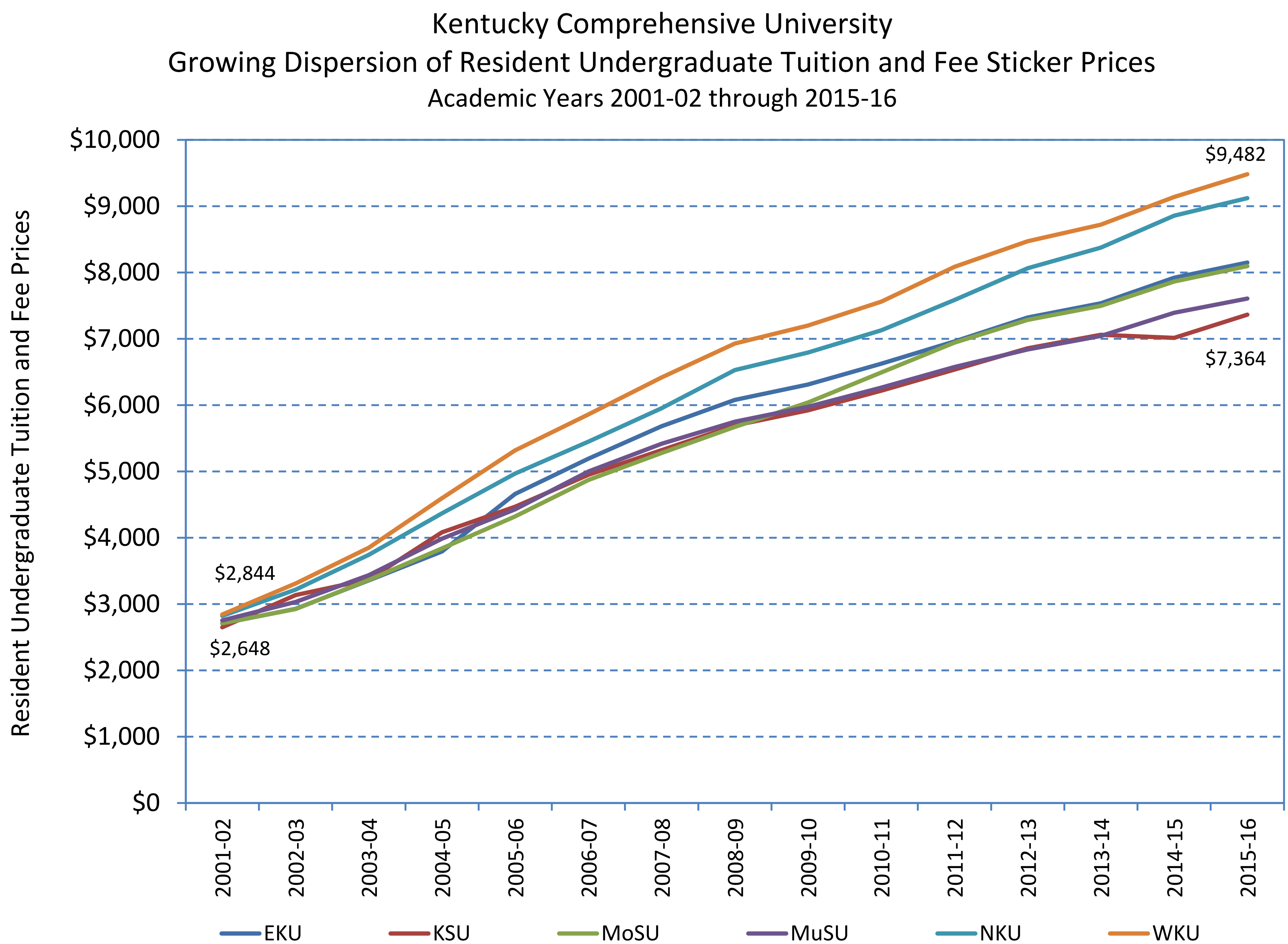
Kentucky Public Postsecondary Institution
Annual Tuition and Mandatory Fees for Full-Time Resident Undergraduate Students
Academic Years 2002 - 2009

Institution	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	Total Change	7-Year AAGR
University of Kentucky [1]	3,734	3,974	4,546	5,239	5,896	6,604	7,199	7,848	110.2%	11.2%
University of Louisville [2]	3,954	4,082	4,450	5,040	5,532	6,252	6,870	7,564	91.3%	9.7%
Eastern Kentucky University	2,706	2,928	3,358	3,792	4,660	5,192	5,682	6,080	124.7%	12.3%
Kentucky State University	2,648	3,134	3,370	4,081	4,468	4,950	5,320	5,692	115.0%	11.6%
Morehead State University [2]	2,710	2,926	3,364	3,840	4,320	4,870	5,280	5,670	109.2%	11.1%
Murray State University	2,754	3,032	3,436	3,984	4,428	4,998	5,418	5,748	108.7%	11.1%
Northern Kentucky University [2]	2,820	3,216	3,744	4,368	4,968	5,448	5,952	6,528	131.5%	12.7%
Western Kentucky University [2]	2,844	3,312	3,850	4,596	5,316	5,860	6,416	6,930	143.7%	13.6%
KCTCS	1,450	1,536	2,370	2,760	2,940	3,270	3,450	3,630	150.3%	14.0%
Research Sector Average	3,844	4,028	4,498	5,140	5,714	6,428	7,035	7,706	100.5%	10.4%
Comprehensive Sector Average	2,747	3,091	3,520	4,110	4,693	5,220	5,678	6,108	122.4%	12.1%
Two-Year College Sector Average	1,450	1,536	2,370	2,760	2,940	3,270	3,450	3,630	150.3%	14.0%
Postsecondary System Average	2,847	3,127	3,610	4,189	4,725	5,272	5,732	6,188	117.4%	11.7%

Academic Years 2009 - 2016

Institution	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total Change	7-Year AAGR
University of Kentucky [1]	7,848	8,241	8,735	9,260	9,816	10,110	10,616	10,936	39.3%	4.9%
University of Louisville [2]	7,564	7,944	8,424	9,126	9,662	9,946	10,432	10,738	42.0%	5.1%
Eastern Kentucky University	6,080	6,312	6,624	6,960	7,320	7,536	7,920	8,150	34.0%	4.3%
Kentucky State University	5,692	5,920	6,216	6,534	6,858	7,060	7,014	7,364	29.4%	3.7%
Morehead State University [2]	5,670	6,038	6,492	6,942	7,284	7,498	7,866	8,098	42.8%	5.2%
Murray State University	5,748	5,976	6,264	6,576	6,840	7,044	7,392	7,608	32.4%	4.1%
Northern Kentucky University [2]	6,528	6,792	7,128	7,584	8,064	8,376	8,856	9,120	39.7%	4.9%
Western Kentucky University [2]	6,930	7,200	7,560	8,084	8,472	8,722	9,140	9,482	36.8%	4.6%
KCTCS	3,630	3,750	3,900	4,050	4,200	4,320	4,530	4,650	28.1%	3.6%
Research Sector Average	7,706	8,093	8,580	9,193	9,739	10,028	10,524	10,837	40.6%	5.0%
Comprehensive Sector Average	6,108	6,373	6,714	7,113	7,473	7,706	8,031	8,304	36.0%	4.5%
Two-Year College Sector Average	3,630	3,750	3,900	4,050	4,200	4,320	4,530	4,650	28.1%	3.6%
Postsecondary System Average	6,188	6,464	6,816	7,235	7,613	7,846	8,196	8,461	36.7%	4.6%

Note: Prices displayed represent full-time comparison rates for resident undergraduate students taking 15 credit hours per semester for two semesters, or 30 credit hours per year.
[1] Undergraduate rates for UK are an average of upper and lower division rates.
[2] Beginning in 2011-12, figures for UofL, MoSU, NKU, and WKU include student requested and Council approved Special Use Fees.
AAGR -- Average Annual Growth Rate.
Source: CPE Comprehensive Database.



Kentucky Comprehensive University
Growing Dispersion of Resident Undergraduate Tuition and Fee Sticker Prices
Academic Years 2001-02 through 2015-16
Resident Undergraduate Tuition and Fee Prices
$10,000
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
$9,482
$7,364
$2,844
$2,648
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
EKU
KSU
MoSU
MuSU
NKU
WKU

Eastern Kentucky University

UNDERGRADUATE NON-RESIDENT RATE
Exception Request (Continuation)

Eastern Kentucky University has traditionally offered two types of undergraduate non-resident rates: non-resident and targeted. Eastern Kentucky has been working over the last three academic years to phase out the existing targeted tuition rate and just offer one non-resident rate. For the 2015-16 academic year, the rates are proposed as follows:

	Semester	*Multiplier*
Non Resident Targeted	*$7,920*	*1.94*
Non Resident	*$8,820*	*2.16*

It is the expectation that by 2016-17, Easter Kentucky no longer have to offer a non-resident targeted rate for continuing students because they will have earned their degree.

EKU requests an exception to the undergraduate nonresident rate multiplier of 2.0 for the **non-resident targeted area**. For a student to qualify for this non-resident targeted tuition, students must meet the criteria for full admission with a minimum of 2.0 GPA on a 4.0 scale (this includes transfer students) and meet at least one of the following three criteria:

1. Be the child of an EKU graduate who received an associates, bachelors, or masters degree.
2. Be any high ability student who has a cumulative GPA of 3.0 or higher on a 4.0 scale, and a composite ACT score of 25 or higher, with no sub-score below 18 in English, Math, or Reading.
3. Be a continuing student and live in a designated/targeted county in a state bordering Kentucky.

In fall 2015, there were 266 students that received the non-resident targeted rate.

	# of Students
New Freshman	*0*
New Transfer	*0*
Continuing	*266*
Returning/Readmit	*0*
TOTAL TARGETED	*266*

Breakdown by state of students receiving non-resident targeted rate.

State	# of Students
AL	2
AR	2
AZ	4
BC	1
CA	5
CT	2
DE	1
FL	4
GA	5
IA	1
ID	2
IL	8
IN	26
KS	1
MA	1
MD	5
ME	1
MI	1
MN	1
MO	2
MS	1
NC	3
NJ	1
NM	1
NY	3
OH	138
OR	1
PA	6
RI	1
SC	4
TN	12
TX	5
UT	2
VA	8
WA	2
WI	1
WV	2
TOTAL TARGETED	266

Northern Kentucky University
Rationale for Exception Requests

UNDERGRADUATE METROPOLITAN RATE

Exception Request (Continuation): assess a non-resident rate that is 1.51 times the resident rate for students from the Ohio area market (counties: Adams, Brown, Butler, Champaign, Clark, Clermont, Clinton, Darke, Delaware, Fairfield, Fayette, Franklin, Greene, Highland, Hamilton, Licking, Madison, Miami, Montgomery, Pickaway, Pike, Preble, Ross, Scioto, Union, and Warren.

Average number of students projected for Fall/Spring 2015-16: 2,507 students

NKU requests continuation of the Metro tuition rate to allow NKU to remain competitive in our Ohio market, maintain our financial base, and continue our current proportion of resident to non-resident students. Given our low levels of state funding relative to other comprehensive institutions and our dependence on non-resident tuition dollars for nearly 40% of our overall tuition revenue, NKU cannot afford to jeopardize this source of funding and risk fiscal instability should these students decide to transfer to other institutions in our very competitive regional market. Such a loss would result in a substantial compromise of quality, especially given the high costs of operating in an urban environment. By continuing the Metro rate, our full-time annual Metro tuition rate will be more than $1,980 more than the University of Cincinnati resident rate. At the recommended rate, Ohio residents from the targeted counties will still pay roughly $17,856 more for their four-year degree than Kentucky residents. This exception applies to 18% of our overall undergraduate population.

In addition, continuation of the Metro tuition rate will allow NKU to continue to attract and retain students which enhance diversity while progressing towards meeting Northern Kentucky labor needs. NKU recognizes that it will not attain enrollment goals set by CPE solely on Kentucky residents.

PACE (PROGRAM FOR ADULT-CENTERED EDUCATION) RATE (CONTINUATION)

Exception Request (Continuation): assess resident rates to non-resident students in the PACE program

Average number of student projected for Fall/Spring 2015-16: 5 nonresident students

NKU wishes to continue offering resident rates to non-resident PACE program participants. Given NKU's location in a tri-state economic region, the PACE program is designed to serve adults who both live and work in Kentucky, live in Kentucky and work in Ohio or Indiana, and live in Ohio or Indiana but work in Kentucky. Since the PACE program is self-supporting, the revenue generated by non-resident students subsidizes the program and helps pay for fixed costs (primarily faculty salaries). Without this revenue, it would not be feasible to offer the program on a self-supporting basis to Kentucky adults. A market analysis of other programs within the region suggests that charging the regular non-resident rate would price the program out of the market. No Kentucky resident has been denied access to the PACE program due to space limitations resulting from non-resident enrollments.

April 30, 2013
File: 6NKU Attach C

WKU A Leading American University with International Reach

WESTERN KENTUCKY UNIVERSITY
TUITION PARAMETER EXCEPTION REQUEST FOR NONRESIDENT STUDENTS

REQUEST: Western Kentucky University is requesting Council on Postsecondary Education's approval to continue its Tuition Incentive Program (TIP).

BACKGROUND:

WKU requests that we be able to continue our Tuition Incentive Program that ensures economic access and geographic access to students and contributes to achieving a diverse student body. Approximately 31% of TIP students are classified as underrepresented minorities. Since 2000, the Tuition Incentive Program has been marketed to students, parents and counselors as an affordable alternative to an in-state college or university. Students enrolled through TIP become residential students living on campus and in the Bowling Green/Warren County community.

The TIP rate is 1.33 times the in-state tuition and fees rate in comparison to the out-of-state and international rates which are 2.56 times and 2.63 times the in-state rate, respectively. The CPE nonresident parameter is two times the in-state rate. We are requesting that the CPE continue to approve the TIP rate which attracts students to Kentucky and is an efficient, easily understood recruitment tool.

Potential number of students impacted: 1,400 students or 7% of total enrollment based on fall 2014.

https://www.wku.edu/scholarship/documents/tipbrochure.pdf

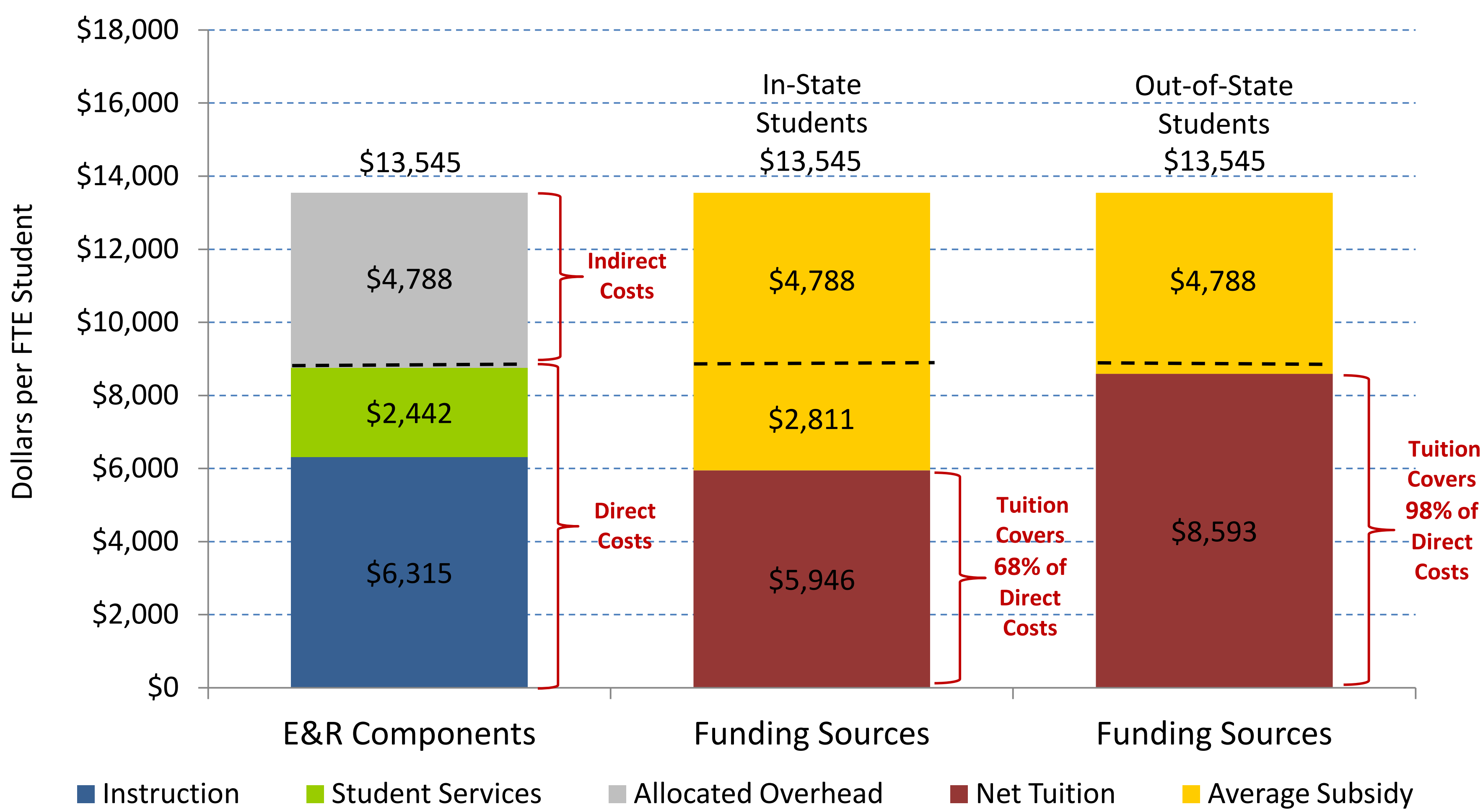
Council on Postsecondary Education
Nonresident/Resident Undergraduate Tuition and Fee Rate Multiples
Academic Year 2015-16

Institution/Rate Category	Resident UG Rate	Nonresident UG Rate	Nonresident to Resident Ratio
University of Kentucky	$10,936 [a]	$24,268 [a]	2.22
University of Louisville	$10,542	$24,848	2.36
Eastern Kentucky University			
Standard Rate	$8,150	$17,640	2.16
Nonresident Targeted Area Exception Rate [b]		$15,840	1.94
Kentucky State University	$7,364	$17,666	2.40
Morehead State University	$7,966	$20,114	2.52
Murray State University	$7,608	$20,712	2.72
Northern Kentucky University			
Standard Rate	$8,736	$17,472	2.00
Undergraduate Metropolitan Exception Rate		$13,200	1.51
Program for Adult-Centered Education (PACE) Exception Rate		$9,336	1.07
Western Kentucky University			
Standard Rate	$9,282	$23,932	2.58
Tuition Incentive Program (TIP) Exception Rate		$12,388	1.33
KCTCS			
Resident	$4,410		
Nonresident - Contiguous Counties Rate		$8,820	2.00
Nonresident - Other Rate		$15,450	3.50

Note: Above rates do not include Special Use Fees.
[a] Average of tuition and fee rates charged to upper and lower division UK students.
[b] EKU is planning to end their nonresident rate exception for the 2016-17 academic year.

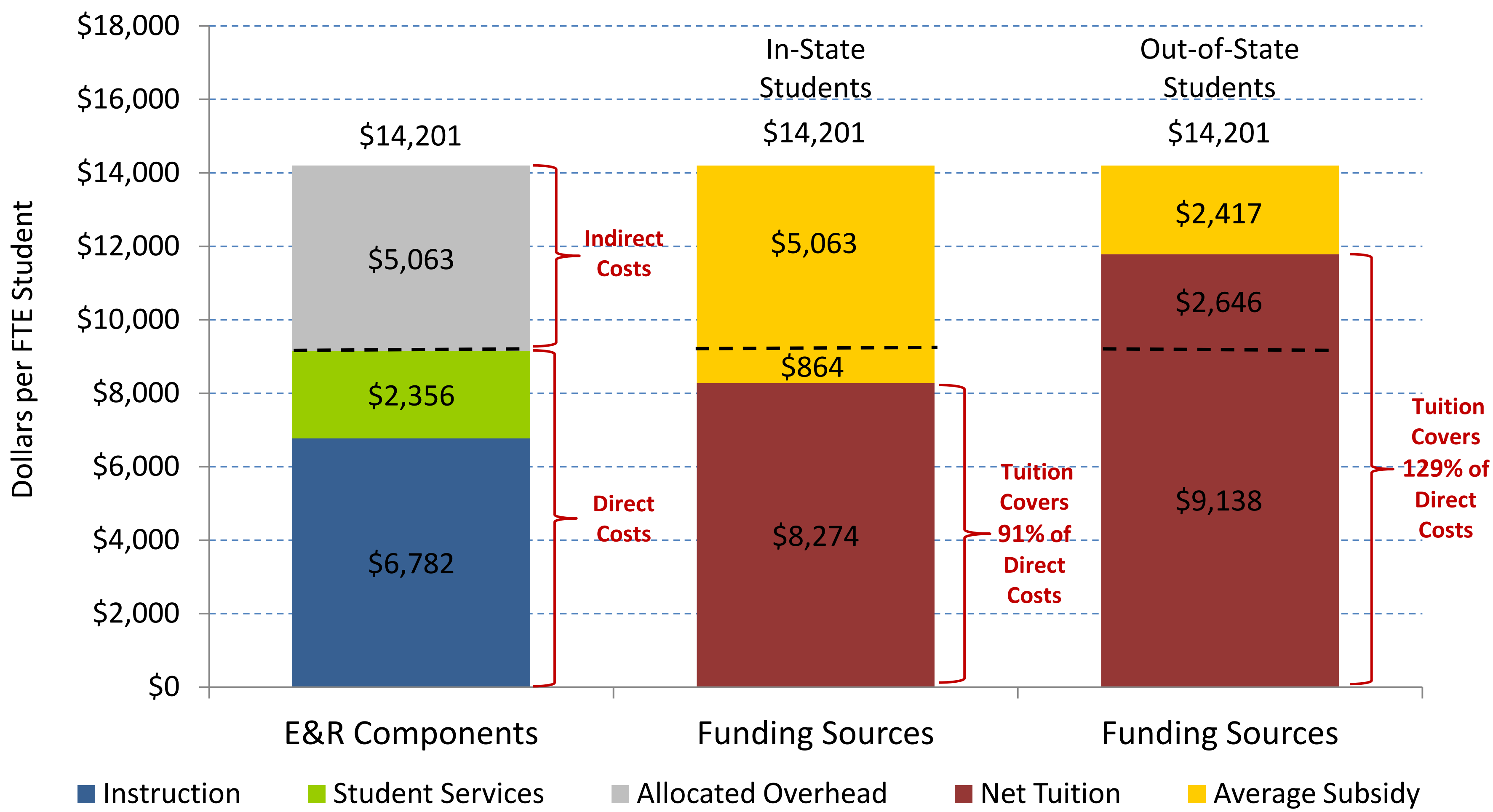
Draft - For Discussion Purposes Only
April 1, 2015

Morehead State University
Education and Related Spending per FTE Student by Component Compared to Net Tuition Revenue and Average Subsidy per FTE Student
Fiscal Year 2012-13



Draft - For Discussion Purposes Only
April 1, 2015

Northern Kentucky University
Education and Related Spending per FTE Student by Component
Compared to Net Tuition Revenue and Average Subsidy per FTE Student
Fiscal Year 2012-13



Student Loan Debt, Post-Graduation Earnings, and Potential for Debt Repayment of Public Universities' Graduates in Kentucky

Lee Nimocks and Dmitry Suspitsyn
CPE, Research and Policy Analysis
February 19, 2016
Tuition Development Work Group Meeting

Kentucky Council on Postsecondary Education

Research Questions

- What are the trends in and patterns of loan borrowing among recent graduates with student loan debt in KY?
- What are the employment outcomes of recent graduates with student loan debt in KY?
- What is the extent of financial burden for graduates with loan debt? Will borrowers have difficulty meeting their repayment obligations?

Methodology

- Data: KPEDS and KCEWS
- The loans include Federal subsidized and unsubsidized Stafford loans, Perkins loans, Federal health professions loans, institutional loans, and other loans (excludes credit card, car loans, etc.);
- Debt-to-income ratios;
- Monthly payment estimates assume borrowers are on standard 10-year repayment plan with a fixed annual interest rate of 6.8%;
- Seven areas of study: Arts & Humanities; Business & Communication; Education; Health; STEM; Social & Behavioral Sciences; and Trades.

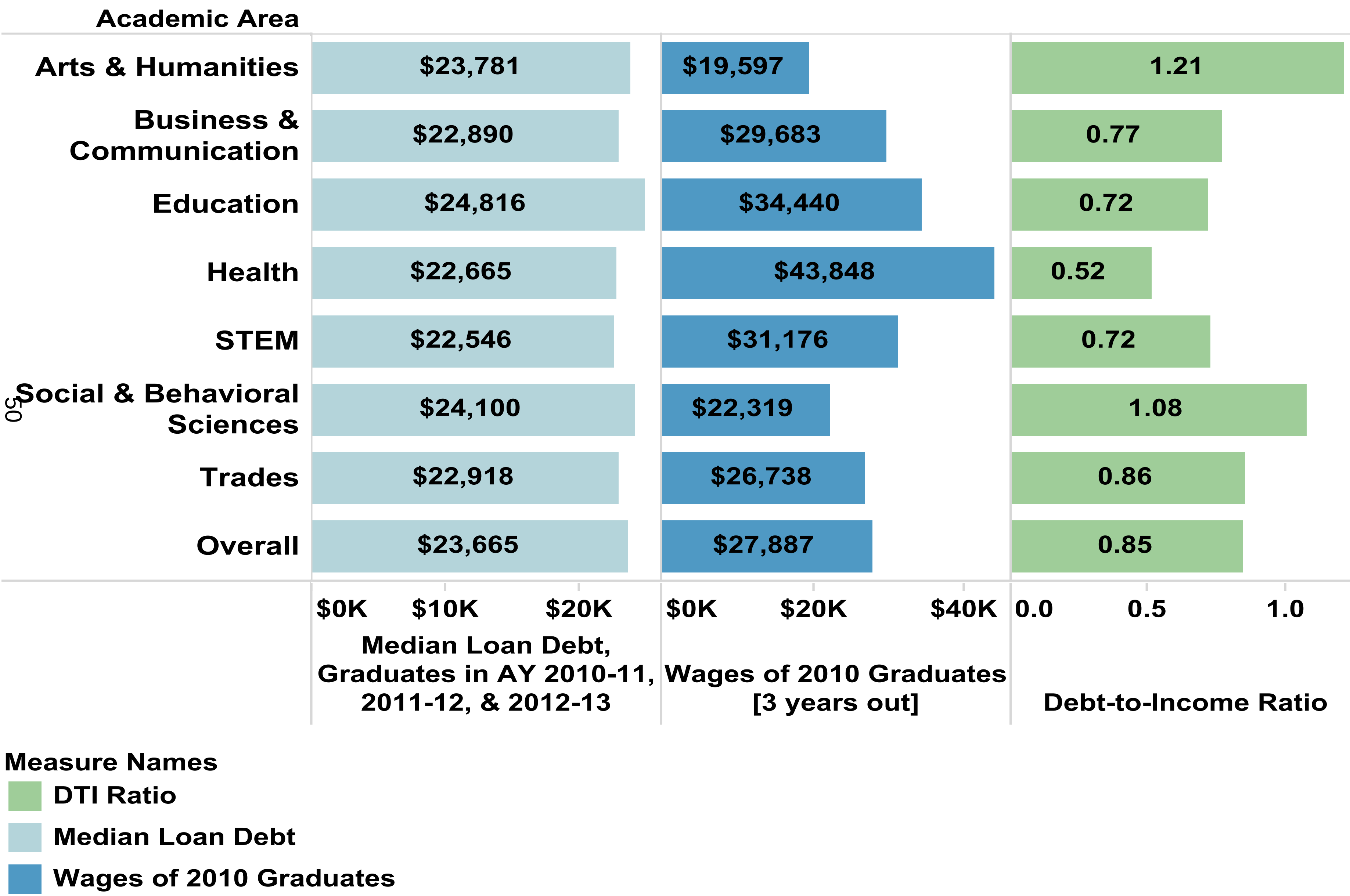
What Levels of Student Debt are Reasonable?

- A debt-to-income ratio is the ratio of total debt to the borrower's income; (ratios will be generally higher when they graduate from college and lower, as individuals begin to earn more money.)

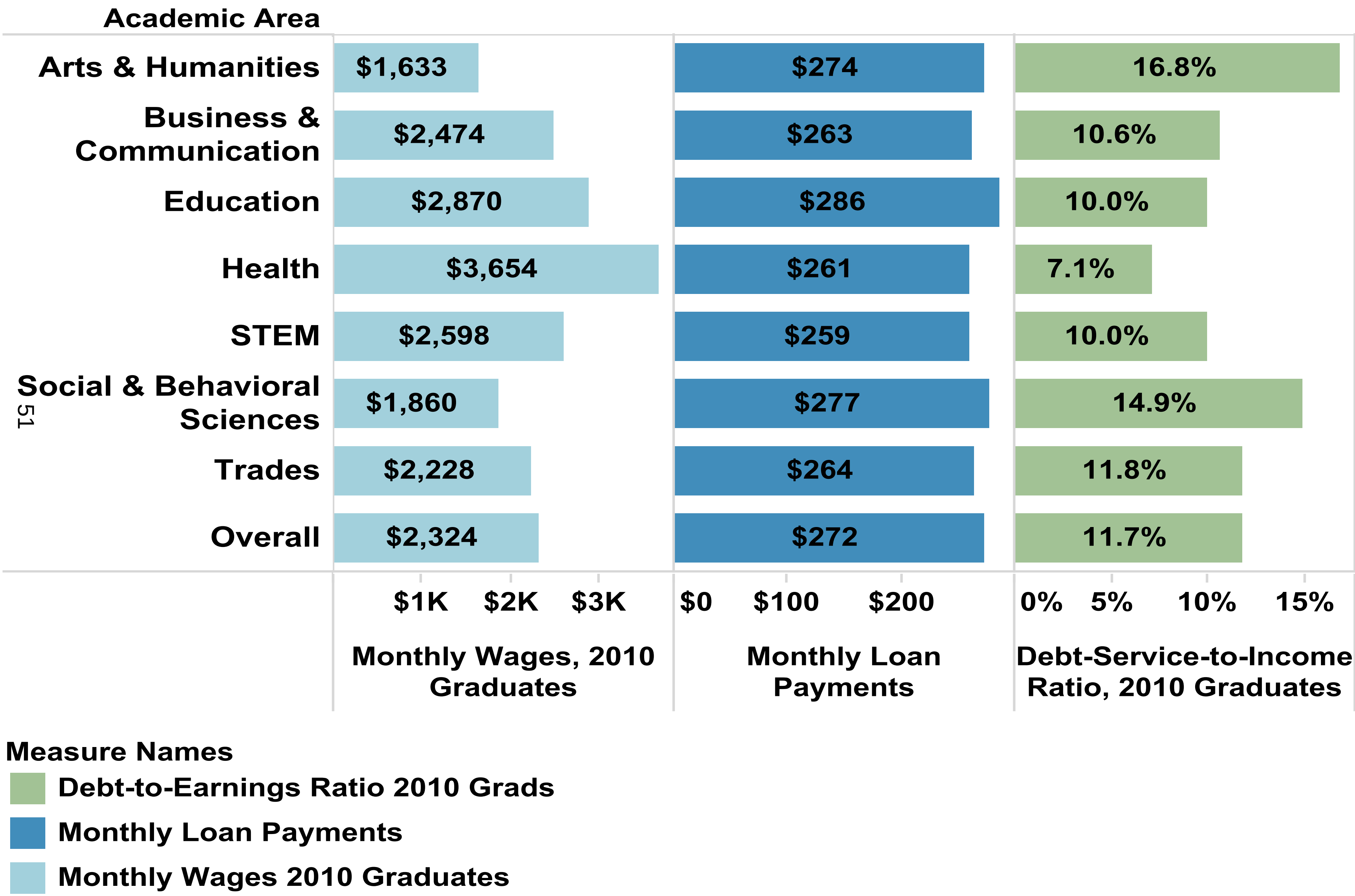
- A rough method is to compare annual starting salaries of college graduates with their average student loan debt loads (ratio should be over 1);

- A debt-service-to-income ratio is the ratio of the normal monthly payments on the borrower's loans to the borrower's gross monthly income. (Debt payments should be in the range of 10-12% of the earners' monthly income).

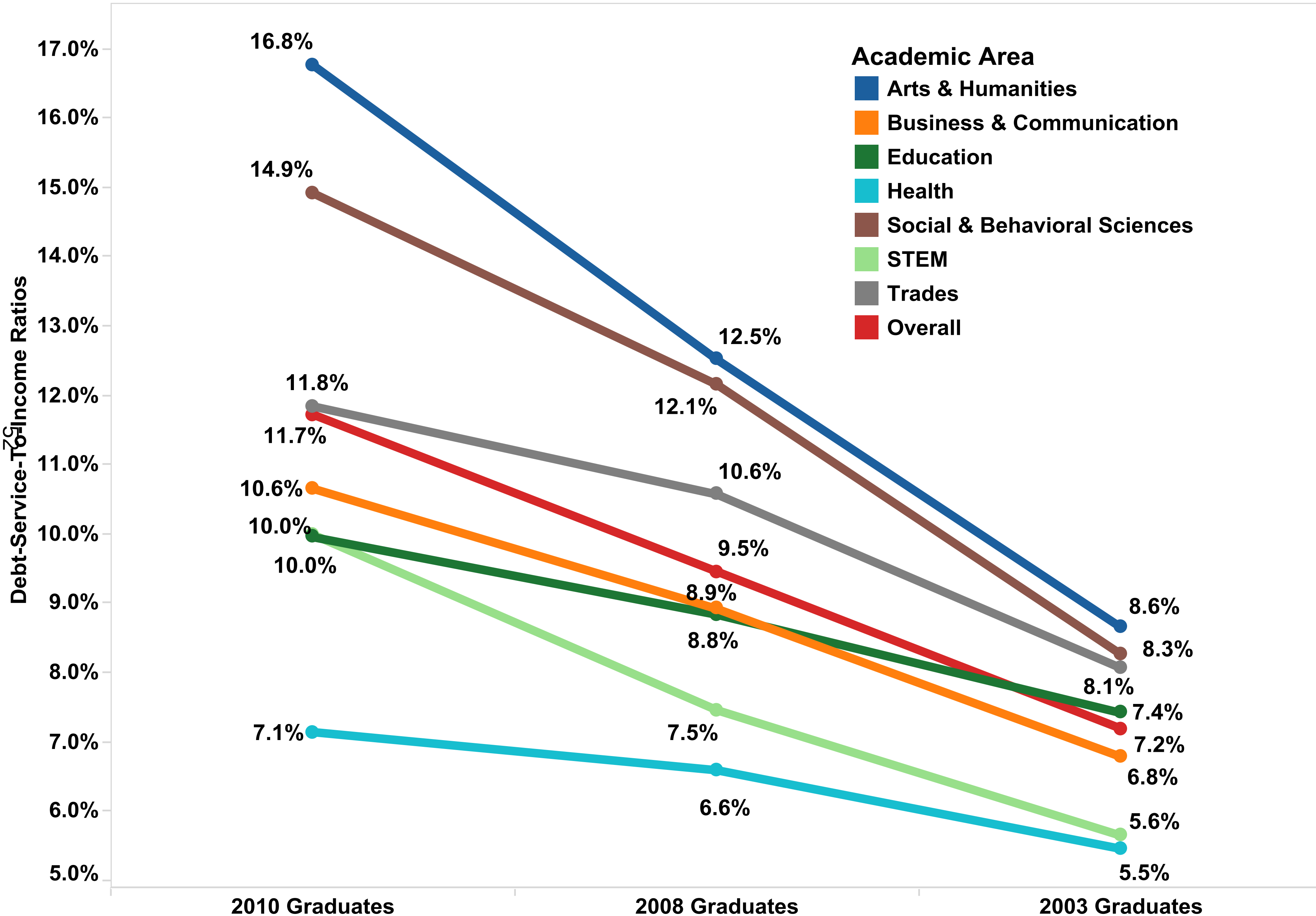
Median Loan Debt, Median Wages, and Debt-to-Income Ratios by Academic Area for Recent Graduates of Kentucky's Public Universities



Monthly Wages, Monthly Loan Payments, and Debt-Service-to-Income Ratios by Academic Area for Recent Graduates of Kentucky's Public Universities



Debt-Service-to-Income Ratios by Academic Area for Graduates Three, Five, and Ten Years after College Completion at Kentucky's Public Universities



Conclusions and Policy Implications

- The majority of public university graduates with student loan debt in Kentucky have earnings sufficient to allow them to repay their debt during the ten-year time frame.
- Higher education in Kentucky remains affordable for the vast majority of students, particularly for STEM and Health majors.
- Liberal arts and humanities majors have most difficulty to manage their debt and repayments initially after college completion, but they are capable of coping with the debt burden in the medium and longer-run;
- Federal loan repayment system has several flexible repayment plans that may help minimize the repayment burden: Income-Based, Income-Contingent, Income-Sensitive, Pay As You Earn (PAYE).

Final Considerations

- Information for prospective college students BEFORE they enroll is key (Role of Advising).
- Pick your major carefully: The major matters the most in terms of future earnings and repayment potential.
- Getting a college degree, even with some debt, is better than not getting a college degree (The opportunity costs of NOT getting a college degree are too high!)
- Do we have a debt crisis or a repayment crisis?
- The Loan system should be fine-tuned like a Stradivarius violin to take the full advantage of its benefits (access to HIED for low-income students) and avoid risks and costs of unduly debt.

STUDENT LOAN DEBT IN KENTUCKY

Office of Research & Policy Analysis
October 2015

An Analysis of Debt Levels and Their Relationship to Earnings for Baccalaureate Degree Holders of Public Universities, 2010-2013

Kentucky Council on Postsecondary Education

The Council on Postsecondary Education is charged with leading the reform efforts envisioned by state policy leaders in the *Kentucky Postsecondary Education Improvement Act of 1997*. The Council has multiple responsibilities to ensure a well-coordinated and efficient postsecondary and adult education system. Among its many responsibilities, the Council:

- develops and implements a strategic agenda for the postsecondary and adult education system.
- produces and submits a biennial budget request for adequate public funding of postsecondary education.
- monitors and approves tuition rates and admission criteria at public postsecondary institutions.
- defines and approves all academic programs at public institutions.
- ensures the coordination and connectivity of technology among public institutions.
- collects and distributes comprehensive data about postsecondary education performance.
- licenses all non-public, degree-granting colleges that operate in the state.
- administers the state's Adult Basic Education program and GED® Testing Service.

The duties of the Council on Postsecondary Education are outlined in the *Kentucky Postsecondary Education Improvement Act of 1997*, Section 74 through 84 (36K DOC).

Table of Contents

Executive Summary

Students and their families need timely information about the potential economic benefits of a college education—information that can maximize their return on investment, enable them to make justifiable choices about majors, and keep them from making unwarranted borrowing decisions. The problem is that few students have a good idea of their potential earnings before they enroll in a college or university or choose a field of study, or more importantly, before they take out loans to pay for that education. The goal of this report is to contribute to informed discussions about affordable loan debt, and to highlight the relationship of academic majors to student loan debt and earnings after graduation.

Student Debt

- In 2012-13, 64 percent of students who earned bachelor's degrees from Kentucky's public universities graduated with loan debt, borrowing an average of $25,607.
- Between 2010-11 and 2012-13, the average loan amount of graduates with loans at Kentucky's public universities increased approximately 13 percent. The trend was characterized by diminishing shares of borrowers with smaller balances and increasing shares of loan holders with larger amounts.
- In 2012-13, the most prevalent outstanding balance was between $20,001 and $30,000, held by 29 percent of all borrowers. The share of borrowers with the highest balance of $50,000 and above was 6.4 percent.
- In 2012-13, Pell-eligible students held 16 percent more debt upon graduation compared to non-Pell-eligible graduates. However, the debt of non-Pell-eligible graduates grew at a faster annual rate than the debt of Pell-eligible graduates (6.8 percent vs. 5.4 percent, respectively).
- In 2012-13, African-American students borrowed at a higher rate than individuals of other racial/ethnic groups (83 percent), and they held the highest average amount of debt ($29,819).
- In 2012-13, non-traditional students, on average, owed 47.6 percent more in loan debt than traditional students.
- In 2012-13, health graduates carried the highest average debt load ($26,420), and trades graduates (e.g., construction, transportation) had the lowest level of debt ($24,459).

Post-College Earnings

- The median wages of the 2010 graduates employed in Kentucky in FY 2012-13 ranged from $19,597 for arts and humanities fields to $43,848 for healthcare fields.
- Three years after college completion, graduates of programs in health and education enjoyed the greatest short-term economic benefits, with average annual earnings of $43,848 and $34,440, respectively.
- Ten years after college completion, graduates of health and STEM fields secured the largest economic returns, with annual earnings of $57,386 and $55,163, respectively.
- Majors earning graduates the lowest salaries, such as arts and humanities and social and behavioral sciences, saw the fastest rates of growth ten years after graduation (94 percent growth for majors in liberal arts and humanities and 81 percent growth for majors in social and behavioral sciences).
- Compared to the state average, health graduates had the highest wages (44 percent higher than the average of all fields of study), and graduates of arts and humanities programs had the lowest earnings (76 percent of the average amount for all fields of study) five years post-graduation.
- Ten years after graduation, STEM fields proved the most lucrative for research university graduates (with median wages of $68,339), and healthcare was the most highly paid field for comprehensive university graduates (with median wages of $56,165).
- Ten years after completing college, the earnings differential between STEM graduates from research universities and comprehensive universities was approximately $10,000 in favor of the former.

Affordable Debt Levels and Loan Repayment

- Three years after college completion, the average monthly loan payment for bachelor's degree graduates of Kentucky's public universities was $272, and their average monthly earnings were $2,324. The debt service-to-income ratio was 11.7 percent.
- Of all areas of study, arts and humanities and social and behavioral sciences had the highest debt service-to-income ratios of 16.8 percent and 14.9 percent three years after graduation. While these majors' starting wages may be relatively low initially, they rapidly rise and allow for manageable loan service over time.
- STEM graduates had the lowest debt service-to-income ratio, with only 7 percent of their monthly income dedicated to repaying education loan debt during the third year after college completion.
- Variation in earnings had a larger impact on debt service-to-income ratios than levels of loan debt.

This report shows that the majority of public university graduates with student loan debt in Kentucky have earnings sufficient to allow them to repay their debt during the ten-year time frame. This finding underscores the fact that higher education in Kentucky remains an affordable endeavor. Nevertheless, the rate of growth in student loan debt over the past three years suggests that loan counseling should become a widespread practice at colleges and universities.

Introduction

Student loans can be a good investment in an individual's future, providing financial access to higher education and improved chances of economic success after college. However, avoiding undue financial obligations and maximizing the return on investment require careful planning and prudent borrowing. Estimating whether the student loan debt burden will be manageable and offset by sufficient wages in the future is essential for a sound decision on the potential benefits of higher education. With students taking on record levels of student loan debt, it is important to explore the scope and limits of affordable debt and the relationship between the optimal amount of borrowing and expected post-graduation earnings.

Post-graduation earning potential is influenced by both the level of education and the choice of a major, which influences graduates' occupations. In some cases, the influence of a major on earnings may be even more pronounced than the level of education completed. According to a recent report[1] from the Georgetown Center on Education and the Workforce, bachelor's degree holders in architecture and engineering on average earn more annually than graduate degree holders in education.

A pivotal component of an individual's human capital, the choice of academic major is closely related to both loan borrowing and post-collegiate earnings. Given that much of the variation in post-collegiate earnings is driven by graduates' academic programs of study, economic returns of a college major and the optimal level of student loans needed to finance the chosen academic specialty take on significance in return-on-investment calculations.

Income growth patterns and the timing of reaping the full economic benefits of college also vary by academic major. Graduates of some fields of study (e.g., STEM) may experience immediate economic benefits upon graduation and subsequently slow wage growth, while other majors' starting wages (e.g., liberal arts and humanities) may be relatively low initially, but increase substantially over time. Given that most loans are repaid during the first ten years after college, students with lower initial incomes may experience heavy burdens of student loan repayment immediately after graduation, but manage debt relatively easily later in their careers.

This study focuses on the potential burden of student loan repayment incurred by bachelor's degree graduates from Kentucky institutions with various academic majors using a debt-to-income analysis (comparisons of annual student loan debt to annual income). Specifically, it explores income potential by major, the extent to which loan repayment burdens vary by major, the levels of affordable debt by major, and the levels of post-graduation earnings necessary to repay student loan debt. Graduates' academic majors are broken out by seven areas of study[2], including arts and humanities, education, business and communication, STEM, health, social and behavioral science, and trades.

The report is organized as follows: Section 1 displays the percentage of graduates with loan debt and the average student loan debt at graduation broken down by gender, age, socio-economic status, race and ethnicity, and fields of study. Section 2 presents data on average annual earnings by academic area and institutional sector. Section 3 explores the relationship between average earnings and loan debt levels through shares of earnings needed to repay loans under the traditional 10-year repayment plan. Findings and policy implications are discussed in the concluding section.

Data on student financial debt and demographic characteristics comes from Kentucky's comprehensive postsecondary education database (KPEDS), a statewide data system maintained by the Council on Postsecondary Education. Data on student earnings is provided by the Kentucky Center on Education and Workforce Statistics (KCEWS), an inter-agency entity that utilizes unemployment insurance wage records.

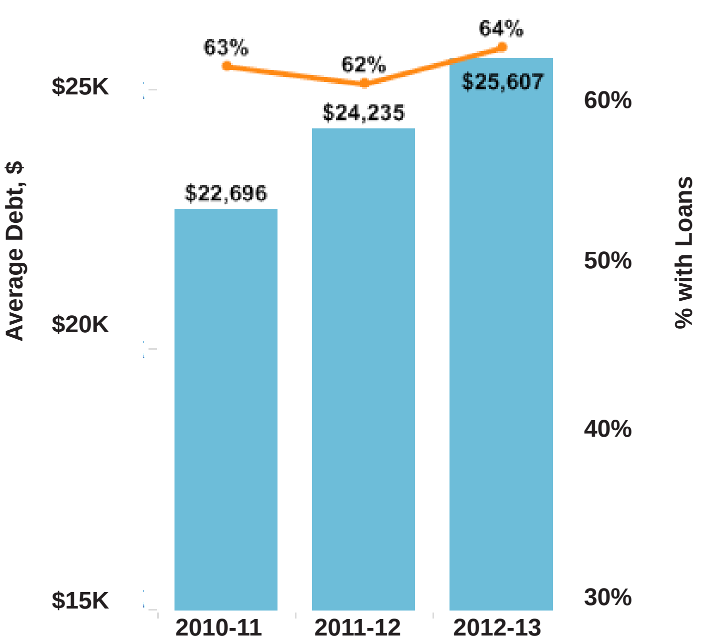
Part 1: Student Loan Debt

The average amount and prevalence of loan debt for college graduates is a central public policy concern for the Federal government and state policymakers and legislators, as it is intimately connected to issues of postecondary access and affordability. However, debt levels vary across states, depending on financial aid policies, tuition and fees, and the economy. Currently, Kentucky is among 10 states with the lowest student debt[3]. This study highlights the student loan debt burden of bachelor's degree graduates of Kentucky's public universities, focusing on the levels and amounts of loans[4] for students who graduated with debt between 2010-11 and 2012-13.

Typical Student Loan Debt For Recent Graduates With Loans In Kentucky

The average student loan debt of graduates of Kentucky's public universities increased steadily between academic year (AY) 2010-11 and AY 2012-13. The average loan debt of bachelor's degree recipients who graduated with debt rose from $22,696 in 2010-11 to $25,607 in 2012-13, an increase of nearly 13 percent. The percentage of graduates who took out loans fluctuated only marginally (from 63 percent to 64 percent) during the same period of time.

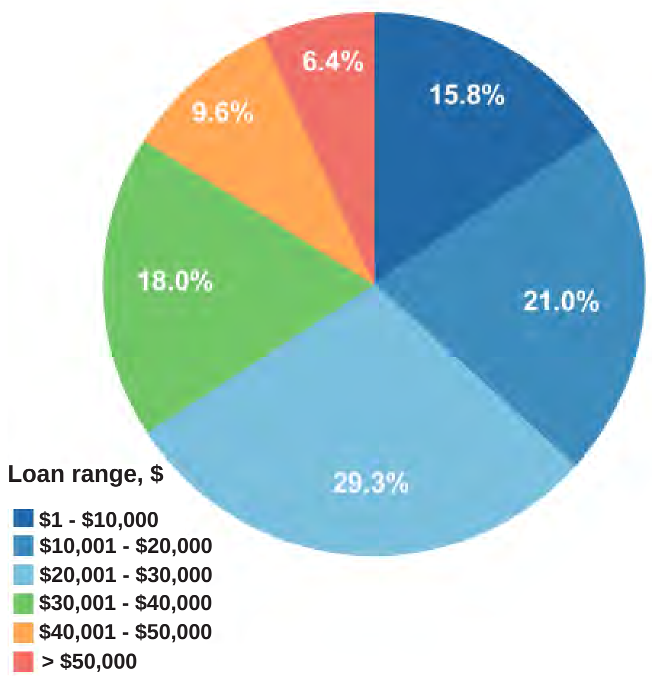
Figure 1. Loan Debt of Kentucky Public 4-Year Graduates Increased 13% between 2010-11 and 2012-13



Distribution of Debt

In AY 2012-13, 10,388 bachelor's degree graduates of four-year public institutions in Kentucky held student loan debt. This number represented 64 percent of all graduates in the public, four-year sector who completed their baccalaureate programs of study with or without student debt. Of the group with loans, two out of three borrowers (66 percent) held balances of $30,000 and below, while 16 percent had loan debt of $40,000 and higher. The most prevalent outstanding balance was between $20,001 and $30,000, representing 29 percent of all loan holders. The smallest segment (6.4 percent) included borrowers who graduated with debt exceeding $50,000.

Figure 2. Bachelor's Degree Graduates with Loan Debt by Level of Balance in AY 2012-13, % of Loan Recipients



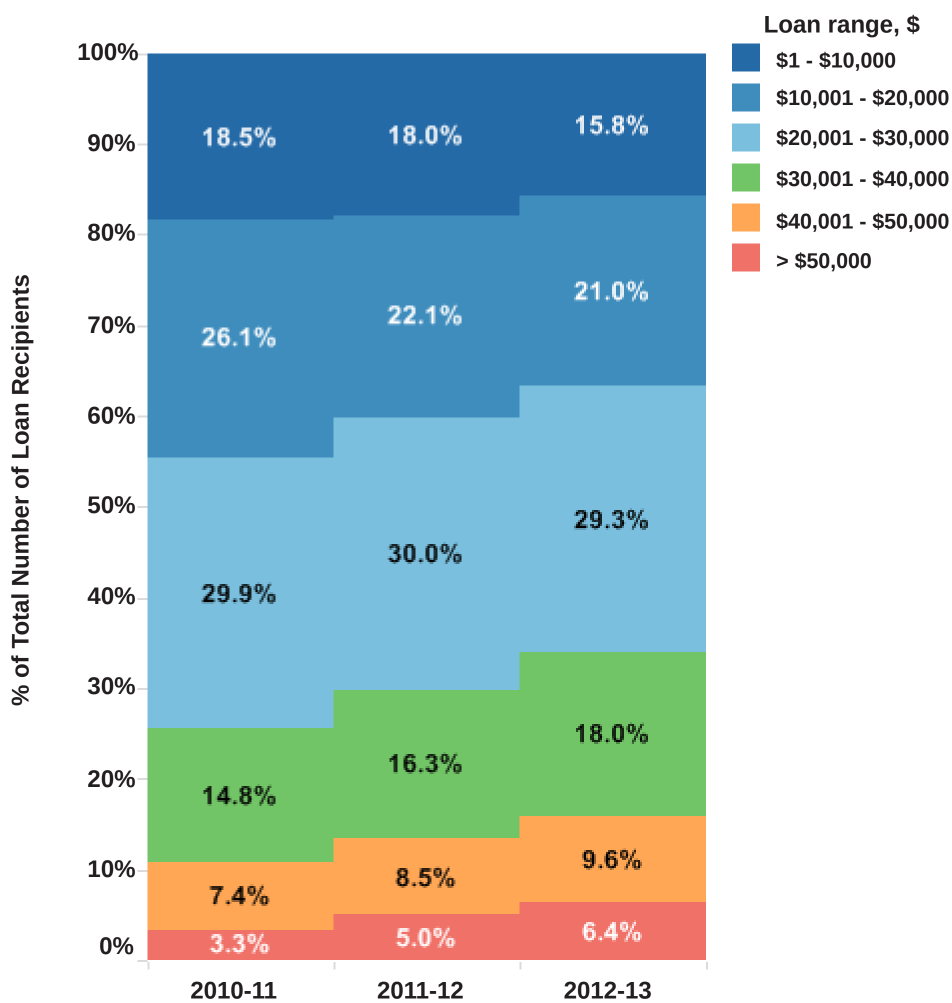
Trends in Loan Debt

Between AY 2010-11 and AY 2012-13, bachelor's degree graduates with student loans increased the amount they borrowed to fund their education, as indicated in the chart below. Among all student loan borrowers, the trend was characterized by diminishing shares of borrowers with smaller balances and increasing shares of loan holders with larger amounts. For example, the percentage of graduates with loan debt totaling $30,001 or more grew steadily (from 25.5 percent in 2010-11 to 34 percent in 2012-13) while the percentage of graduates holding loan debt of $30,000 or less steadily decreased (from 74.5 percent of all borrowers in 2010-11 to 66.1 percent in 2012-13). The percentage of student loan borrowers holding $50,000 or more in loan debt increased from 3.3 percent to 6.4 percent, the largest growth in all categories. Conversely, the largest decrease was among graduates holding between $10,001 and $20,000 in loan debt—a drop of 19.5 percent.

Income Status

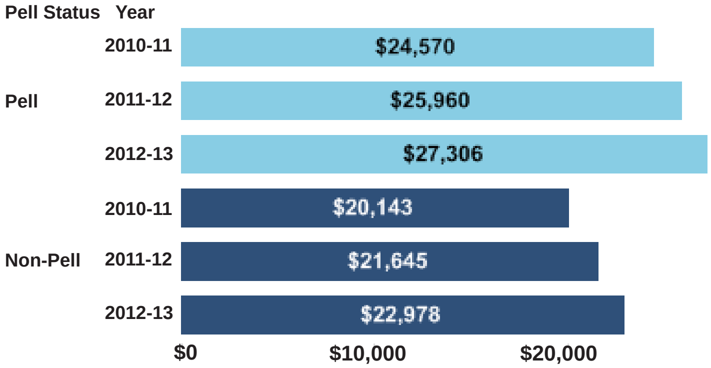
Between 2010-11 and 2012-13, average debt levels increased for graduates from both low-income and more affluent backgrounds. The average debt of Pell Grant recipients grew 11 percent between AY 2010-11 and AY 2012-13 (from $24,570 to $27,306). Similarly, the average debt of non-Pell-eligible graduates grew 14 percent in the same period (from $20,143 to $22,978). Not surprisingly, low-income students incurred more debt than their coun-

Figure 3. Percent of Bachelor's Degree Graduates with Loan Debt by Level of Balance, AY 2010-11 to AY 2012-13



terparts, but that gap decreased or remained stagnant. In 2010-11, Pell-eligible graduates held 18 percent more debt than their non-Pell-eligible counterparts. In 2011-12, that gap fell to 16 percent and remained at that level in 2012-13. Furthermore, the debt of non-Pell-eligible graduates grew at a faster annual rate than the debt of Pell-eligible graduates (6.8 percent vs. 5.4 percent respectively).

Figure 4. Low-Income Graduates Incur Greater Debt than more Affluent Students



Gender

More women than men borrowed money and, on average, they borrowed a slightly larger amount during the time under review. For instance, two out of three female graduates took out loans to finance their baccalaureate degrees, compared to six out of ten male counterparts. In the same year, women's average debt was two percent higher than that for men. The gaps between average debt load for men and women and the percentage of men and women who borrowed remained relatively stagnant between AY 2010-11 and AY 2012-13.

Race and Ethnicity

In AY 2012-13 African Americans borrowed at a higher rate than those of other racial/ethnic groups[5], and they held the highest average amount of debt. Eighty-three percent

Figure 5. Female Graduates Borrow at Higher Rates and in Greater Amounts than Male Graduates

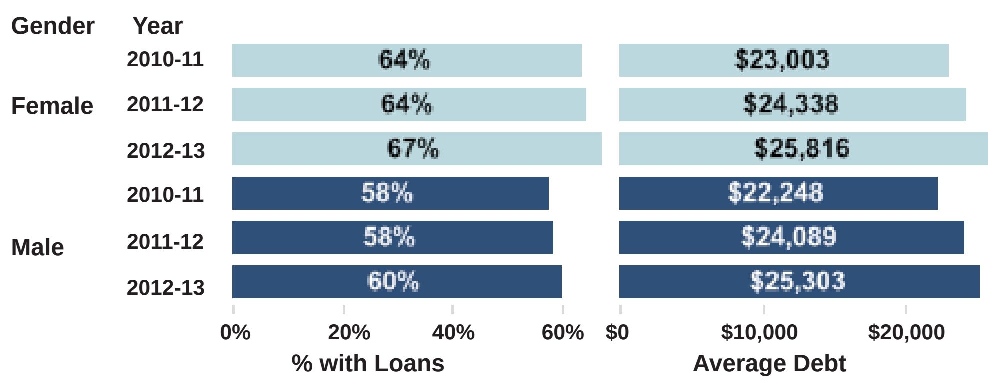
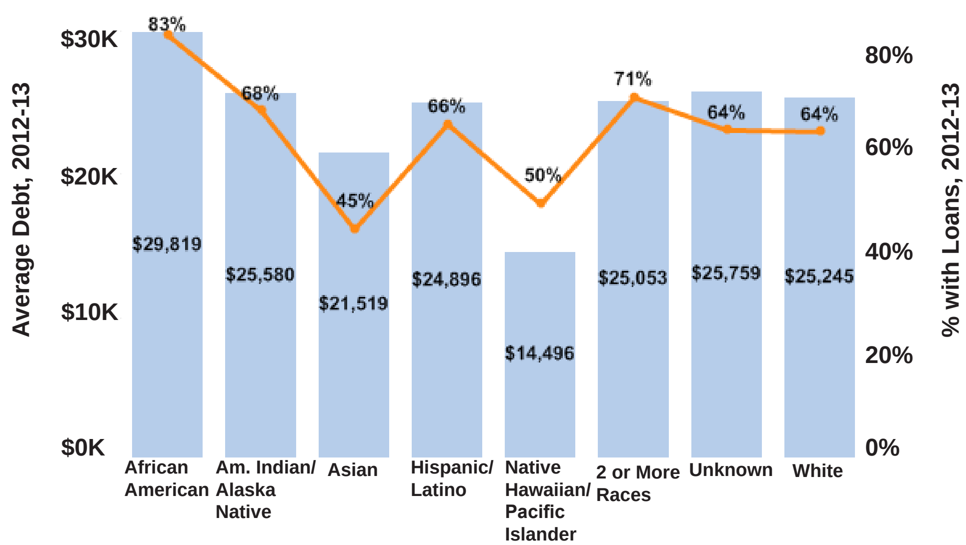


Figure 6. African Americans Borrow More and are More Likely to Borrow than Other Groups



of all African-American graduates of public universities in 2012-13 incurred loan debt. This borrowing rate was much higher than that of Asians (45 percent), Whites (64 percent), and Hispanic or Latino graduates (66 percent). Additionally, African Americans who graduated from four-year public universities with debt held, on average, $29,819 in student loans. This amount was over 28 percent higher than the average of $23,221 held by all other racial/ethnic groups in this population.

Age

Between AY 2010-11 and 2012-13, non-traditional students (those 25 years and older) on average exhibited higher borrowing rates and graduated with more loan debt than traditional-age graduates. In 2012-13, approximately three out of four non-traditional students completed college with loan debt, while approximately six out of ten traditional-age graduates did. Older graduates also borrowed on average $7,000 more than traditional students. The gap in the percentage of borrowers between non-traditional and traditional students showed a slight downward trend between 2010-11 and 2012-13. In 2010-11, the percentage of non-traditional students who borrowed was 28.6 percent higher than that of traditional students; this figure decreased slightly to 25.4 percent in 2012-13. However, the gap between the average debt amounts of non-traditional students and traditional students grew during the same time. While non-traditional students owed an average of 28.1 percent more than traditional students in 2010-11, the gap jumped to 47.6 percent in 2012-13. In sum, while the percentage of non-traditional students who borrowed for college did not dramatically rise, especially in comparison to traditional students, the amount of money they borrowed increased appreciably.

Figure 7. Non-traditional Graduates Borrow at Higher Rates and in Greater Amounts than Traditional Graduates

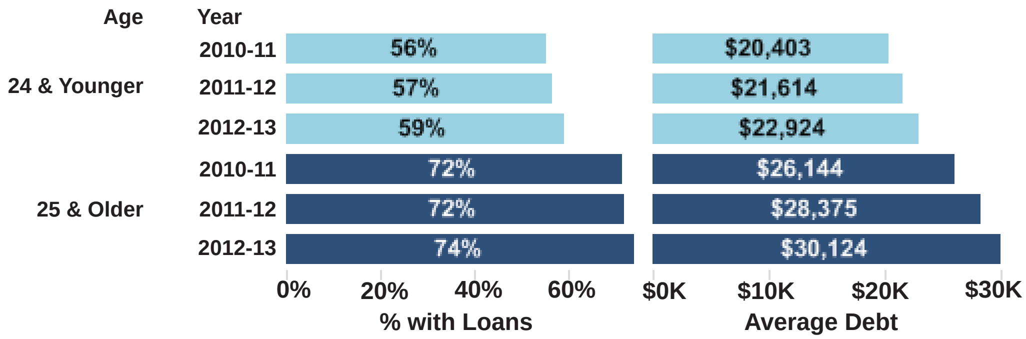
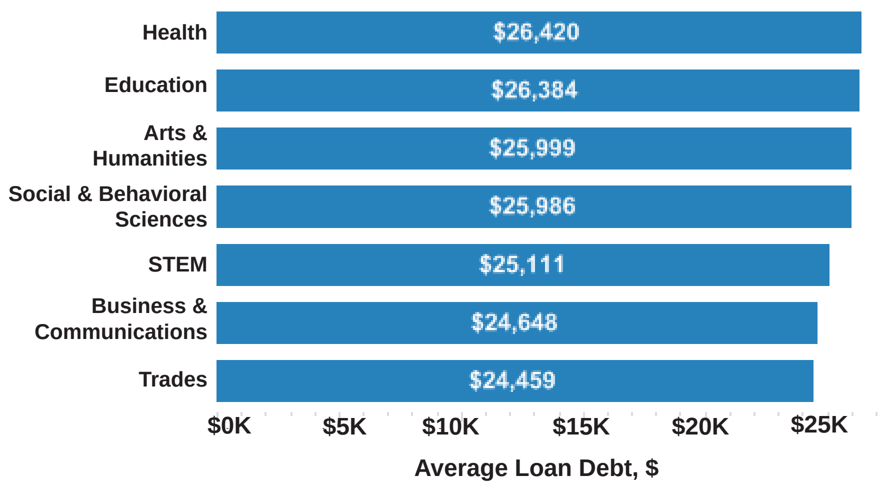


Figure 8. Average Loan Debt of Bachelor's Degree Graduates by Academic Area in AY 2012-13

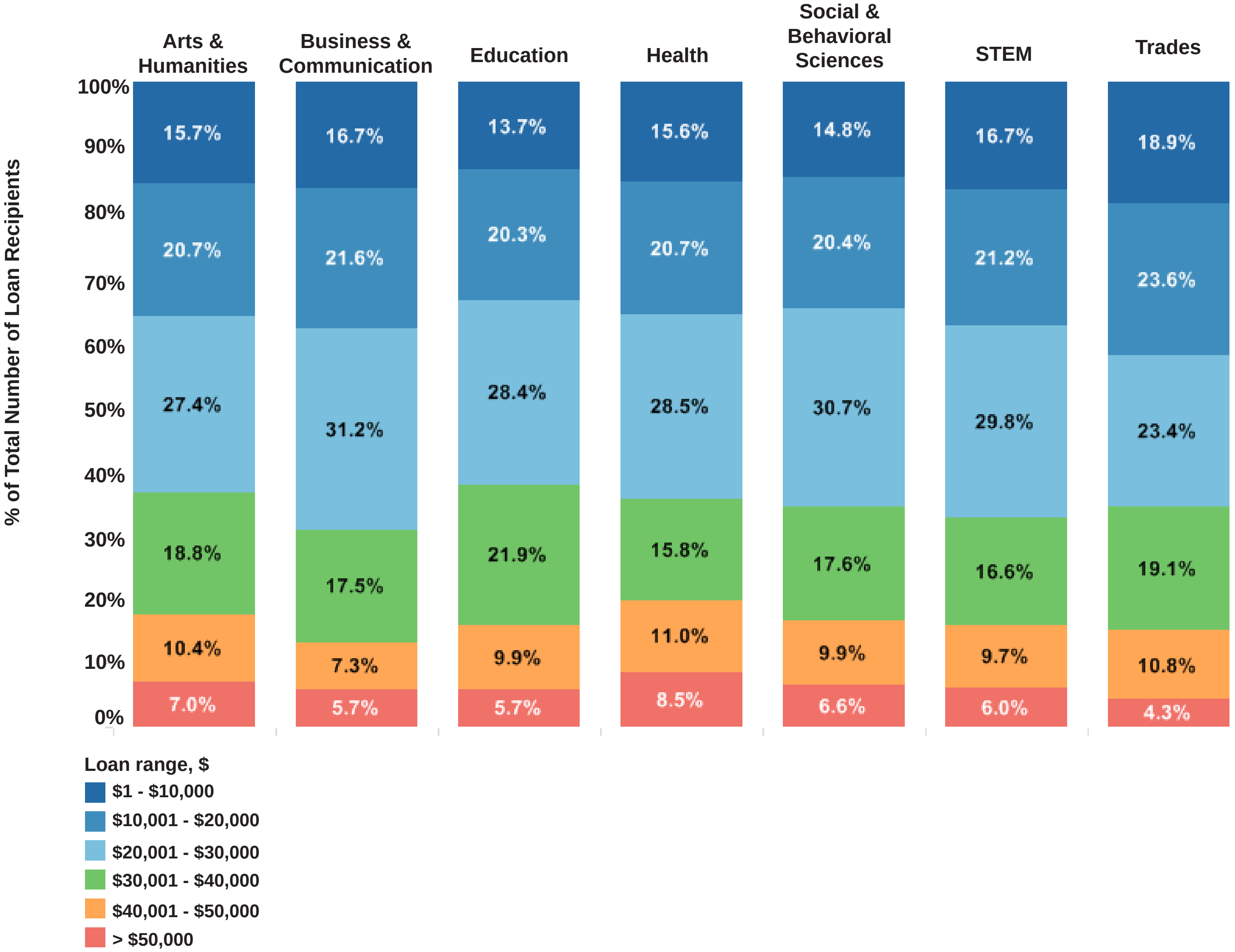


Academic Program

In 2012-13, the average debt of bachelor's degree recipients with loans varied across academic areas, ranging from the highest debt load of $26,420 in health to the lowest amount of $24,459 in applied trades (e.g., construction, transportation). Graduates with education majors had the second highest loan debt of $26,384 on average, followed by arts and humanities graduates ($25,999).

During the same year, levels of student loan balances of bachelor's degree recipients were relatively similar across seven major academic areas (arts & humanities, business & communication, education, health, social & behavioral sciences, STEM and trades). Across these areas, the percentage of loan-holding graduates with $10,000 or less in debt ranged from 18.9 percent in trades to 13.7 percent in education. The academic areas with the highest percentage of graduates holding loan debt of $50,000 or more was health (8.5 percent), while the academic area with the lowest percentage of graduates with loan debt in this range was trades (4.3 percent).

Figure 9. Bachelor's Degree Graduates with Loan Debt by Academic Area and Level of Balance in AY 2012-13



Part 2: Economic Return of College Majors

While higher education leads to higher earnings, the economic returns of a college degree vary considerably across undergraduate majors. Knowing which major to choose and its future earning potential is essential information when deciding on the amount of loans to take out for post-secondary education. This section looks at the extent and patterns of the income[6] variation by major, which may provide an estimate[7] of future earnings associated with broad academic areas of study for bachelor's degree graduates of Kentucky's public universities.

Income Variation by Area

The chart below provides information on median annual wages broken down by seven broad areas of study for three cohorts of wage earners: three, five, and ten years after college completion. The data point to great variation in earnings both across academic areas and across time after graduation. The median wages of the 2010 graduates employed in Kentucky in FY 2012-2013 ranged from a low of $19,597 in arts and humanities to a high of $43,848 in health. The greatest payoff was obtained by graduates of programs in health and education: the short-term economic returns for graduates three years after completion were $43,848 and $34,440, respectively. In the longer-term, the largest economic returns were reaped by graduates of health and STEM fields, as evidenced by wages for the 2003 cohort ($57,386 and $55,163, respectively). As expected, all earners exhibited growth in earnings across time, but the change in wages showed different patterns in different academic areas.

Figure 10. Median Annual Wages of Bachelor's Degree Graduates of KY Public Universities Employed in State in FY 2012-13, by Area of Study & Cohort

Wage Earner Cohorts

	2010 Graduates (3 Years Out)	2008 Graduates (5 Years Out)	2003 Graduates (10 Years Out)
Arts & Humanities	$19,597	$26,252	$37,982
Business & Comm.	$29,683	$35,458	$46,621
Education	$34,440	$38,805	$46,226
Health	$43,848	$47,509	$57,386
Social & Behavioral Sciences	$22,319	$27,395	$40,301
STEM	$31,176	$41,770	$55,163
Trades	$26,738	$29,953	$39,265
Overall	$27,887	$34,568	$45,470

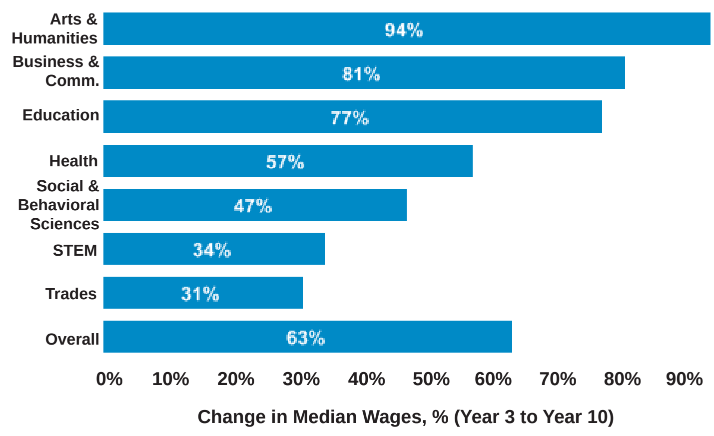
Median Annual Wages

$19,597 $57,386

Wage Growth

The rate of growth may be a good indicator of loan repayment potential and of servicing debt at the mid-point of a borrower's career. The chart below exhibits the rate of change in earnings from year three to year ten after college completion by academic area of study. While arts and humanities had the lowest earnings among the other fields of study, these academic programs exhibited the fastest rate of growth in earnings (94 percent) ten years after graduation. Conversely, the highest-paying fields for gradutes at the beginning of their careers—health and education—exhibited the lowest rates of change in earnings (31 percent and 34 percent, respectively).

Figure 11. Changes in Median Wages from Year 3 to Year 10 after Graduation for Bachelor's Degree Graduates Employed in Kentucky in FY 2012-13, by Area of Study



State Average and Variation by Academic Area

According to Figure 12, health graduates secured the highest wages five years post-graduation, when compared to the state average for baccalaureate graduates from Kentucky's public universities (44 percent higher than the state average).

Fields of study with above-average median wages also included STEM (120 percent), education (113 percent), and business and communications (105 percent). By contrast, the lowest-paying fields were arts and humanities (76 percent) and social and behavioral sciences (82 percent).

Variation by Sector

Economic returns of a college major vary considerably across sectors of higher education. Figure 13 reflects those payoff differentials in selected majors, including arts and humanities, education, health, and STEM. Generally, graduates of research universities started their careers with higher salaries (except in arts and humanities) and maintained their wage premium advantages in the long-run (ten years after college completion), as compared with their comprehensive university counterparts. Ten years after graduation, STEM fields proved the most remunerative for research university graduates (with median wages of $68,339), and healthcare was the most highly paid field for graduates of comprehensive universities (with median wages of $56,165). An earnings differential between graduates of research universities and comprehensives in STEM and education was approximately $10,000 in favor of the former ten years after completing college. The difference in earnings in health was less pronounced (approximately $4,000), while arts and humanities graduates' earnings ten years after college differed by only about $1,500 in favor of research universities.

Figure 12. Median Wages by Academic Area as a Percent of Overall Wages, 2008 Graduates (5 years out)

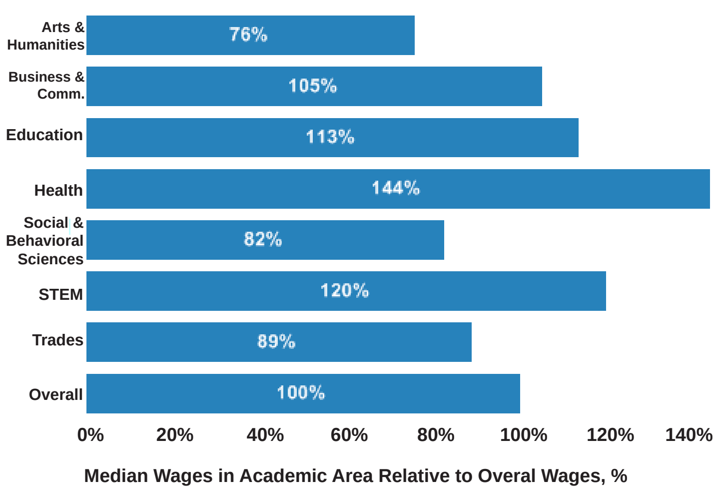
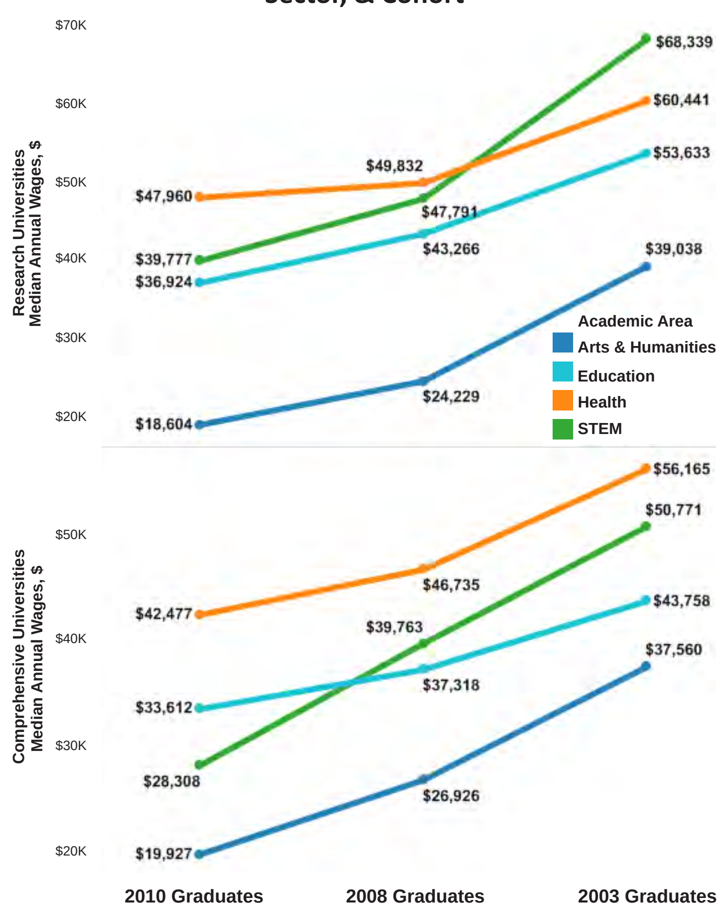


Figure 13. Median Wages of Bachelor's Degree Graduates Employed in KY in FY 2012-13 by Academic Area, Sector, & Cohort



Part 3: Affordable Debt Levels & Loan Repayment

What Levels of Student Debt are Excessive?

The question of what levels of loan debt are reasonable and affordable for college graduates is central for policy makers, borrowers, and financial aid administrators because burdensome levels of debt are fraught with a variety of negative consequences for the borrower. If total student debt at graduation relative to future earnings is too high, students may delay important educational, career, and life events, including buying a house, pursuing graduate education, getting married and having children, and saving for retirement (Hershbein & Hollenbeck, 2014; Ratcliffe & McKernan, 2013).

Financial aid researchers and practitioners developed several methods to ascertain the burden of loan repayment for college graduates with student loan debt. Debt-to-income analysis, a common measure of repayment risk in the banking and finance area, recently emerged as an important methodology for understanding a borrower's ability to repay loans in the area of college affordability in higher education. For example, the Department of Education proposed the Gainful Employment rules to assess the performance of for-profit higher education institutions. Calculating the repayment burden of student loan borrowers through debt-to-earnings ratios is a critical component of these rules. Broadly defined, a debt-to-income ratio is the ratio of total debt to the borrower's income. Borrowers' debt-to-income ratios will be generally higher when they graduate from college, since their starting salaries are typically at the entry level. Over time, debt-to-income ratios should be lower, as individuals begin to earn more money and as their loan debts diminish through payments.

According to Kantrowitz (n.d.), a financial aid expert and publisher of EDVISORS, a quick and rough method is to compare annual starting salaries of college graduates with their average student loan debt loads at graduation. If the debt-to-income ratio is less than 1, the borrower should be able to afford to repay the debt. This ratio under one corresponds to monthly loan payments that are in the range of 10 percent to 15 percent of the borrower's gross monthly earnings, a range considered affordable by many analysts servicing the debt. Some policy makers set fairly stringent targets for this metric. For example, Texas' new strategic agenda[8] for postsecondary education will have a goal of controlling college graduates' loan debt, which should not exceed 60 percent of first-year wages. Another method, often referred to as a debt-service-to-income ratio, is to look at monthly loan payments in relation to a percentage of monthly income dedicated to paying off the loans. A debt-service-to-income ratio is the ratio of the normal monthly payments on the borrower's loans to the borrower's gross monthly income.

For many years, researchers and analysts have debated the question of what level of debt should be considered affordable and reasonable. Perhaps the most in-depth discussion of the subject is offered by Baum and Schwartz (2006) who conducted an exhaustive literature review of various methodologies and defined a range of thresholds for manageable debt levels. They concluded that individuals with median wages should devote about 10 percent of their pre-tax earnings to student loan repayment, and "the payment-to-income ratio should never exceed 18 to 20 percent" (p.12). More recently, Woo and Soldner (2013), National Center on Education Statistics researchers, conducted a study of loan repayment and proposed that, to be affordable, monthly payments should represent no more than 12 percent of the borrowers' monthly gross income. In sum, for the debt to be manageable, the share of earnings devoted to student loan payments should be in the range of 10 to 12 percent of the earners' monthly income.

Debt-To-Income Analysis

Earnings data presented in conjunction with debt repayment estimates give a good idea of the potential risk of excessive borrowing and the ability to repay loan debt after college. Annual or monthly debt and income levels by academic area allow for direct comparisons among various majors and with the typical amounts of money borrowed or earned.

Figure 14 details information on median loan debt loads[9] and annual earnings, as well as debt-to-income ratios broken down by academic area. The median balance carried by borrowers who graduated from Kentucky's public universities between 2010 and 2013 was $23,665, compared to the median annual earnings of $27,887 for the 2010 graduating class[10] employed in Kentucky in FY 2012-13. This translates to the ratio of 0.85, or 85 percent of average yearly earnings for early career workers. While most academic areas have ratios under one, arts and humanities and social and behavioral sciences have values greater than one, indicating a debt-to-earnings ratio higher than recommended by financial aid researchers and practitioners. While both constituent parts of the ratio—debt loads and earnings—have variations, the major source of variance (and therefore influence on the ratio measure) comes from the earnings distribution. Specifically, whereas median loans vary between $22,546 and $24,816 (only by over $2,000), the difference between the lowest amount of earnings in arts and humanities ($19,597) and the highest in health ($43,848) is approximately $24,000.

Monthly wages and monthly loan payments[11] in Figure 15 show similar patterns. Overall, with monthly loan payments of $272 and monthly earnings of $2,324, the debt-service-to-income ratio is 11.7 percent, slightly under the loan affordability benchmark of 12 percent. Arts and humanities and social and behavioral sciences have high debt service ratios of 16.8 percent and 14.9 percent, indicating that individuals may be unduly burdened with loan debt. The least financial stress will be borne by health graduates, with only 7 percent of their monthly income dedicated to repaying education loan debt, followed by STEM (10 percent) and education (10 percent) majors. The other graduates whose debt-service-to-income ratios are under the 12 percent benchmark should have reasonable levels of debt.

For a more complete picture, debt burdens (the ability to repay debt) should be considered both in the short- and long-term of a career, as the earnings trajectories vary depending on career life-cycles and earners' majors (Dynarski & Kriesman, 2013; Hershbein, Harris, & Kearney, 2014). Specifically, high levels of debt may impose undue financial strain on borrowers' monthly payments early in their careers, but they can be manageable in the long run. Given that payments are fixed and do not change over time under the standard ten-year repayment plan loan, debt-to-earnings ratios can be computed for wages at the mid-point of graduates' careers to gauge their loan repayment capacity at a later stage.

Figure 14. Median Loan Debt, Median Wages, and Debt-to-Income Ratios by Academic Area for Recent Graduates of KY Public Universities

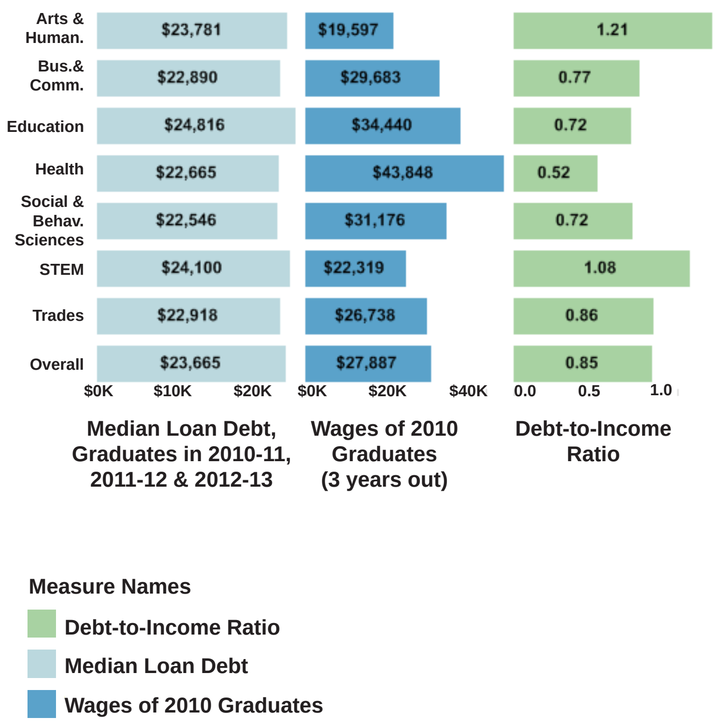


Figure 15. Monlthly Wages, Monthly Loan Payments, and Debt-Service-to-Income Ratios by Academic Area for Recent Graduates of KY Public Universities

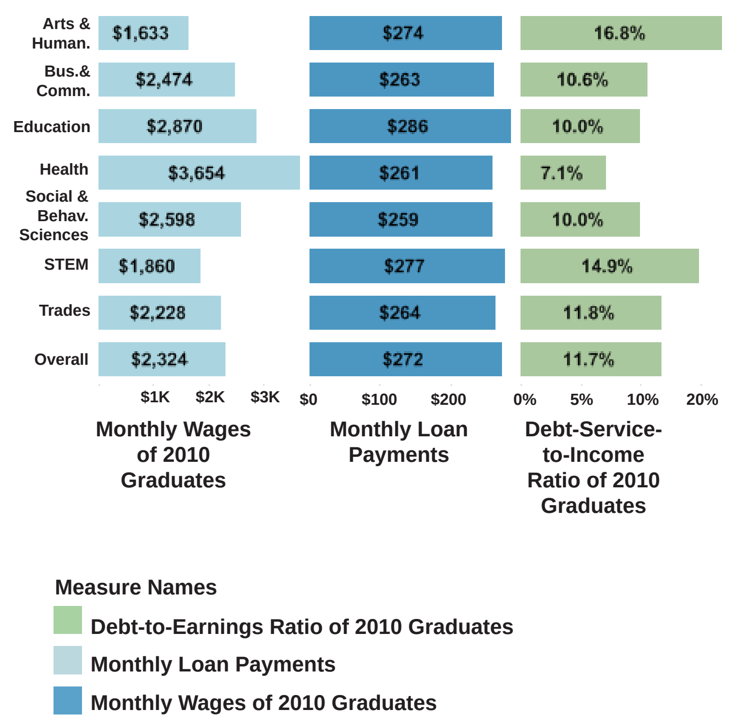
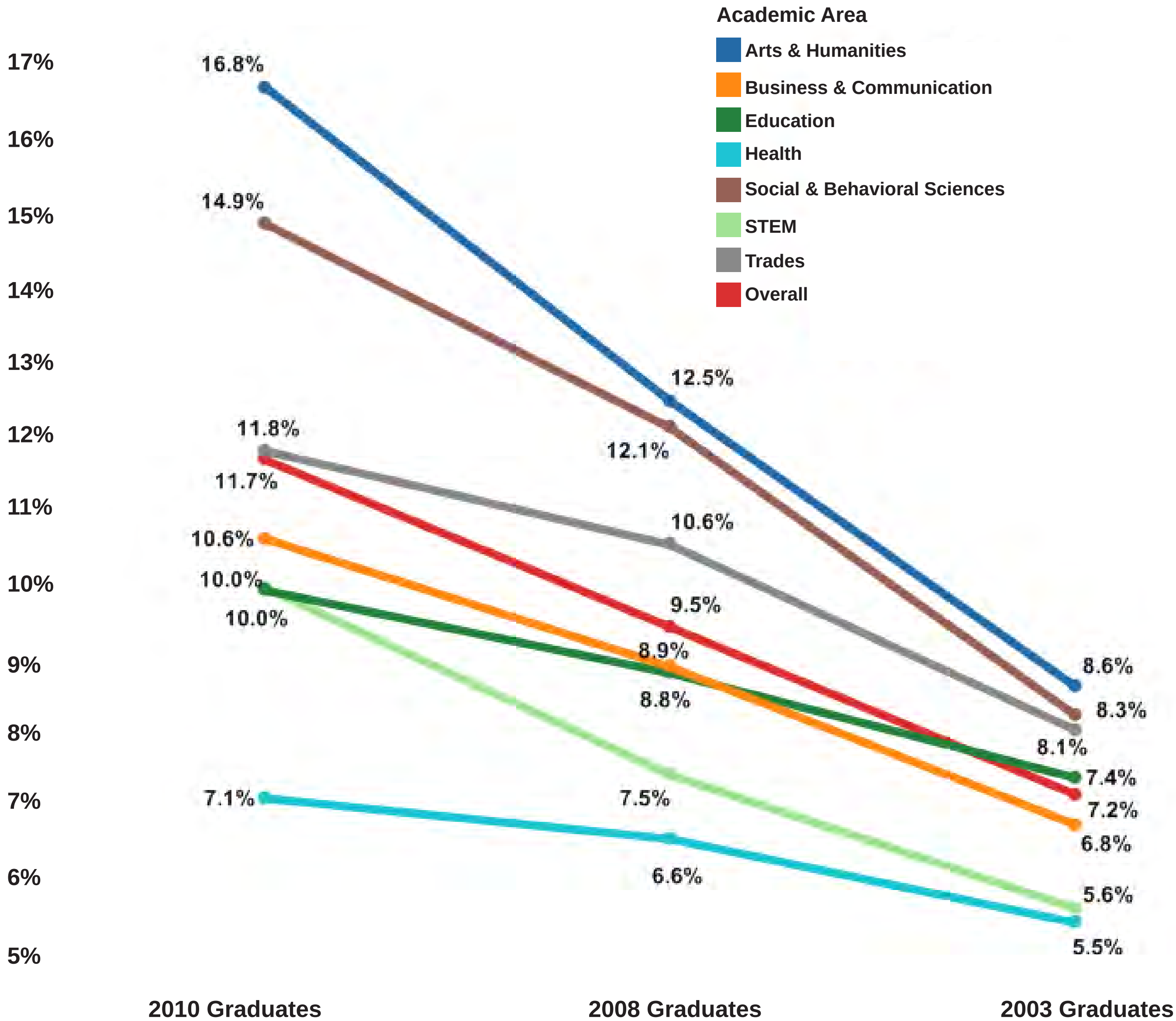


Figure 16 displays debt-service-to-income ratios for graduates in seven academic areas three, five, and ten years after college completion. As the data show, shares of income needed to repay loans fall rapidly for all majors during the period of time between three and ten years after college, with the steepest drop in liberal arts and humanities and social and behavioral sciences. Specifically, liberal arts and humanities majors reduce their debt burden almost by half, from 16.8 percent to 8.6 percent. Overall, for a graduate with median earnings and debt load, 11.7 percent of early-career earnings are necessary to allocate toward loan payments, but only 7.2 percent of income is required for loan repayment in the tenth year after college completion. The wide variation, from a low of 7.1 percent to a high of 16.8 percent (a 9.7 percentage-point difference) evidenced by the most recent 2010 graduates, decreases to a small difference of 3.1 percentage points between the low and high values for the 2003 graduation cohort.

Figure 16. Debt Service-to-Income Ratios by Academic Area for Graduates 3, 5 & 10 Years After College Completion at Kentucky Public Universities



Conclusions & Policy Implications

Higher education is an investment with high economic and social returns in the form of higher earnings, status, and the potential for upward social mobility. This report shows that the majority of public university graduates with student loan debt in Kentucky have earnings sufficient to allow them to repay their debt during a ten-year time frame. This finding underscores the fact that higher education in Kentucky remains an affordable endeavor.

Overall, graduates with loans should be able to fulfill their obligations to service their loan debt relative to their incomes both in the early years and at the mid-point of their careers. However, the potential payoff of higher education may be uncertain for the large share of students who enter college but do not complete it. This is particularly problematic if these students incurred substantial loan debt.

This report also shows that income growth patterns vary by major, and, consequently, the high payoffs of a college degree do not necessarily manifest themselves for some graduates in the initial stage of their career[12]. On average, STEM and health majors devote smaller percentages of their earnings to student loan debt, while arts and humanities and social and behavioral sciences graduates are more constrained by student loan debt initially. However, their debt levels become more manageable over time, as these majors experience the largest income growth ten years after graduation.

The lower earnings in arts and humanities may be explained by high rates of underemployment, or work in jobs that do not require a bachelor's degree, characteristic of these fields. For instance, a recent study by Hershbein and Hollenbeck (2014) documented lower rates of full-time, full-year employment of recent college graduates of arts programs by approximately 10 to 15 percentage points, as compared to the average in all fields.

Additionally, research by Abel, Deitz, and Su (2014) noted that the problem of underemployment is more common for recent college graduates with majors in liberal arts and social sciences, as compared to their counterparts working in fields that require technical training[14] (e.g., engineering, math, and computer science). The authors contend that underemployment is common for new, young entrants to the job market, arising from the necessity of young professionals to adjust to the labor market conditions during a transitional period.

Investigating potential loan debt burdens and earnings, as well the estimated risk of future financial strains after college, is a necessary tactic all prospective students should employ when contemplating entry into higher education, a crucial, life-changing event. The initial income dynamics for liberal arts and humanities majors make them a target for various federal, state, and institutional fianancial aid, loan, and career counseling intervention programs. Because most of the variation and influence on the repayment capability of graduates come from the earnings component of the debt-to-income measures, intervention programs also should be aimed at helping graduates find employment in their chosen fields.

To this end, loan counseling should become a widespread practice at colleges and universities. A recent literature review (TG, 2015) concluded that the timing of delivery is a crucial variable to consider in loan counseling. On the front end, universities should offer financial aid and loan counseling; upon exit, career counselors need to play a crucial role in helping students transition into their careers in the marketplace[13].

To help students and graduates of colleges and universities meet their loan payment obligations, the Federal government offers income-contingent repayment plans. These programs presuppose the borrower's payments as a function of their current income levels. For example, the income-based repayment plan (IBR) caps borrowers' monthly payments at 15 percent of their disposable (discretionary) income and provides for loan forgiveness for the remaining balance after 25 years of qualifying payments. Another plan, which is more generous than IBR, is known as Pay As You Earn (PAYE). Borrowers qualify for this plan if their monthly payments are at or over 10 percent of their discretionary income. Any remaining loan balance may be forgiven after 20 years of qualifying payments.

While income-contingent plans are increasing in popularity, the most prevalent option currently is the ten-year standard repayment plan[15]. Recently there have been vibrant research and policy discussions about the current loan repayment system. The success of income-contingent repayment plans prompted some research and policy organizations[16] to call for making these financial arrangements default options for the entire loan repayment system.

HCM Strategists (2013) proposed that current federal loans be consolidated into a single income-based repayment program with borrowing limits to simplify the system and help borrowers more clearly understand the loan repayment conditions. Moreover, Dynarski and Kriesman (2013) highlighted the mismatch in timing between earnings and debt payments, concluding that the current system is characterized by a “repayment crisis” rather than a “debt crisis.” They contend that, given that loans need to be repaid during the first ten years after college completion when borrowers have the lowest earnings and the least capacity to devote the necessary share of income to loan payments, the standard ten-year repayment plan may not be a good policy[17] to promote the affordability of loan debt.

Kentucky, like many other states, currently is facing a dilemma as to how to help Kentuckians take advantage of student loans and the benefits of higher education while avoiding burdensome levels of loan debt. Data from this study suggest that most college graduates with loan debt are in a position to manage their debt loads relative to their earnings. Given that it takes time for young professionals to establish themselves in their careers and benefit from higher earnings, graduates with low-paying majors in the early years of their career may opt to enroll in income-contingent repayment plans. At the same time, current policy initiatives to improve the federal loan system are steps in the right direction that are likely to mitigate the problem of high loan debt.

Notes

1. Carnevale, A. P., Cheah, B., and Hanson, A. R. (2015). “The Economic Value of College Majors.” The Center on Education and the Workforce, Georgetown University.
2. This classification is modeled after studies conducted by SHEEO, NCHEMS, and Complete College America. See Technical Details for a description of the seven areas of study and CIP codes that constitute each academic area. For additional detail, see also the following publication: Zaback, K., Carlson, A., & Crellin, M. (2012). “The Economic Benefit of Postsecondary Degrees: A State and National Level Analysis.” State Higher Education Executive Officers (SHEEO). Retrieved from: http://www.sheeo.org/resources/publications/economic-benefit-postsecondary-degrees
3. According to a recent study from the Institute of College Access and Success (TICAS) that examined student debt for the class of 2012. Retrieved from http://www.csmonitor.com/Business/2014/0120/Student-loans-a-worry-10-states-with-the-lowest-student-debt/Kentucky
4. The loans include Federal subsidized and unsubsidized Stafford loans, Perkins loans, Federal health professions loans, institutional loans, and other loans.
5. This pattern also holds true when Kentucky State University is removed from the calculations.
6. Earnings data are provided by the Kentucky Center on Education and Workforce Statistics. KCEWS calculates average wages for graduates who worked any number of hours during any of the four quarters in Fiscal Year 2012-13. As a result, the methodology produces conservative estimates.
7. These income data broken down by broad major categories are estimates, or rough approximations of potential earnings. The actual wages will depend on a variety of factors, including specific occupations, conditions of local economies, geographic location, and various personal, cognitive and psycho-social characteristics of employees. It is important to differentiate between occupations and majors, as job differences do not necessarily parallel differences in academic programs. Graduates of a particular major find jobs in a variety of occupations, and employees in a great number of occupations come from varied educational backgrounds.
8. Texas’ new strategic agenda is not finalized yet. See the draft document at: http://www.collegeforalltexans.com/images/TX_HESP_Draft_APR_2015v4%20w_RP%20Memo.pdf
9. These median loan debt balances by academic area are approximately $2,000 lower than the corresponding mean loan debt amounts for the same academic areas. The difference is due to different calculations used to produce median and mean values.
10. Starting earnings for early career earners are represented by wages three years after completing college. This is secondary data taken from the Postsecondary Education Feedback Report prepared by KCEWS.
11. Monthly loan payments are based on the standard 10-year repayment plan for the unsubsidized Stafford loan program at 6.8 percent interest rate.
12. Data from Texas and Minnesota also show low annual median earnings for liberal arts and humanities majors in the early years of their careers. See, for instance, Schneider’s (May 2014) study of student loan debt and gainful employment based on Texas data and the Minnesota Statewide Longitudinal Education Data System (SLEDS) available at: https://apps.deed.state.mn.us/lmi/etd/Results.aspx
13. Unfortunately, the job market greatly varies across the state and over time, and often past performance and outcomes cannot predict the post-collegiate success in employment of future graduates in many local economies.
14. The authors found that, during the period 2009 through 2011, 52 percent of recent college graduates (age 22 to 27) from programs in liberal arts and 48 percent of the corresponding bachelor’s degree completers in social sciences were employed in jobs where a bachelor’s degree was not required. In contrast, underemployment rates in engineering, education, and health were 20 percent, 22 percent, and 22 percent, respectively.
15. Hershbein, Harris, and Kearney (2014) indicate that, as of the third quater of 2014, 61 percent of borrowers with Federal Direct Loans were enrolled in the ten-year standard repayment plan, based on the analysis of Department of Education data.
16. For instance, Huelsman and Cunningham (2013) from the Institute for Higher Education Policy proposed this initiative.
17. The researchers proposed a new income-based system, Loans for Educational Opportunities (LEO), in place of the current federal system. Under LEO, payments ranging from three percent to ten percent of earnings will be made through payroll deduction by employers and will be spread out over 25 years.

Technical Details

Area of Study or Major

The following areas of study (academic programs) are constructed using the two-digit Classification of Instruction Programs (CIP) codes defined by the National Center for Education Statistics. With 57 individual 2-digit CIP codes, the areas of study include:

- Arts and Humanities: area, ethnic, cultural, and gender studies (5); foreign languages, literatures, and linguistics (16); English language, and literature/letters (23); liberal arts and sciences, general studies and humanities (24); multi/interdisciplinary studies (30); philosophy and religious studies (38); theology and religious vocations (39); visual and performing arts (50); and history (54).
- Business and Communication: communication, journalism, and related programs (9); communications technologies/technicians and support service (10); business, management, marketing, and related support services (52).
- Education: education (13).
- Health: health professions and related clinical sciences (51).
- Social and Behavioral Sciences and Human Services: family and consumer sciences/human sciences (19); legal professions (22); library science (25); parks, recreation, leisure, and fitness studies (31); psychology (42); public administration and social service professions (44); and social sciences (45).
- Science, Technology, Engineering, and Math (STEM): agriculture, agriculture operations, and related services (01); natural resources and conservation (03); architecture and related services (04); computer and information sciences and support services (11); engineering (14); engineering technologies/technicians (15); biological and biomedical sciences (26); mathematics and statistics (27); military technologies (28); physical sciences (40); and science technologies/technicians (41).
- Trades: personal and culinary services (12); security and protective services (43); construction trades (46); mechanic and repair technologies/technicians (47); precision production (48); and transportation and materials moving (49).

Annual Median Wages

- The sum of yearly earnings for workers from all four quarters in FY 2012-13, which includes the third and fourth calendar quarters of 2012 and the first and second calendar quarters of 2013.
- The annual median wages of the 2003, 2008, and 2010 graduates of public universities employed in Kentucky in FY 2012-13.
- Median earnings mean that half earn more than the median, or the 50th percentile value, and the other half earn less.

Average and Median Loan Debt

The mean and median values of loan debt for graduates with loan debt at graduation. Debt amounts are calculated for all students, including first-time and transfer, who graduated with loan debt.

Public Universities

The universities include Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, the University of Kentucky, the University of Louisville, and Western Kentucky University.

Standard Loan Repayment Plan

A ten-year repayment plan for the unsubsidized Stafford loan program at 6.8 percent interest rate.

Student Loans

The loans include Federal subsidized and unsubsidized Stafford loans, Perkins loans, Federal health professions loans, institutional loans, and other loans.

References

Abel, J. R., Deitz, R., and Su, Y. (2014). "Are Recent College Graduates Finding Good Jobs?" Federal Reserve Bank of New York. In *Current Issues in Economics and Finance*, Vol. 20 (1). Retrieved from: http://www.newyorkfed.org/research/current_issues/ ci20-1.html

Akers, B. and Chingos, M. M. (2014). "Is a Student Loan Crisis on the Horizon?" Brown Center on Education Policy at Brookings. Retrieved from: http://www.brookings.edu/~/media/research/files/reports/2014/06/24-student-loan-crisis-akers-chingos/is-a-student-loan-crisis-on-the-horizon.pdf

Baum, S. and Schwartz, S. (2006). *How Much Debt is Too Much?* New York: The College Board.

Carnevale, A. P., Cheah, B., and Hanson, A. R. (2015). "The Economic Value of College Majors." The Center on Education and the Workforce, Georgetown University.

Dynarski, S. and Kriesman, D. (2013). "Loans for Educational Opportunity: Making Borrowing Work for Today's Students." Discussion paper, 2013-05. The Hamilton Project. Retrieved from: http://www.hamiltonproject.org/files/downloads_and_links/THP_DynarskiDiscPaper_Final.pdf

HCM Strategists (2013). "Doing Better for More Students: Putting Student Outcomes at the Center of Federal Financial Aid." Retrieved from: http://hcmstrategists.com/wp-content/themes/hcmstrategists/docs/Technical_report_fnl.pdf

Hershbein, B. and Hollenbeck, K. (2014). "College Costs: Students Can't Afford Not to Know." W.E. Upjohn Institute for Employment Research.

Hershbein, B., Harris, B., and Kearney, M. (2014). "Major Decisions: Graduates' Earnings Growth and Debt Repayment." The Hamilton Project. Retrieved from: http://hamiltonproject.org/papers/major_decisions_graduates_earnings_growth_debt_repayment/

Huelsman, M. and Cunningham, A. F. (2013). *Making Sense of the System: Financial Aid Reform for the 21st Century Student.* Washington, D.C.: Institute for Higher Education Policy.

Kantrowitz (n.d.). "Reasonable Debt." Retrieved from: https://www.edvisors.com/plan-for-college/benefits-of-college/reasonable-debt/

Klepfer, K., Fernandez, C., Fletcher, C., and Webster, J. (2015). "Informed or Overwhelmed? A Legislative History of Student Loan Counseling with a Literature Review on the Efficacy of Loan Counseling." TG Research and Analysis Services.

Ratcliffe, C. and McKernan, S.-M. (2013). *Forever in Your Debt: Who has Student Loan Debt, and Who's Worried?* The Urban Institute.

Schneider, M. (2014). "Are Graduates from Public Universities Gainfully Employed? Analyzing Student Loan Debt and Gainful Employment." American Enterprise Institute. Retrieved from: https://www.aei.org/publication/are-graduates-from-public-universities-gainfully-employed-analyzing-student-loan-debt-and-gainful-employment/

Woo, J. H. and Soldner, M. (2013). "Degrees of Debt. Student Borrowing and Loan Repayment of Bachelor's Degree Recipients One Year after Graduating: 1994, 2001, and 2009." Statistics in Brief Series. National Center for Education Statistics, U.S. Department of Education.

Zaback, K., Carlson, A., & Crellin, M. (2012). "The Economic Benefit of Postsecondary Degrees: A State and National Level Analysis." A report from the State Higher Education Executive Officers (SHEEO). Retrieved from: http://www.sheeo.org/resources/publications/economic-benefit-postsecondary-degrees

The Council on Postsecondary Education does not discriminate on the basis of race, color, national origin, sex, religion, age, or disability in employment or the provision of services, and provides, upon request, reasonable accommodation, including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities.

Kentucky Council on Postsecondary Education
1024 Capital Center Drive, Suite 320
Frankfort KY 40601
Ph: (502) 573-1555
Fax: (502) 573-1535
http://cpe.ky.gov

Printed with state funds.