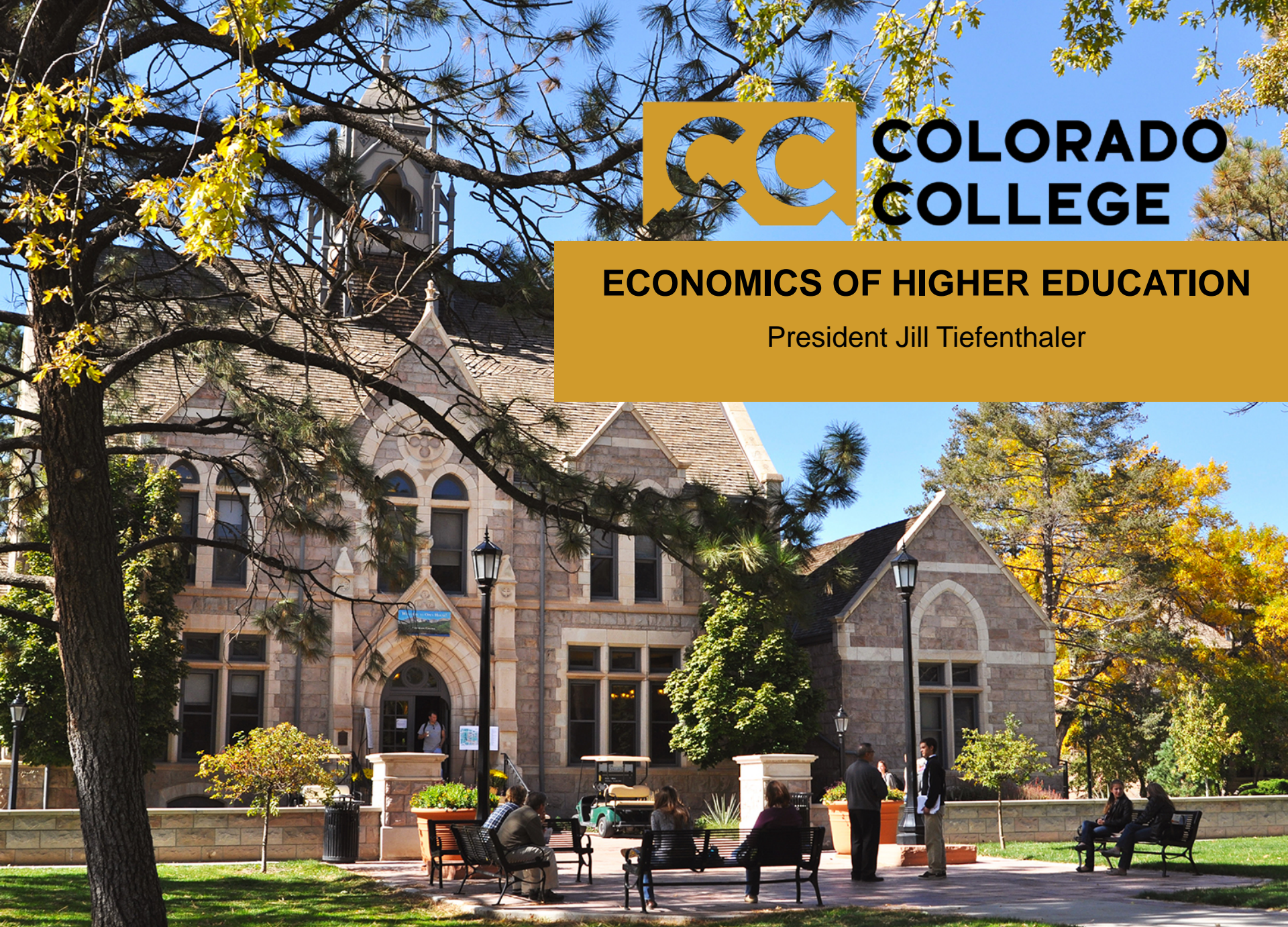




**COLORADO
COLLEGE**

ECONOMICS OF HIGHER EDUCATION

President Jill Tiefenthaler





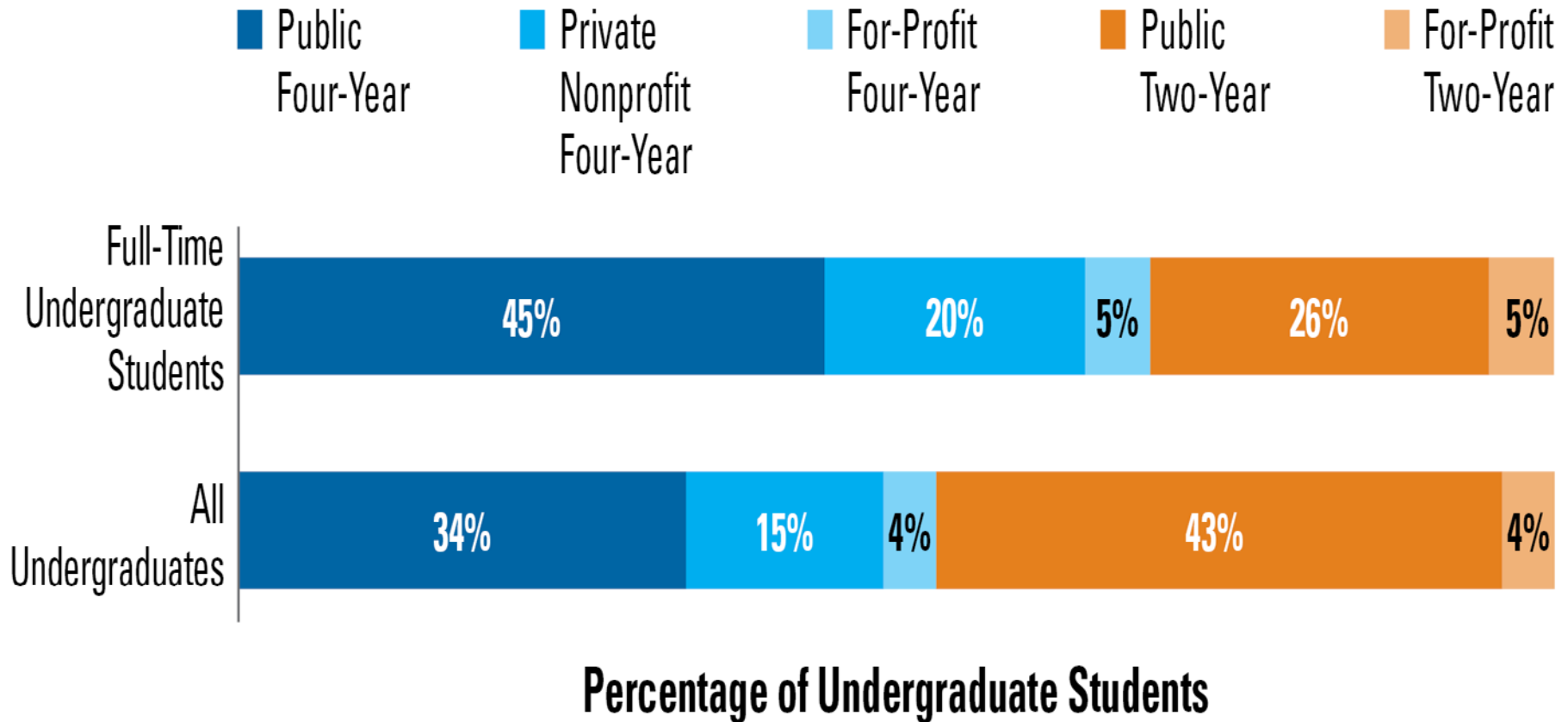
OUTLINE

- Overview of industry
- Overview of tuition increases
- Economics of higher education
- The Price vs. Quality Trade-off
- Benefits of higher education
- Costs of higher education

OVERVIEW OF THE INDUSTRY

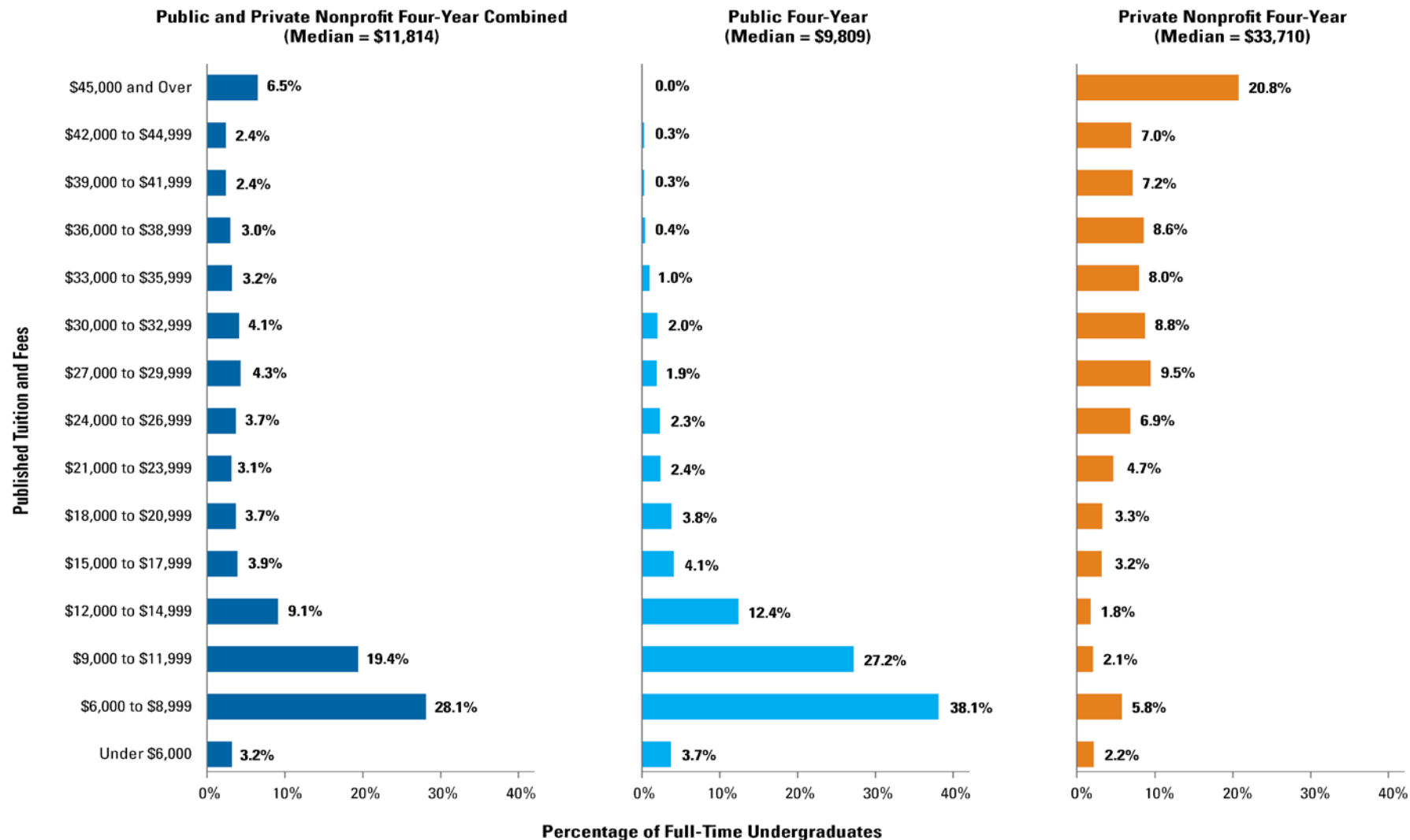
- 21 million students enrolled
- 3.4 million employees
- 4,314 institutions
- 40% of institutions are public; educate 77% of undergraduates
- 38% of institutions are non-profit private; educate only 15% of all undergraduates
- For-profit privates educate 8% percentage of students

DISTRIBUTION OF FULL-TIME UNDERGRADUATE ENROLLMENT BY SECTOR, FALL 2013



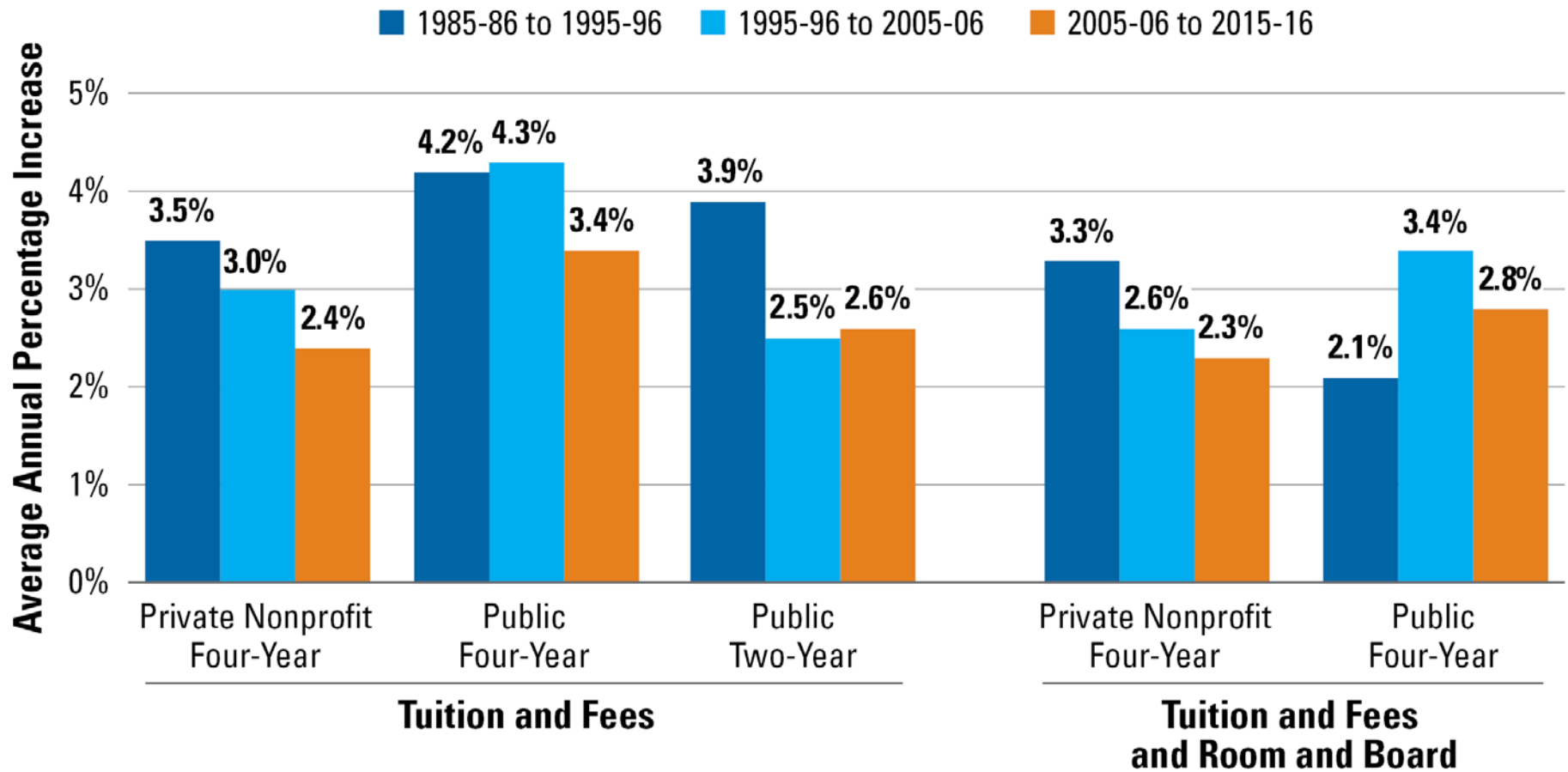
Source: The College Board, *Trends in College Pricing 2015*, Figure 25

DISTRIBUTION OF FULL-TIME UNDERGRADUATES AT FOUR-YEAR INSTITUTIONS BY PUBLISHED TUITION AND FEES, 2015-2016



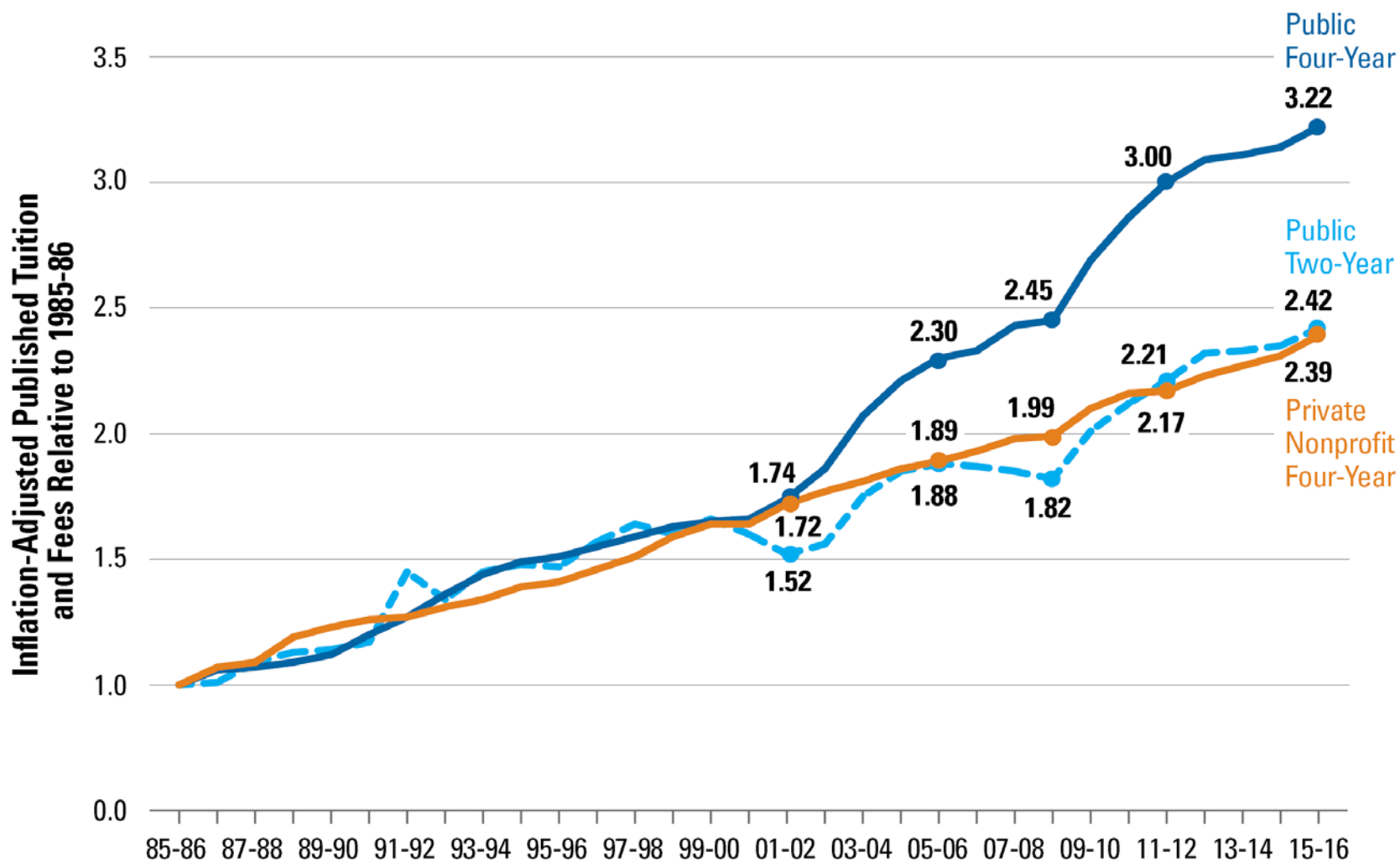
Source: The College Board, *Trends in College Pricing 2015*, Figure 3

AVERAGE ANNUAL PERCENTAGE INCREASE BEYOND INFLATION, BY DECADE 1985-86 TO 2015-16



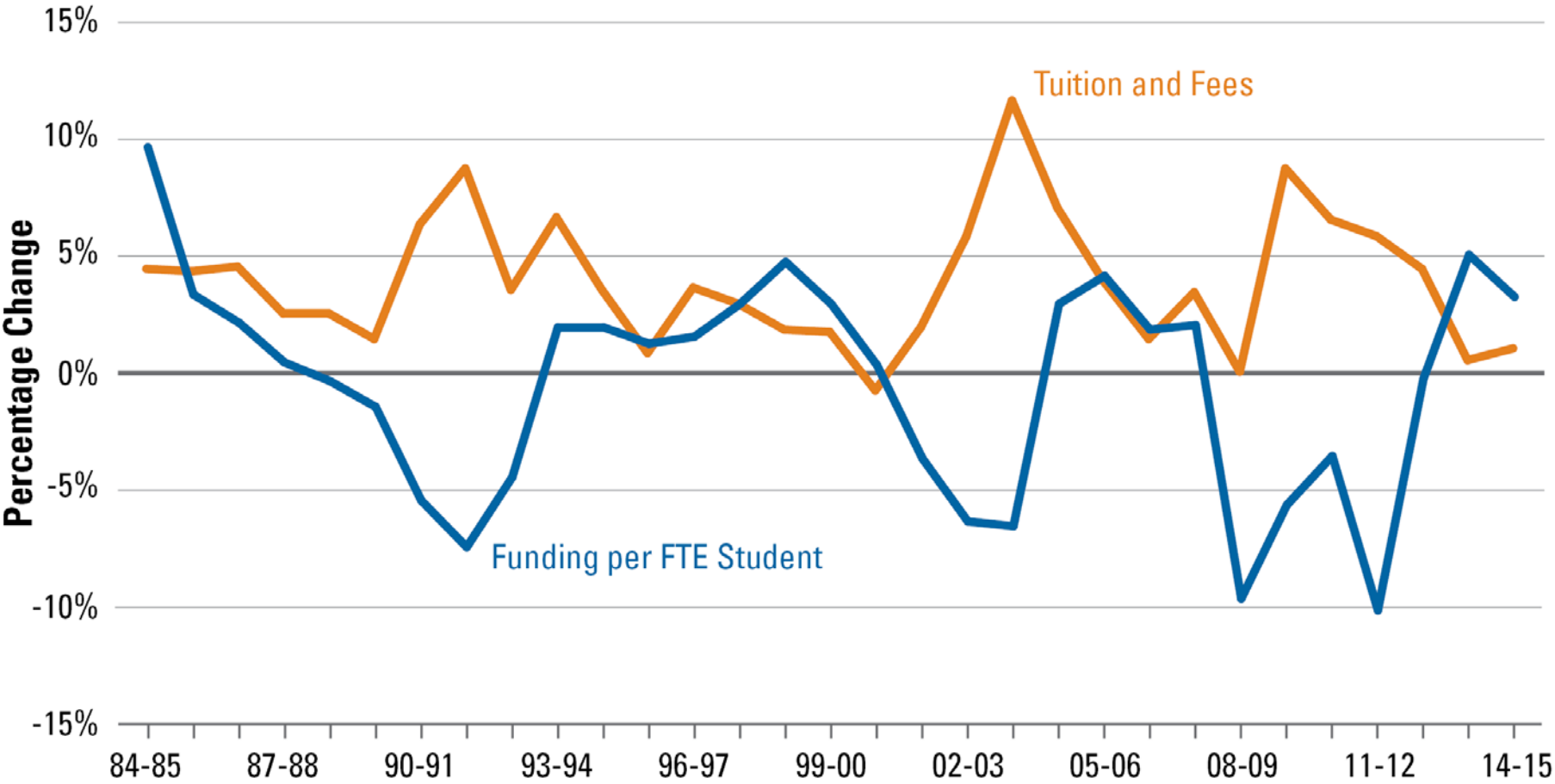
Source: The College Board, *Trends in College Pricing 2015*, Figure 5

INFLATION-ADJUSTED PUBLISHED TUITION AND FEES, 1985-86 TO 2015-16



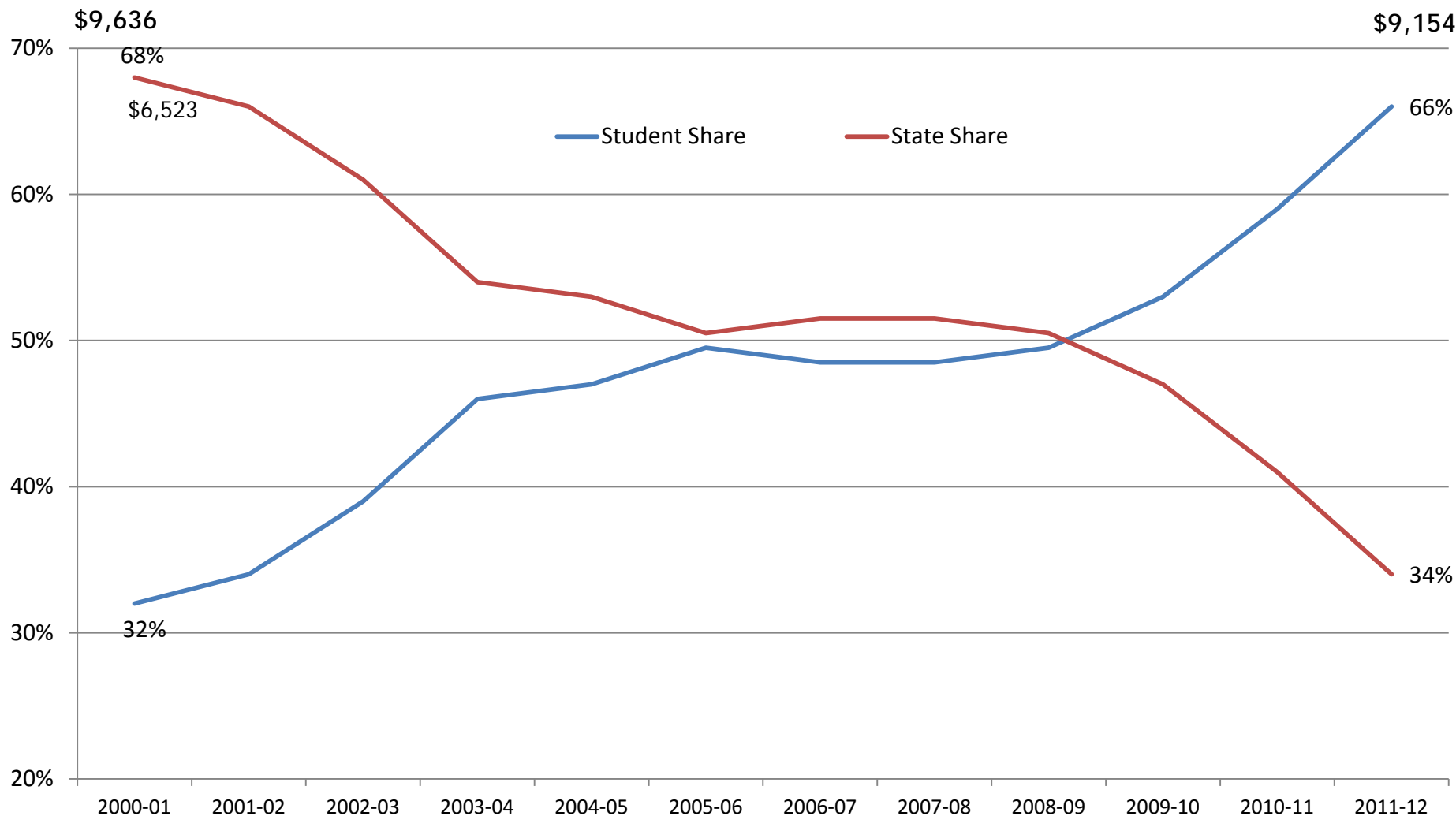
Source: The College Board, *Trends in College Pricing 2015*, Figure 6

ANNUAL PERCENTAGE CHANGE IN STATE APPROPRIATIONS
PER FTE AND TUITION AT PUBLIC FOUR-YEAR INSTITUTIONS,
INFLATION ADJUSTED, 1984-85 TO 2014-15



Source: The College Board, *Trends in College Pricing 2015*, Figure 16A

STATE SHARE AND RESIDENT STUDENT'S SHARE OF COLLEGE COST AT COLORADO PUBLICS, 2000-2012

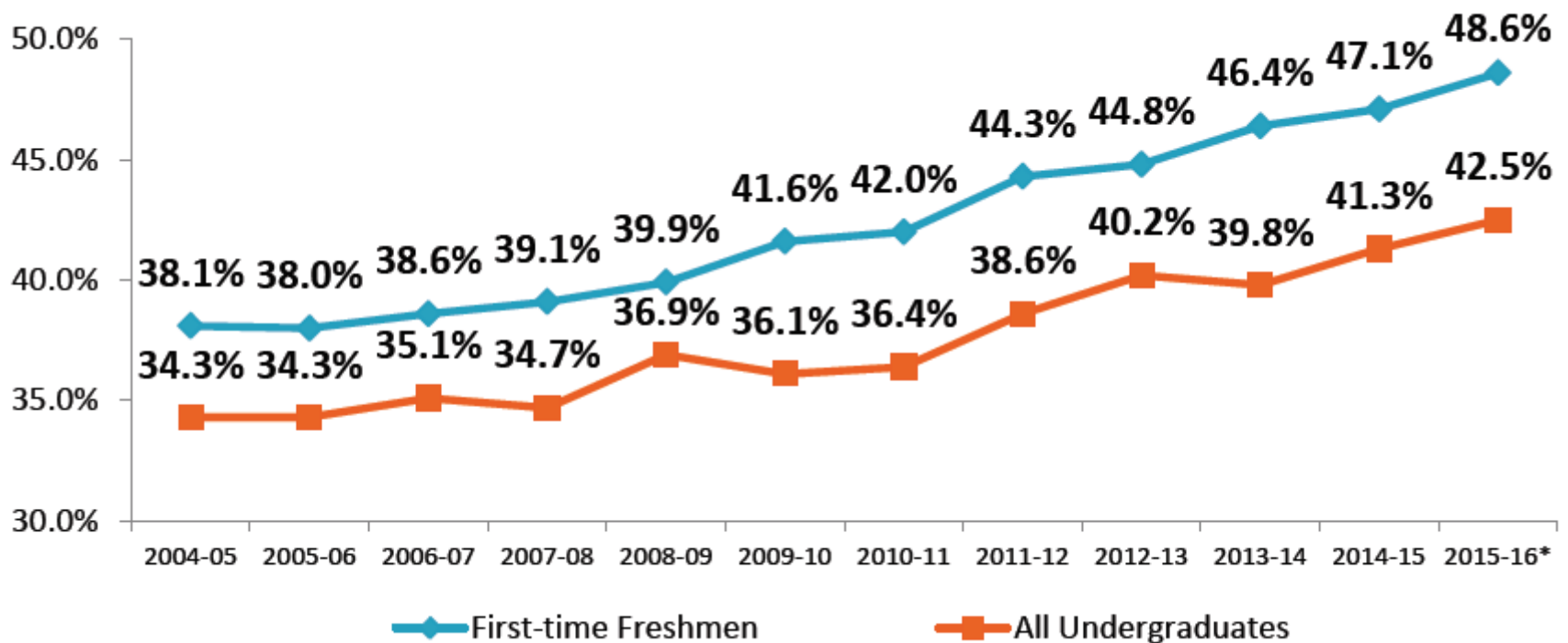


Source: NCHEMS, Colorado Commission on Higher Education, "Some Basic Facts about Colorado Higher Education"

TUITION DISCOUNT RATE, PRIVATE INSTITUTIONS



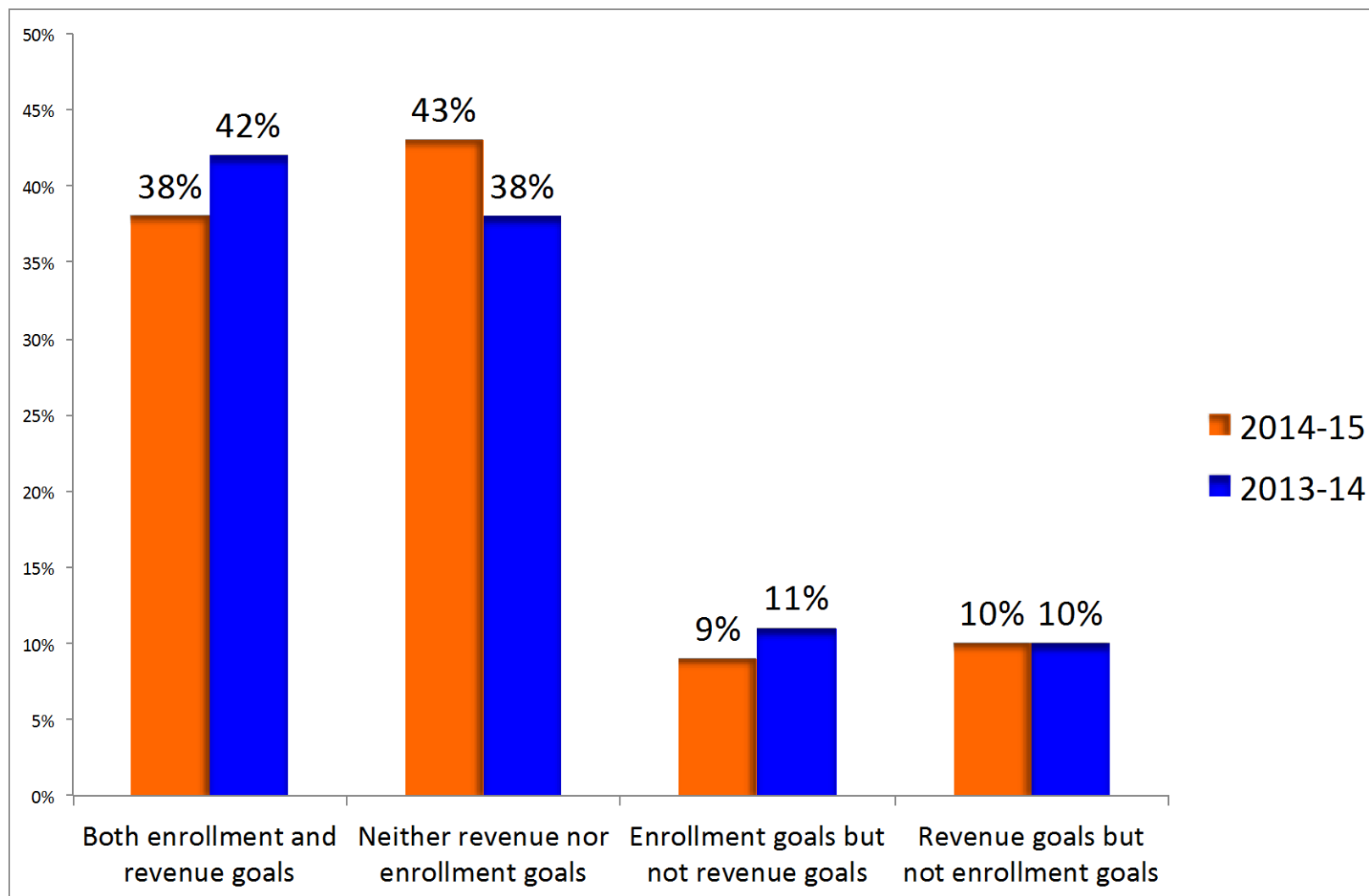
Average Institutional Tuition Discount Rate:
First-Time, Full-Time Freshman and All Undergraduates



Source: 2015 NACUBO Tuition Discounting Study, various years. Data as of the fall of each academic year.

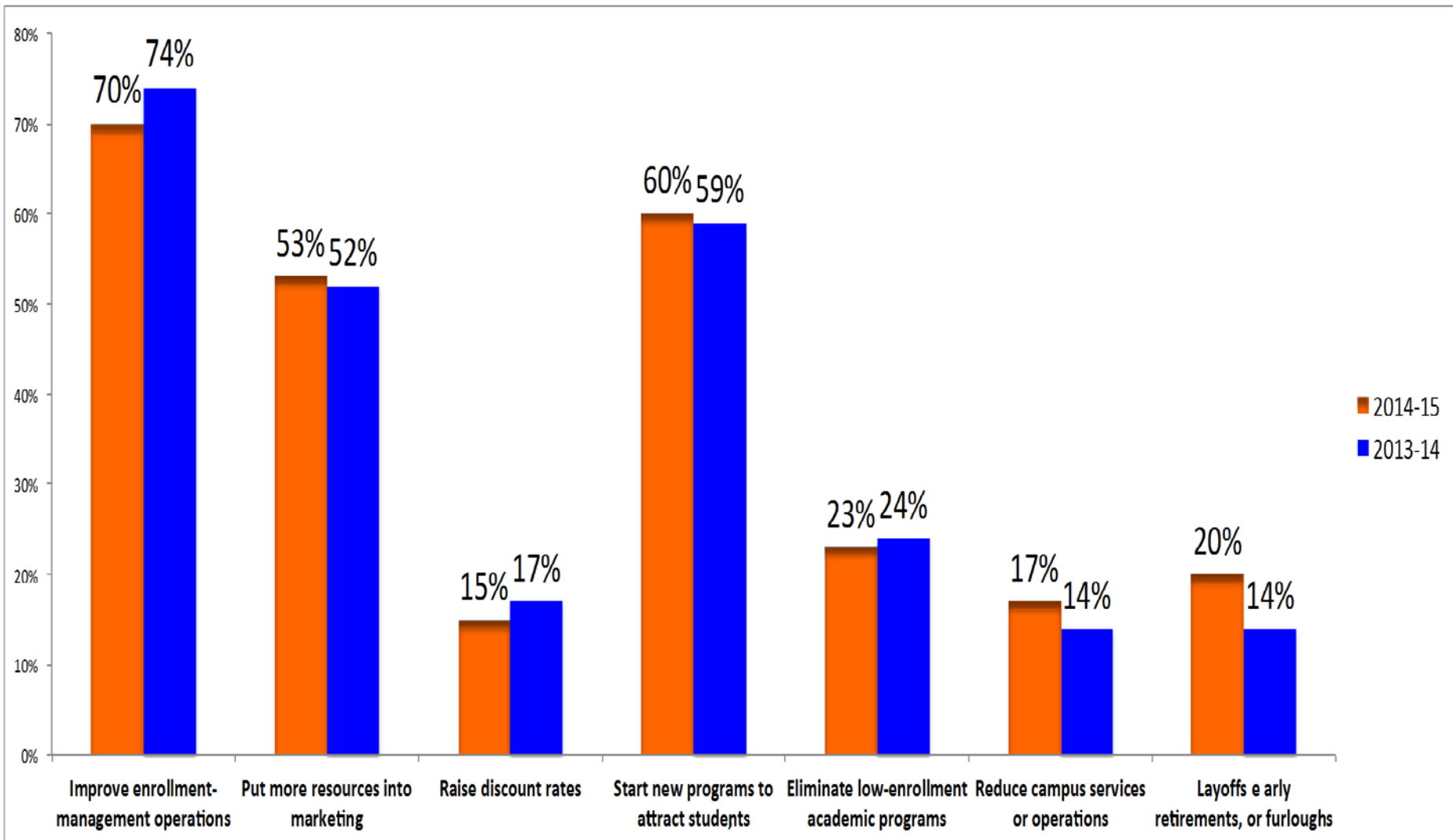
*Preliminary estimate.

COLLEGES MEETING ENROLLMENT AND REVENUE GOALS (CIC INSTITUTIONS)



Source: The Chronicle of Higher Education, *Goals for Enrollment and Tuition Elude Many Colleges*

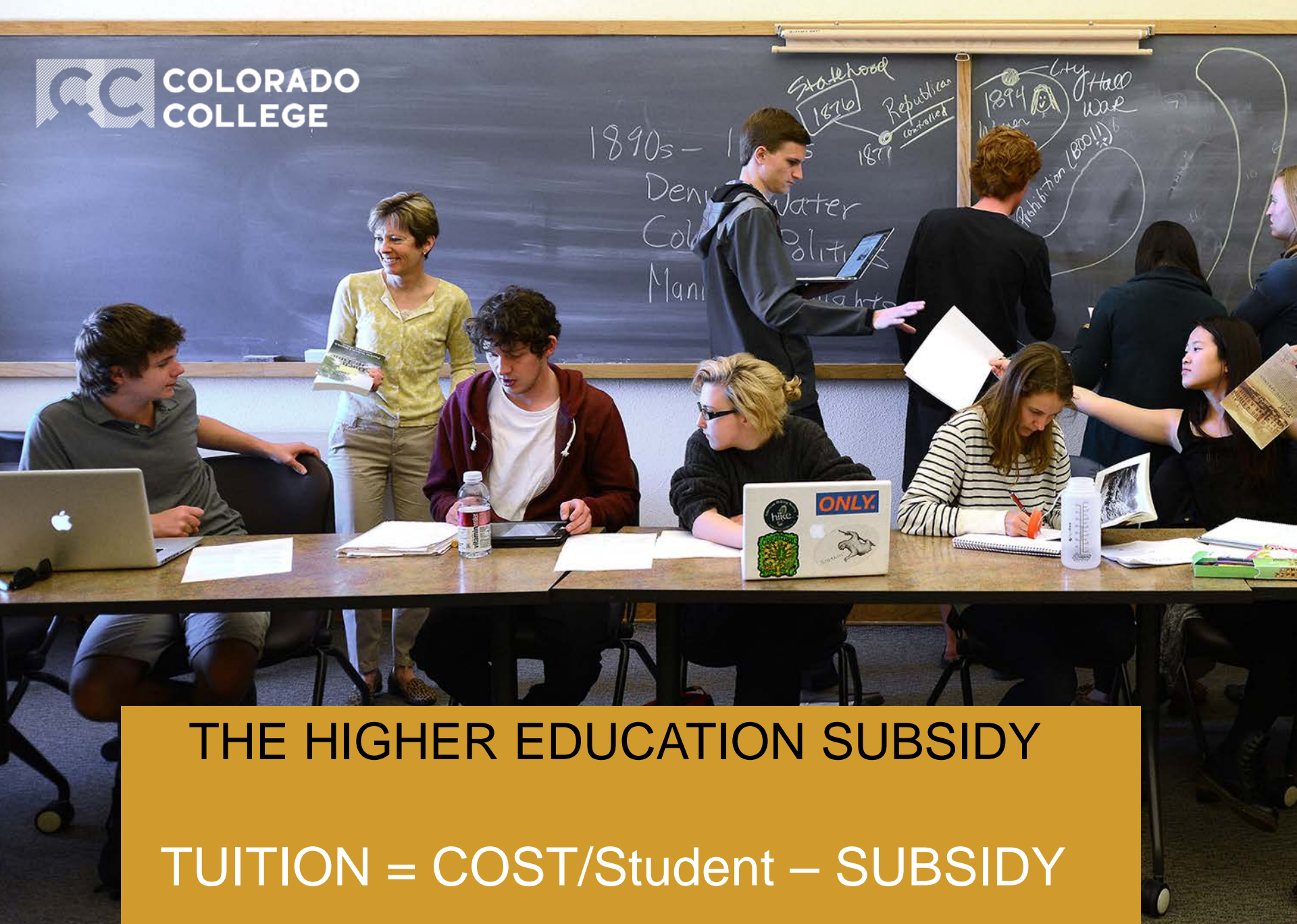
AFTER SHORTFALLS (ENROLLMENT AND REVENUE), WHAT'S NEXT? (CIC INSTITUTIONS)



Source: The Chronicle of Higher Education, *Goals for Enrollment and Tuition Elude Many Colleges*



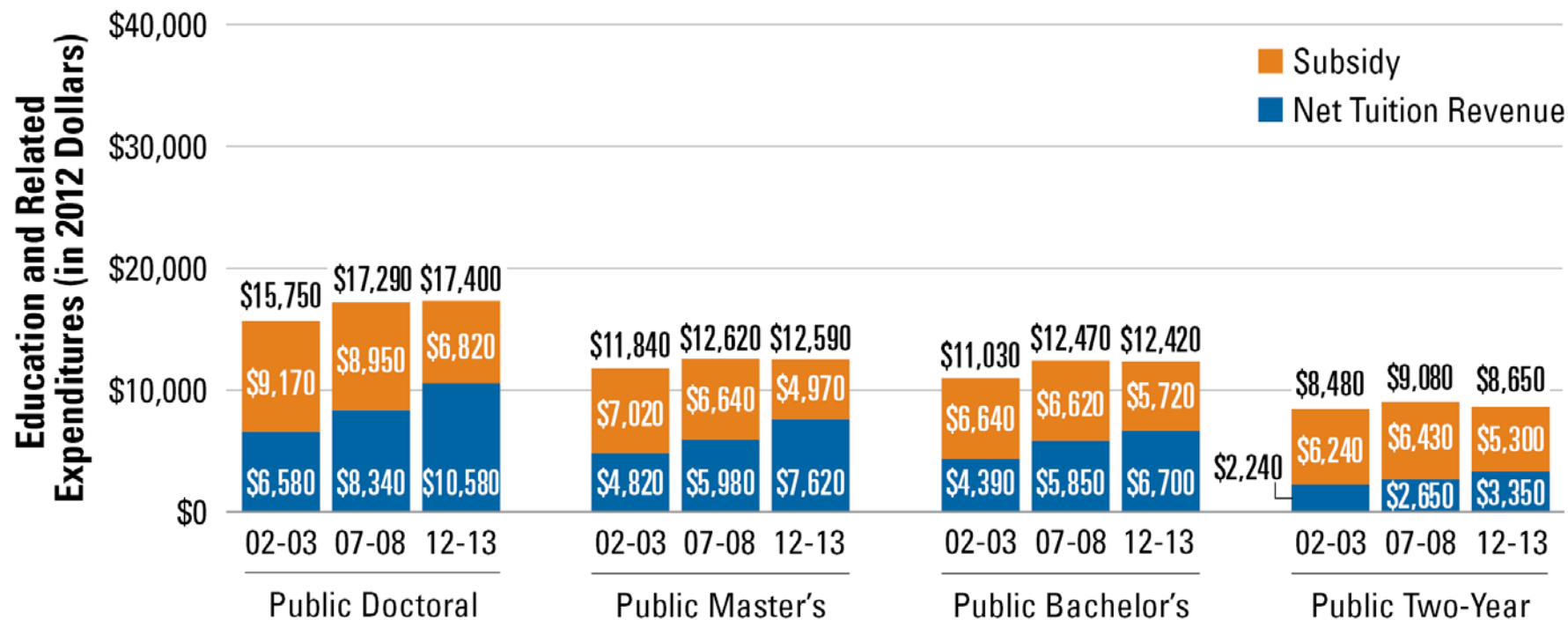
COLORADO
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THE HIGHER EDUCATION SUBSIDY

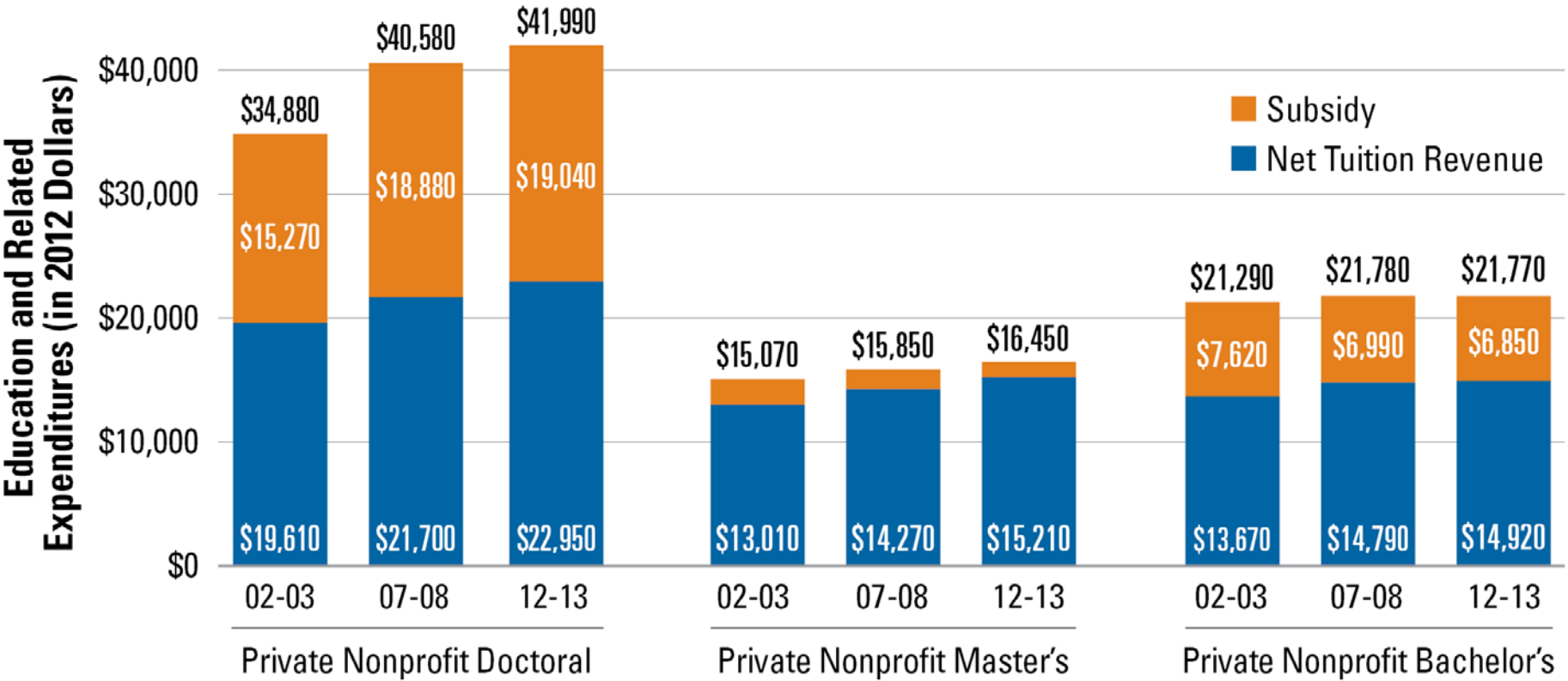
$$\text{TUITION} = \text{COST/Student} - \text{SUBSIDY}$$

NET TUITION REVENUES, SUBSIDIES, AND EDUCATION EXPENDITURES PER FTE STUDENT OVER TIME AT PUBLIC INSTITUTIONS IN CONSTANT 2012 DOLLARS



Source: The College Board, *Trends in College Pricing 2015*, Figure 19B

NET TUITION REVENUES, SUBSIDIES, AND EDUCATION EXPENDITURES PER FTE STUDENT OVER TIME AT PRIVATE NONPROFIT INSTITUTIONS IN CONSTANT 2012 DOLLARS



Source: The College Board, *Trends in College Pricing 2015*, Figure 19A

AVERAGE PUBLISHED UNDERGRADUATE CHARGES, BY CARNEGIE CLASSIFICATION



<i>Tuition and Fees</i>				
<u>Carnegie Classification</u>	<u>2015-16</u>	<u>2014-15</u>	<u>\$ Change</u>	<u>% Change</u>
<i>Public Doctoral In-State</i>	\$10,354	\$10,079	\$275	2.7%
<i>Public Master's In-State</i>	\$8,225	\$7,964	\$261	3.3%
<i>Public Bachelor's In-State</i>	\$7,350	\$7,142	\$208	2.9%
<i>Private Doctoral</i>	\$40,519	\$39,074	\$1,445	3.7%
<i>Private Master's</i>	\$28,466	\$27,495	\$971	3.5%
<i>Private Bachelor's</i>	\$30,521	\$29,526	\$995	3.4%

Source: The College Board, *Trends in College Pricing 2015*, Table1B

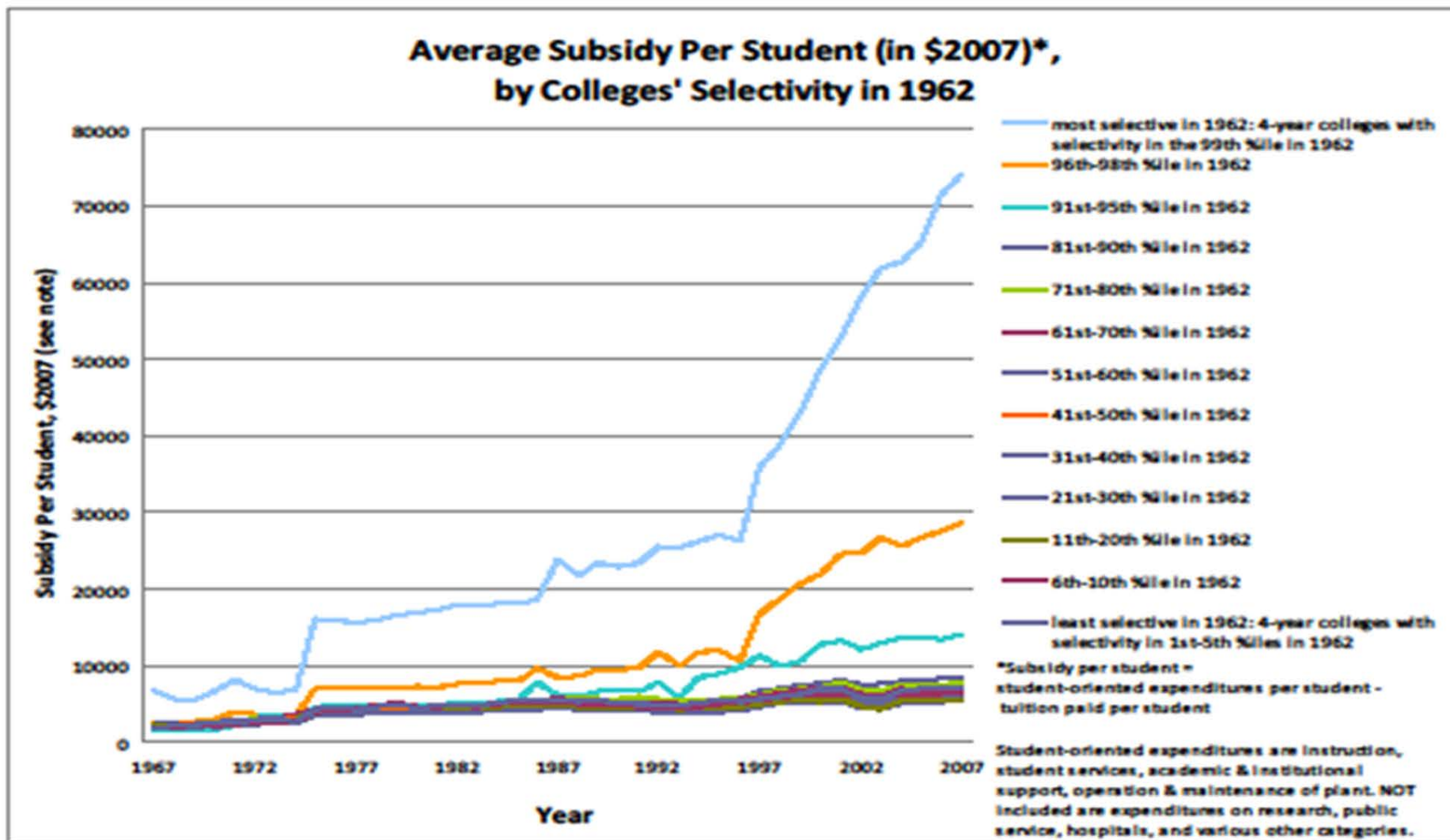
“CALCULATING THE COST OF COLLEGE”



		<u>Family A</u>	<u>Family B</u>	<u>Family C</u>
2011 Combined Income		\$50,000	\$100,000	\$150,000
Home Equity		75,000	150,000	225,000
Savings/Investments		5,000	10,000	25,000
<u>2012-13 Total Price</u>		<u>Family and Student Burden</u>		
<i>Colorado College</i>	\$54,200	9,300	22,650	40,500
<i>U.C. Berkeley</i>	\$32,706	11,110	23,500	32,706
<i>Resident</i>	\$55,584	33,768	46,378	55,184
<i>Out-of-State</i>				
<i>U. of Illinois,</i>	\$33,922	26,277	33,922	33,922
<i>Urbana</i>	\$48,064	41,356	48,064	48,064
<i>Resident</i>				
<i>Out-of-State</i>				

Source: New York Times, “Calculating the Cost of College,”
<http://www.nytimes.com/interactive/2013/01/16/education/calculating-the-cost-of-college.html>

AVERAGE SUBSIDY PER STUDENT BY COLLEGES' SELECTIVITY - HOXBY (2009)





TOTAL WEALTH*

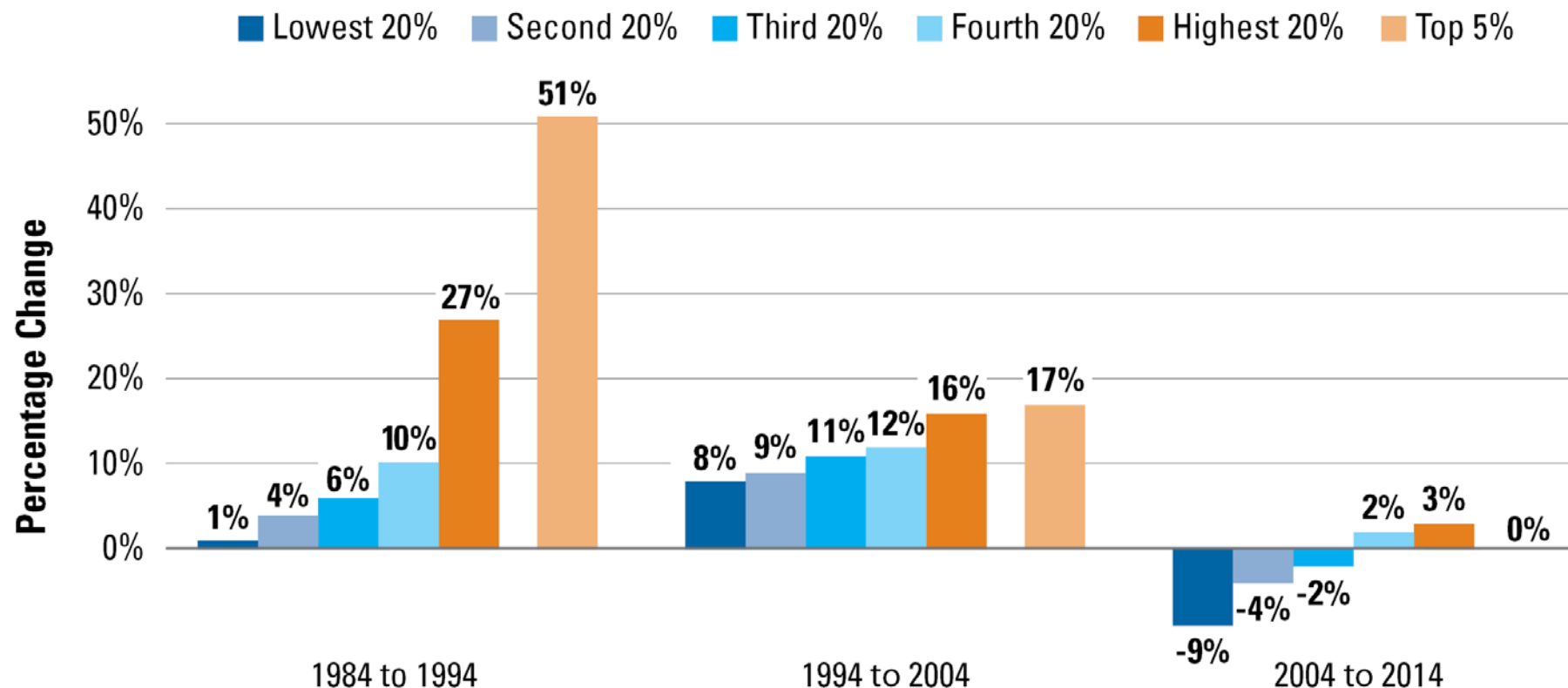
“Top 10” = 1/3+

“Top 40” = 2/3

*503 private and public universities rated
by Moody's

Source: Moody's Investors Service

PERCENTAGE CHANGE IN INFLATION-ADJUSTED MEAN FAMILY INCOME BY QUINTILE, 1984-1994, 1994-2004, AND 2004-2014



Source: The College Board, *Trends in College Pricing 2015*, Figure 22A

THE FACTS: SUMMARY

- Majority of college students attend publics (77%)
- Majority (60%) spend < \$15,000 on T&F per year
- 22% of undergraduates attend schools with tuition & fees listed at \$30,000 or more
- Tuition & Fees have increased beyond



THE FACTS: SUMMARY

- Private tuition has increased 2.4 times over the last 30 years in real terms
- Public tuition has increased 3.2 times over the last 30 years in real terms
- Despite large increases, students are subsidized in all sectors
- Family income has not kept pace with increases



THE ECONOMICS OF HIGHER EDUCATION

Universities are non-profits. Don't max TR-TC

What do universities maximize?

QUALITY – Difficult to measure

How do you produce quality?
Inputs?

- Faculty
- Students
- Customer-input technology.
Peer effects.
- Facilities
- Programs
- Staff
- Athletics
- Other



THE ECONOMICS OF HIGHER EDUCATION

- How do we increase quality? Need REVENUE!
- Unlike for-profits, which benefit from decreasing costs, cutting costs lowers Q.
- How do universities generate revenue?
- Donative revenues – endowment, annual giving, appropriations (publics). Allows $\text{Price} < \text{Cost}$!
- Commercial revenues – tuition, R&B
- Higher education is a very competitive market and QUALITY is the driver. Increasing QUALITY is dependent on increasing revenue. Donative revenue (endowment/appropriations) is key!



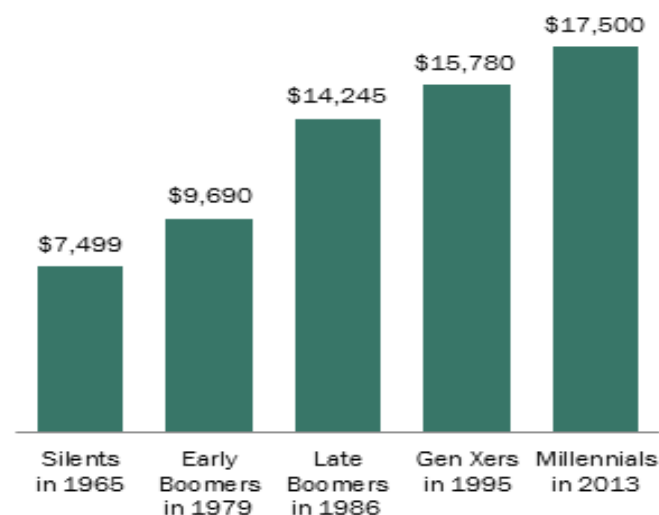
WHY THE INCREASE IN PRICE OF HIGHER EDUCATION?

- Market price is determined by demand and supply
- Demand is increasing
- Demographic bulge
- Increase in value of college degree
- Drive for quality combined with increasing information and national market for higher ed has increased relative demand for most selective institutions. (Hoxby 2009)

BENEFITS OF HIGHER EDUCATION

The Widening Earnings Gap of Young Adults by Educational Attainment

The difference in median annual earnings of college and high school graduates when members of each generation were ages 25 to 32



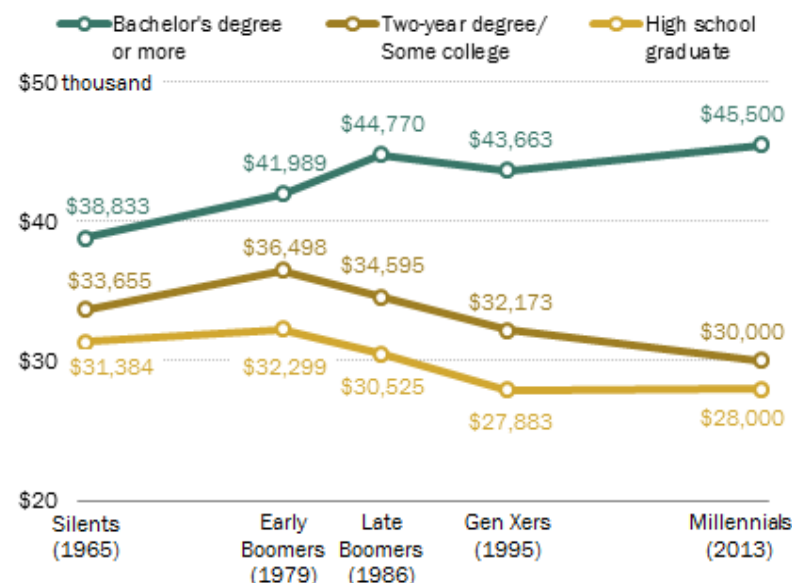
Notes: Median annual earnings are based on earnings and work status during the calendar year prior to interview and limited to 25- to 32-year-olds who worked full time during the previous calendar year and reported positive earnings. "Full time" refers to those who usually worked at least 35 hours a week last year. "College graduates" are those with a bachelor's degree or more.

Source: Pew Research Center tabulations of 2013, 1995, 1986, 1979 and 1965 March Current Population Survey (CPS) Integrated Public Use Micro Samples

PEW RESEARCH CENTER

Rising Earnings Disparity Between Young Adults with And Without a College Degree

Median annual earnings among full-time workers ages 25 to 32, in 2012 dollars



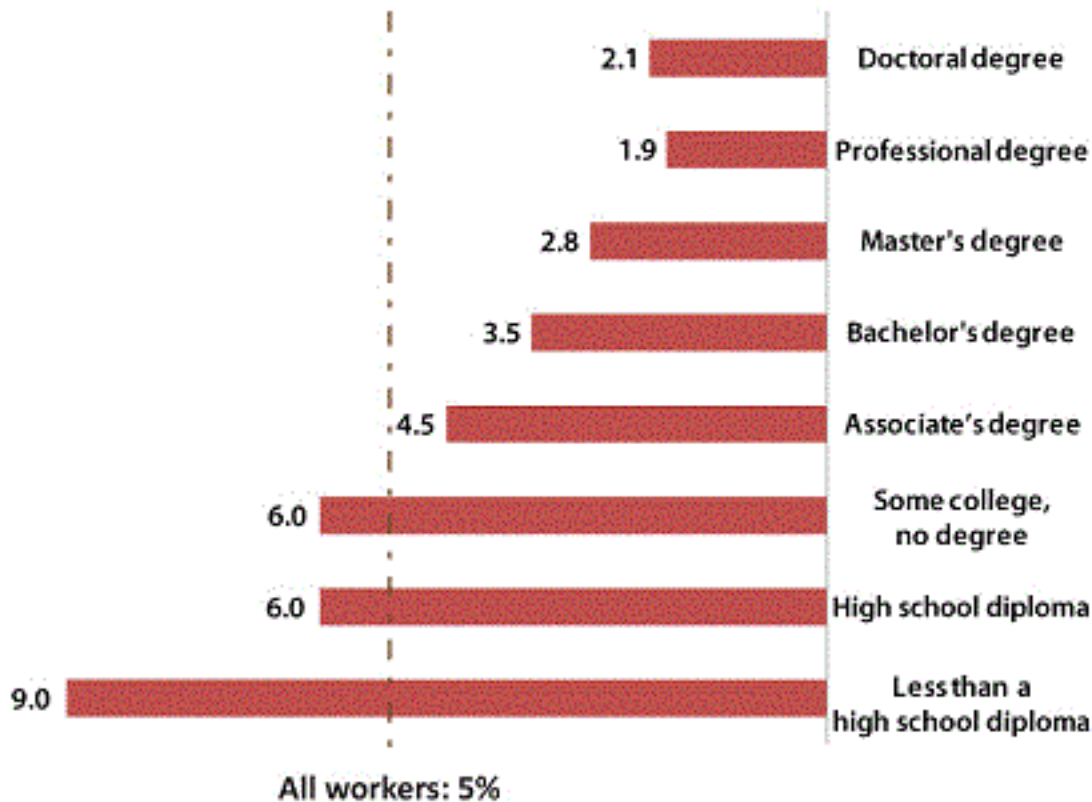
Notes: Median annual earnings are based on earnings and work status during the calendar year prior to interview and limited to 25- to 32-year-olds who worked full time during the previous calendar year and reported positive earnings. "Full time" refers to those who usually worked at least 35 hours a week last year.

Source: Pew Research Center tabulations of the 2013, 1995, 1986, 1979 and 1965 March Current Population Survey (CPS) Integrated Public Use Micro Samples

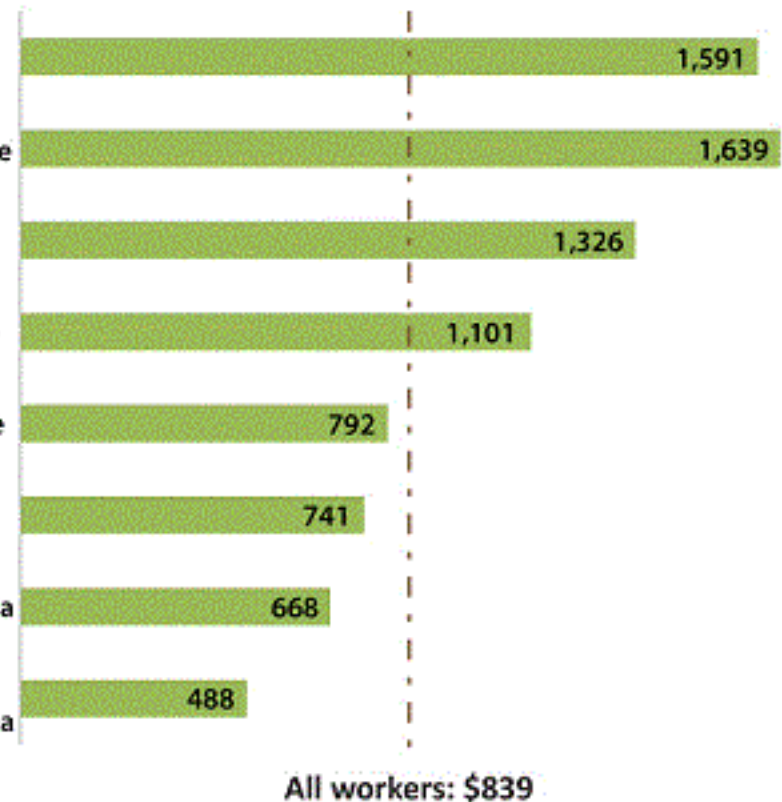
PEW RESEARCH CENTER

Education Pays

Unemployment rate in 2014 (%)

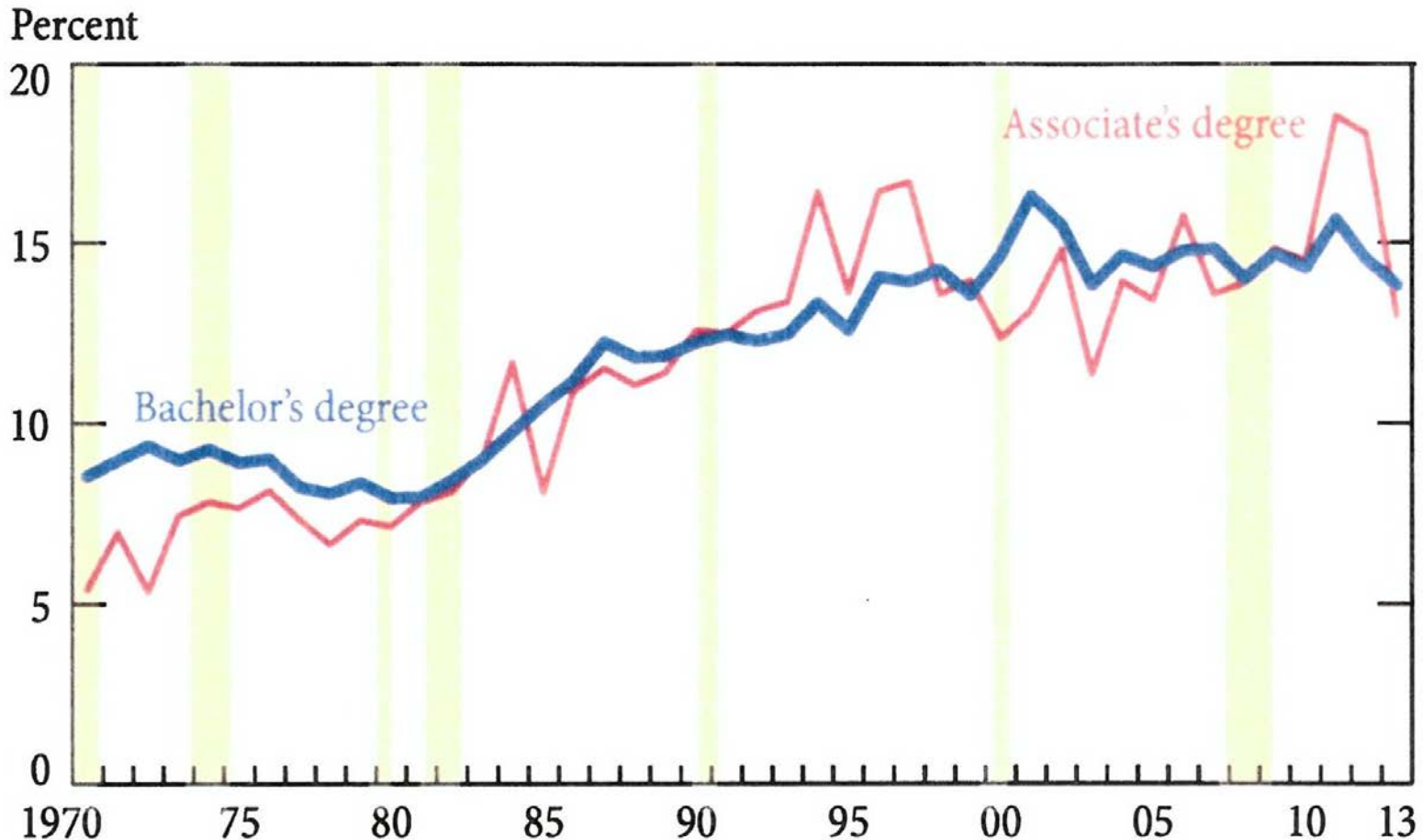


Median weekly earnings in 2014 (\$)



Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.
Source: Current Population Survey, U.S. Bureau of Labor Statistics, U.S. Department of Labor

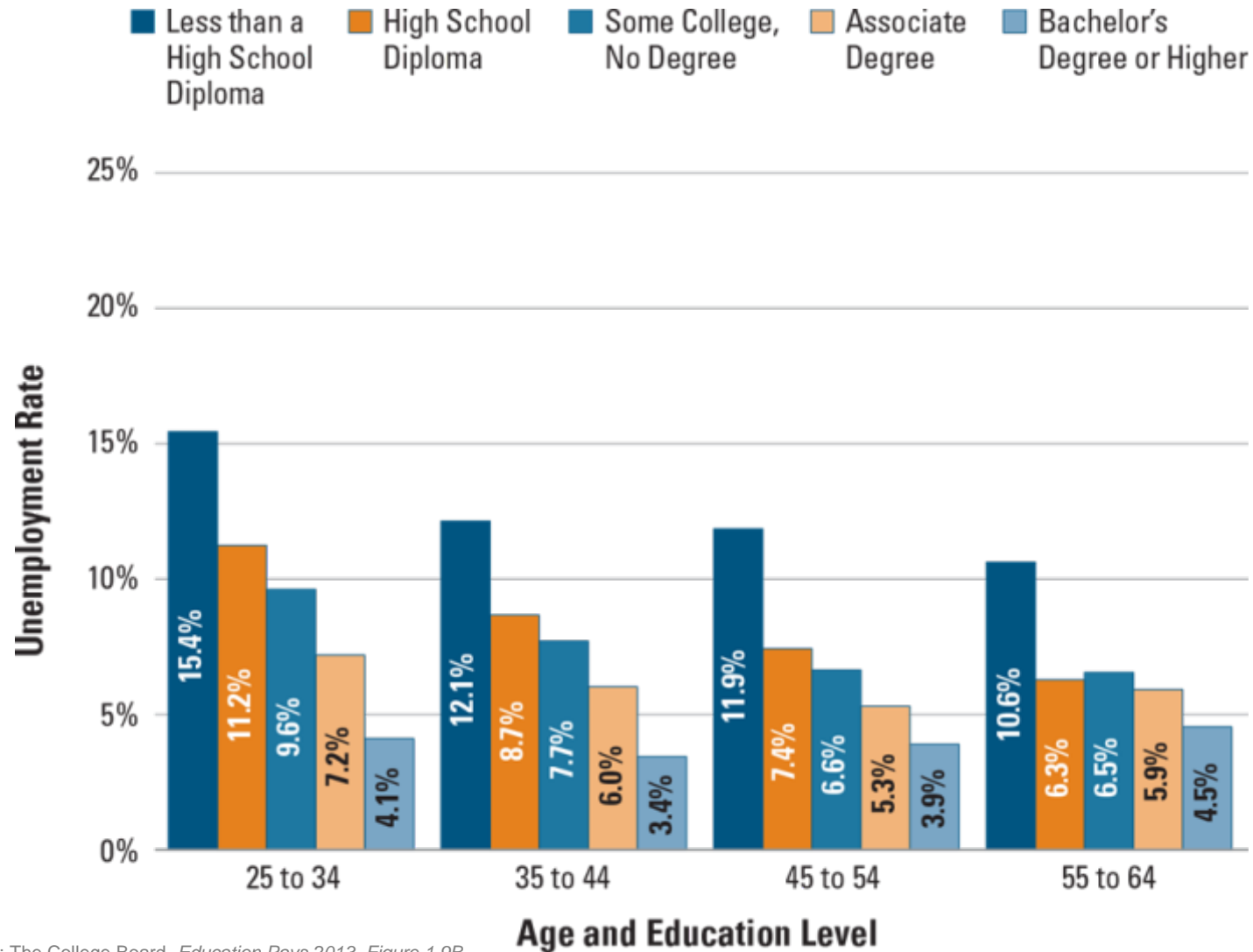
RETURN TO BACHELOR'S AND ASSOCIATE'S DEGREES, 1970-2013



*The shaded areas indicate periods designated recessions by the National Bureau of Economic Research.

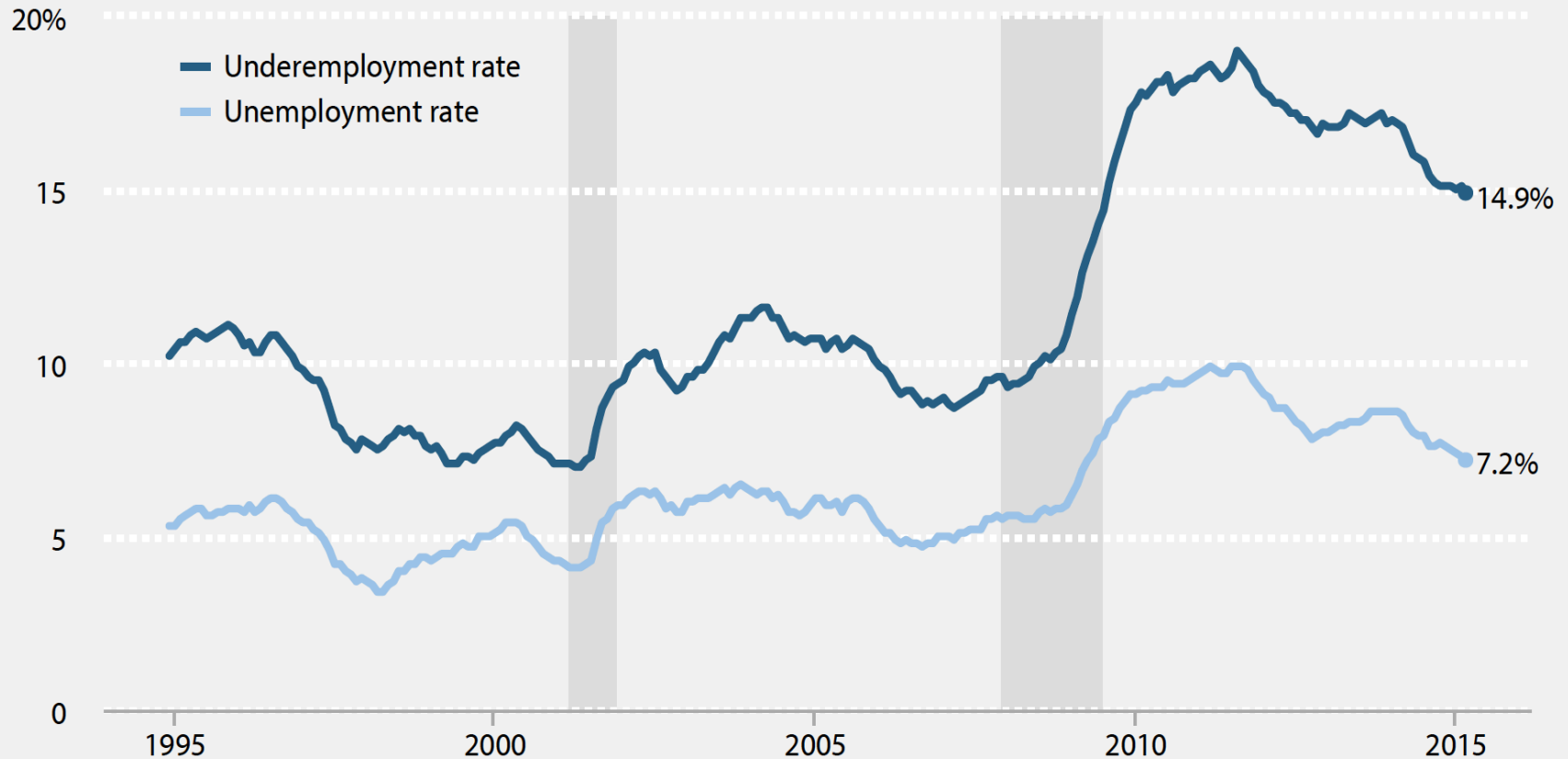
Source: Federal Reserve Bank of NY, "Do the Benefits of College Still Outweigh the Costs?" Current Issues in Economics and Finance, Vol. 20, No. 3, Chart 5.

BENEFITS OF HIGHER EDUCATION



Source: The College Board, *Education Pays 2013*, Figure 1.9B

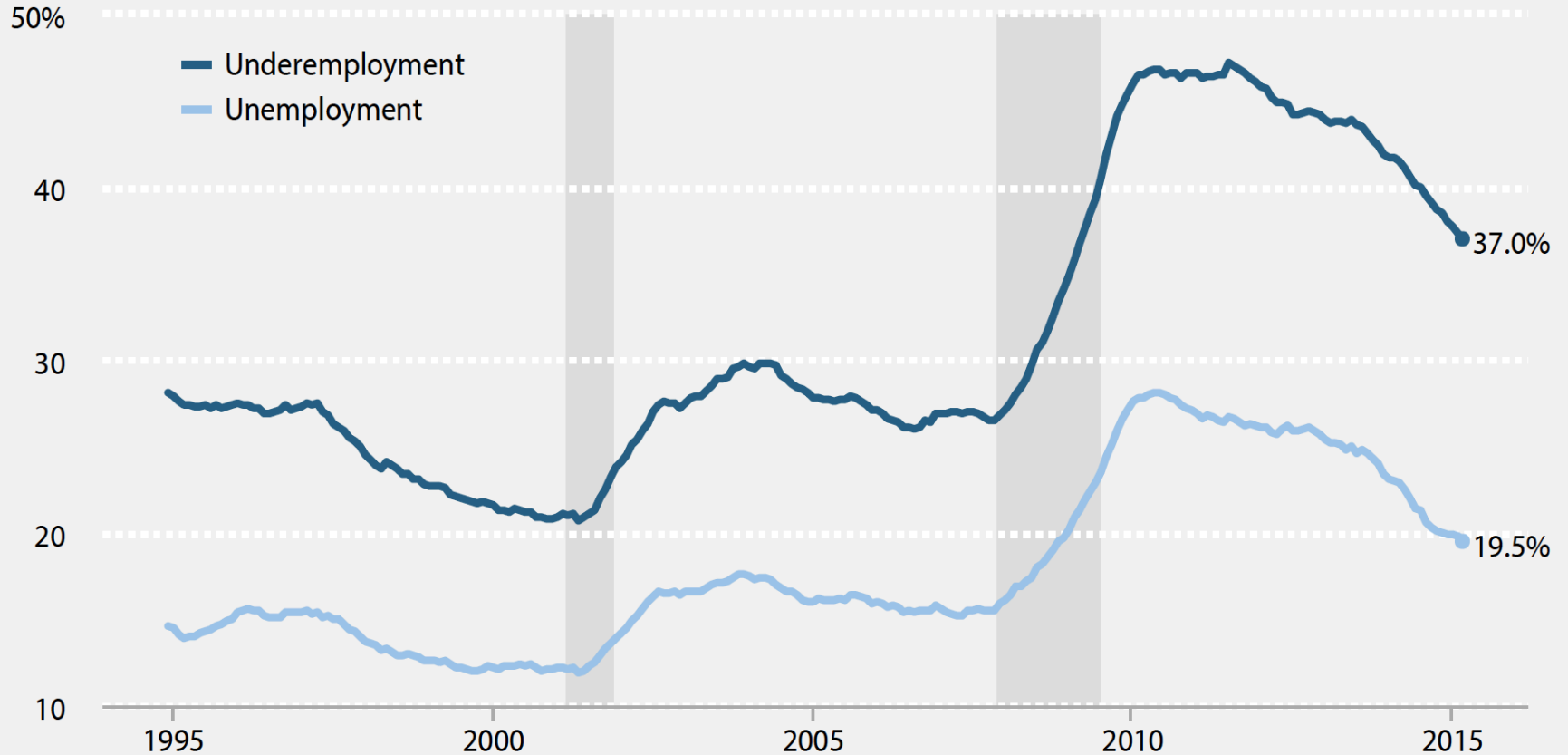
UNEMPLOYMENT/UNDEREMPLOYMENT FOR RECENT COLLEGE GRADUATES, 1994-2015*



*Data for 2015 represent 12-month average from April 2014-March 2015.

Source: Economic Policy Institute, "The Class of 2015: Despite an Improving Economy, Young Grads Still Face an Uphill Climb," Figure G

UNEMPLOYMENT/UNDEREMPLOYMENT RATE FOR RECENT HIGH SCHOOL GRADUATES, 1994-2015*



*Data for 2015 represent 12-month average from April 2014-March 2015.

Source: Economic Policy Institute, "The Class of 2015: Despite an Improving Economy, Young Grads Still Face an Uphill Climb," Figure D.

WHY THE INCREASE IN PRICE OF HIGHER EDUCATION?

- Supply/cost increases
- Cost disease
- Increase in cost of highly skilled labor
- Technology/No productivity improvements
- Financial aid
- Regulation

PERCENTAGE OF HIGHLY EDUCATED WORKERS AND HIGHLY EDUCATED WORKERS' PERCENTAGE OF THE WAGE BILL IN VARIOUS INDUSTRIES-MAY 2007



Industry	Percent of Highly Educated Workers	Highly Educated Workers' Percentage of Wage Bill
Personal Care Services	1.87	4.28
Dry Cleaning and Laundry Services	2.24	7.25
Offices of Dentists	33.65	59.75
Offices of Physicians	45.89	73.79
Legal Services	55.49	76.53
Colleges, Universities, and Professional Schools	67.87	81.18

Source: Robert B. Archibald and David H. Feldman, *Why Does College Cost So Much?*, Oxford University Press, 2011, Table 4.2.

CONCLUDING POINTS



- Students/families want quality. As a result, universities compete on quality as well as NET price. The size of the subsidy influences demand.
- Therefore, lowering sticker price is risky – may not increase demand. Price is seen as an indicator of quality. If your price is lower, you have less revenue and can't increase quality as much as competitors.
- Students who can pay have inelastic demand (quality driven). Others are elastic but get financial aid and not sticker price sensitive.
- Because students are also “inputs” and universities have a social mission, they price below cost and subsidize students to increase Q.
- Price has increased because of shifts in both demand and supply.