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**Postsecondary Education Descriptive Analysis Reports**

## **What Students Pay for College Changes in Net Price of College Attendance Between 1992–93 and 1999–2000**

### **Executive Summary**

The complete report is available at  
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# Executive Summary

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## Introduction

Average tuition adjusted for inflation more than doubled between 1981 and 2000 at public and private not-for-profit 4-year colleges and universities (The College Board 2001a). During the same period, median family income grew 27 percent, and financial aid per full-time-equivalent student grew 82 percent. Responding to increasing public concern over the affordability of higher education, Congress established the National Commission on the Cost of Higher Education to examine the causes for rising costs. The Cost Commission subsequently issued a report called *Straight Talk About College Costs and Prices* (1998), which distinguished *price* from *cost* and defined these terms differently. Cost is the amount it takes an institution to educate a student (i.e., the production cost per student), whereas price is the amount students and their families pay to attend. The price that students and families pay after subtracting financial aid awards is referred to as *net price*. The report concluded that while net price did not increase as substantially as did the “sticker price” charged by institutions, it nevertheless grew at a faster rate than did median income and disposable per capita income during the late 1980s and early 1990s at all three types of colleges and universities studied (public 4-year, private not-for-profit 4-year, and public 2-year institutions).

This study examines the most recent trends in net price. The two major goals of this study are 1) to analyze changes in net price between 1992–93

and 1999–2000 and 2) to examine, within each type of institution, changes in net price over time for students with various levels of income and financial need. The study is a follow-up to a recent congressionally mandated National Center for Education Statistics (NCES) study (Cunningham et al. 2001a) (hereafter referred to as “The Cost Study”), which examined trends in college costs and how costs relate to prices for specific types of institutions.

## *Changes in Financial Aid Awards Between 1992–93 and 1999–2000*

This study uses data from the 1992–93 and 1999–2000 National Postsecondary Student Aid Study (NPSAS:93 and NPSAS:2000). These two NPSAS surveys represent periods before and after major changes in federal financial aid policy went into effect under the 1992 reauthorization of the Higher Education Act (HEA-92). The most significant change affected the federal (Stafford) loan eligibility of dependent students (students who are considered financially dependent on their parents for purposes of financial aid eligibility). Their eligibility for need-based subsidized loans increased, and for the first time they became eligible for unsubsidized student loans. In addition to changes in federal financial aid policy, there were changes in state and institutional grant aid that must be taken into account.

The students included in this study were full-time undergraduates at public 4-year, private not-for-profit 4-year, and public 2-year institutions.

For these students, the major changes in financial aid awards between 1992–93 and 1999–2000 were as follows:

- Reflecting in part expanded eligibility for federal loans as well as a response to increased tuition and fees, undergraduate borrowing increased significantly. The percentage of full-time undergraduates who relied on federal student loans to help pay for their college education increased from 30 to 43 percent overall. After adjusting for inflation, the average amount of a federal student loan also increased, from about \$3,900 to \$4,800. No increase in the percentage of students borrowing was detected for undergraduates in the lowest income quartile—roughly half borrowed in both survey years—but the likelihood of borrowing increased for both middle-income undergraduates (from 32 to 45 percent) and high-income undergraduates (from 15 to 31 percent).
- There was a relatively small increase in the percentage of full-time undergraduates who were awarded state grants (from 17 to 22 percent overall). The average amount awarded increased from about \$1,800 to \$2,000.
- Undergraduates were much more likely to receive institutional grant aid in 1999–2000 than in 1992–93. The percentage of full-time undergraduates who were awarded institutional grant aid increased from 23 to 31 percent overall, and the average amount of aid that students received increased from about \$4,200 to \$4,700.

An important component of this study is to determine how these changes in financial aid awards—especially the significant increase in borrowing—are reflected in changes in net price over the same period.

### ***Data Analyzed in This Study***

Data from NPSAS:93 and NPSAS:2000 are used to compare changes in net tuition and net price over time, after adjusting for inflation. As with The Cost Study, the current study separated public from private not-for-profit colleges and universities and then further separated the public and private 4-year sectors into two aggregated Carnegie classifications: 1) research and doctoral institutions and 2) comprehensive and baccalaureate institutions. The study also analyzed net price changes for public 2-year institutions (also known as community colleges). The analysis excluded students who attended for-profit institutions and other less-than-4-year institutions, as well as those who attended more than one institution. Sample sizes for the excluded institutions in the NPSAS surveys were relatively small and would have yielded few meaningful comparisons. Also, in order to ensure that the amount of tuition<sup>1</sup> paid and the amount of financial aid awarded were comparable between 1992–93 and 1999–2000, only full-time undergraduates attending for the full academic year (i.e., at least 9 months) were included in the analysis. (These students are referred to as “full-time students” throughout the report.) The percentage of students who attended full time, full year ranged from about 50 to 60 percent at 4-year institutions, depending on the institution sector and the NPSAS year, and from 14 to 19 percent at public 2-year colleges.

### ***Measures of Net Tuition and Net Price***

To determine the actual tuition amounts students paid, as opposed to the published sticker price, two measures of net tuition were defined:

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<sup>1</sup>Use of the term “tuition” as opposed to “fees” is arbitrary. The terms can be interchangeable to a large extent. Some institutions only charge tuition, some only fees, and some both.

- *net tuition 1*: total tuition minus federal grants
- *net tuition 2*: total tuition minus all grants

The first net tuition measure takes into account federal grants (primarily Pell), which are awarded to the lowest income students. Changes in net tuition 1 show how much federal grants alone would reduce tuition (mostly for low-income students) if other financial aid sources were not available. The second net tuition measure takes into account all grants—federal, state, institutional, and other.<sup>2</sup>

Tuition is only part of what a college education costs students and families. The total price of attendance, which is estimated by colleges in student budgets, is based on the average tuition as well as living expenses for different types of students. It includes books and supplies, rent, food, and other living expenses in addition to tuition. Typically, nontuition expenses represent about two-thirds of the total price at public 4-year institutions and somewhat less than half of the total price at private not-for-profit 4-year institutions. This study analyzed changes for three measures of net total price of attendance:

- *net price 1*: total price minus federal and state grants<sup>3</sup>
- *net price 2*: total price minus all grants
- *net price 3*: total price minus all grants and loans<sup>4</sup>

<sup>2</sup>Grants from “other sources” include employer tuition reimbursements, National Merit Scholarships, and grants from private sources such as religious, community, or professional organizations.

<sup>3</sup>Net price 1 is not meant to be analogous to net tuition 1. Net tuition 1 (tuition minus federal grants) is a measure typically used to show the purchasing power of Pell Grants. Net price 1 (price minus federal and state grants) is the amount institutions typically take into account in determining whether and how much institutional aid will be awarded.

Net price 1, the price students would pay after subtracting federal and state grants from total price, is the price before the institution commits its own funds to institutional aid and before the student commits to a student loan. Net price 2, the price of attendance after subtracting all grants, is the amount students would pay without taking out a student loan. Net price 3 is the amount students and their families pay out of pocket after taking into account all sources of financial aid, including loans (both subsidized and unsubsidized).<sup>5</sup>

### ***Changes in Net Tuition and Net Price***

After adjusting for inflation, the average total tuition increased between 1992–93 and 1999–2000 across all institution types examined. When federal grants were subtracted from total tuition (net tuition 1), the average net tuition also increased over time except at public 2-year colleges (figure A). However, when *all* grants were subtracted from tuition (net tuition 2), no changes in average net tuition were detected for any institution type. These findings suggest that total grant aid increased enough to help students and families meet the average increase in total tuition between 1992–93 and 1999–2000.

Consistent with the findings for college tuition, after taking inflation into account, the average total price of college attendance increased across all institution types, as did net price after subtracting federal and state grants (net price 1). After all grants were subtracted (net price 2), the price of attendance still increased for many

<sup>4</sup>Work-study, which is awarded to about 5 percent of undergraduates, is not included in the net price calculations. Although work-study is officially financial aid, in practice work-study earnings are no different from the earnings received from any other job held while enrolled.

<sup>5</sup>Does not include federal loans taken out by undergraduates' parents, which are available only to dependent students' parents, among whom about 6 percent took out such loans (Berkner 2002).

**Figure A.—Overall changes in net tuition and net price for full-time, full-year undergraduates between 1992–93 and 1999–2000, by institution type**

	Net tuition		Net price		
	Net tuition 1 (tuition minus federal grants)	Net tuition 2 (tuition minus all grants)	Net price 1 (price minus federal and state grants)	Net price 2 (price minus all grants)	Net price 3 (price minus all grants and loans)
Public 4-year					
Research and doctoral	+	ns	+	+	–
Comprehensive and baccalaureate	+	ns	+	ns	–
Private not-for-profit					
Research and doctoral	+	ns	+	+	ns
Comprehensive and baccalaureate	+	ns	+	ns	–
Public 2-year	ns	ns	+	+	ns

+ Increase (p<0.05).

– Decrease (p<0.05).

ns No significant change detected.

NOTE: Comparisons were made after adjustments for inflation.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

undergraduates. Although the increase in total grants was enough to cover the increase in tuition for undergraduates at all institution types, it did not cover the increase in price (which includes living expenses) for undergraduates attending research and doctoral institutions (both public and private not-for-profit) and public 2-year colleges. Not until loans were also subtracted from price (net price 3) was no increase observed between the average amount students paid in 1992–93 and what they paid in 1999–2000 across all institution types. At public 4-year institutions and private not-for-profit comprehensive and baccalaureate institutions, net price 3 (total price minus all grants and loans) actually *declined* between 1992–93 and 1999–2000. The decline in net price 3 is consistent with the observed increase in borrowing over the same time frame. In other words, compared with their peers in 1992–93, full-time students at public 4-year institutions and private not-for-profit comprehensive and baccalaureate institutions in 1999–2000 paid less out of pocket and increased their debt.

Not all students were affected equally by changes in net price between 1992–93 and 1999–2000. When all grants were taken into consideration (net price 2), students in the lowest income quartile experienced no significant change in net price for any institution type (i.e., no change in net price 2 was detected). In contrast, in nearly all cases, middle- and high-income students did experience an increase in price after all grants were subtracted (net price 2). In other words, between 1992–93 and 1999–2000, the increase in combined federal, state, institutional, and other grant aid awarded was sufficient to offset increases in the price of attendance for low-income students, but not for middle- or high-income students.<sup>6</sup>

The following discussion describes tuition and price changes for each institution type analyzed in the study.

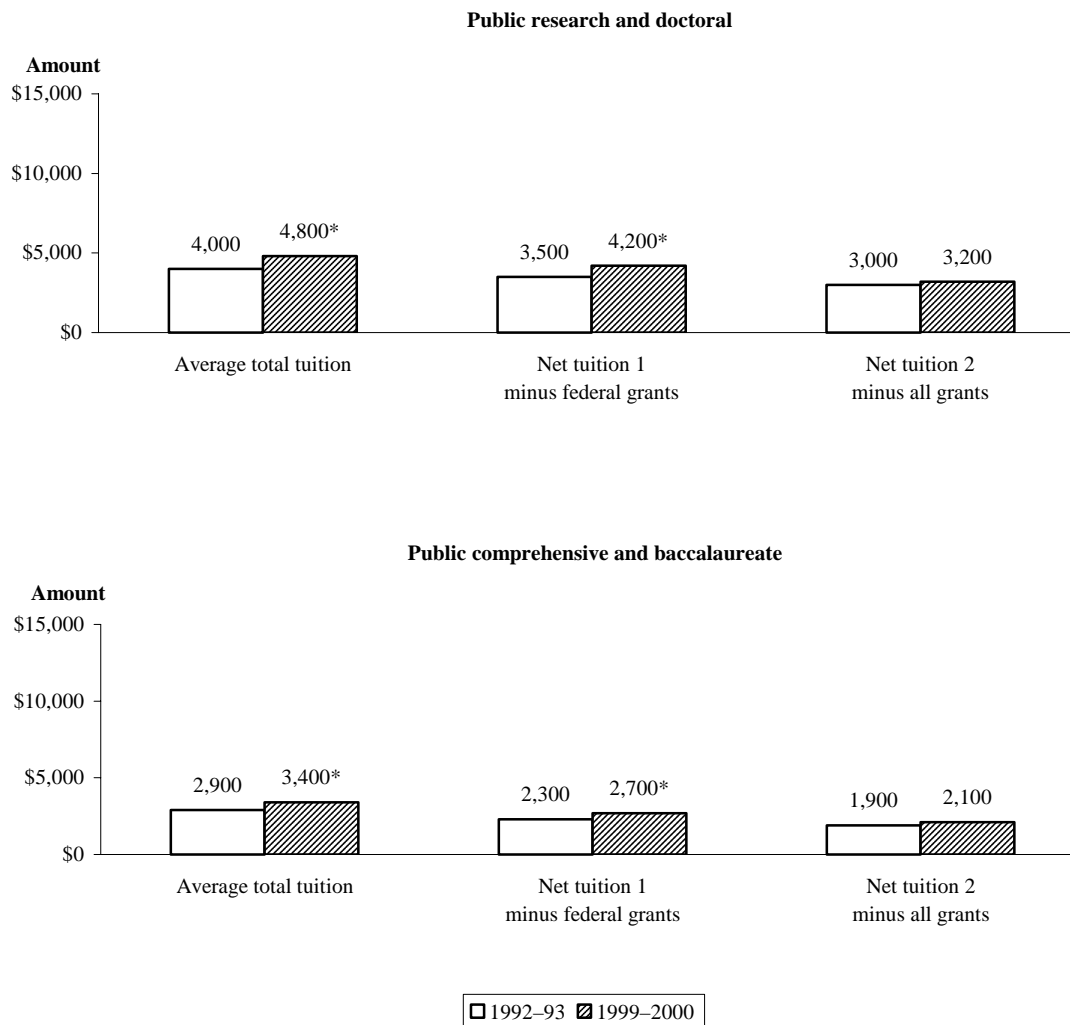
<sup>6</sup>The analysis could not take into account tax credits enacted in the 1990s to assist middle-income students, which may have reduced the burden of the increase in price for certain middle-income students and their families.

**Public 4-Year Colleges and Universities**

**Tuition changes.** Adjusting for inflation, between 1992–93 and 1999–2000 the average total tuition at public research and doctoral institutions increased from about \$4,000 to \$4,800 (figure B).

After subtracting federal grants (net tuition 1), net tuition rose from about \$3,500 to \$4,200. However, when all grants were subtracted from tuition (net tuition 2), no increase was detected in net tuition amounts (about \$3,000). Similar patterns were observed for public comprehensive

**Figure B.—Among full-time, full-year undergraduates attending public 4-year institutions, average total tuition and net tuition in 1992–93 and 1999–2000, in constant 1999 dollars**



\*1992–93 and 1999–2000 amounts significantly different ( $p < 0.05$ ).

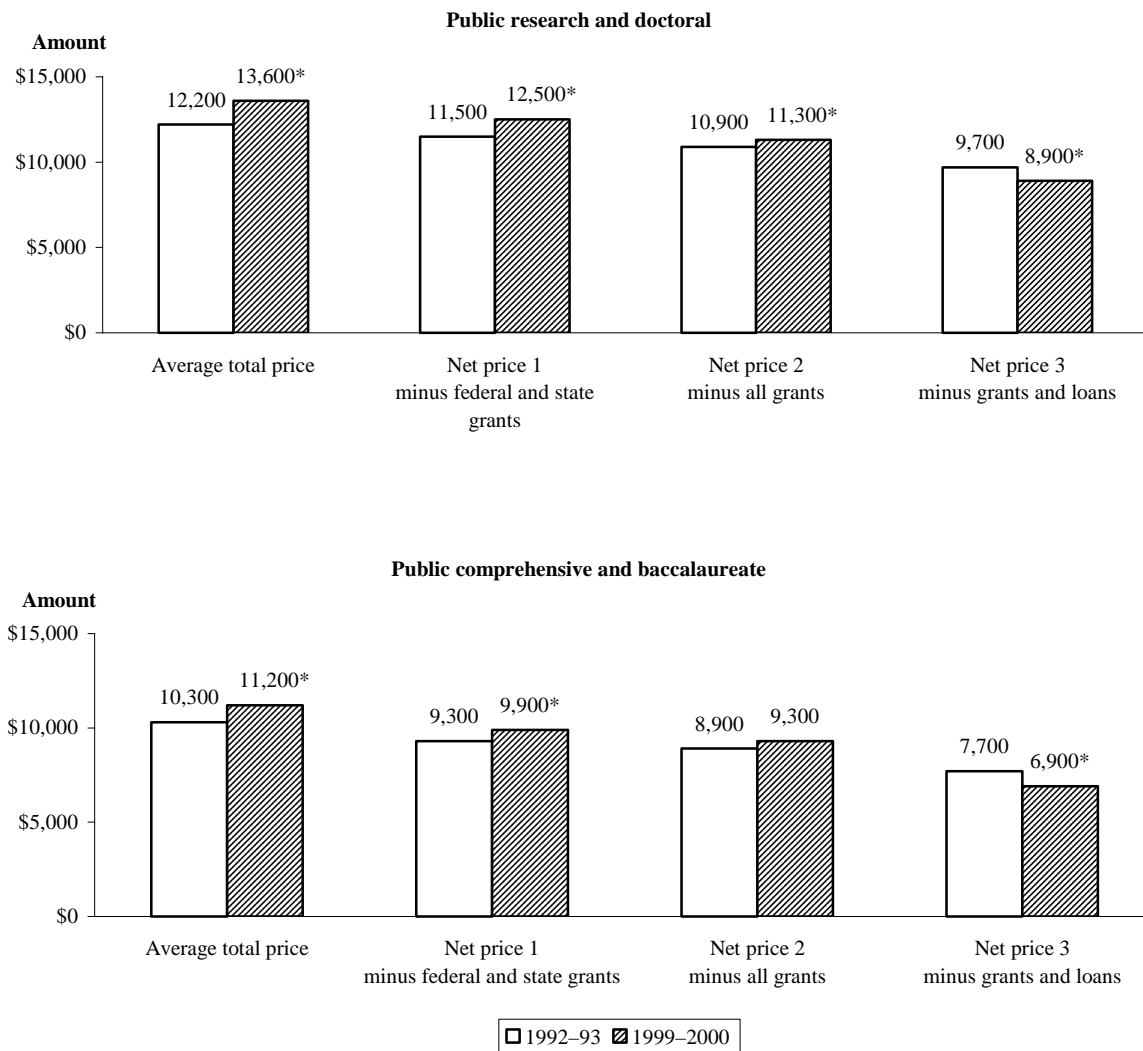
NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

and baccalaureate institutions: total tuition increased from about \$2,900 to \$3,400; net tuition 1 increased from about \$2,300 to \$2,700; but no difference was detected in net tuition 2 after all grants were subtracted (about \$2,000).

**Price changes at public research and doctoral institutions.** Between 1992–93 and 1999–2000, the average total price of attendance at public research and doctoral institutions increased from about \$12,200 to \$13,600 (figure C). After

**Figure C.—Among full-time, full-year undergraduates attending public 4-year institutions, average total price of attendance and various net prices in 1992–93 and 1999–2000, in constant 1999 dollars**



\*1992–93 and 1999–2000 amounts significantly different (p<0.05).

NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).



subtracting federal and state grants (net price 1) or all grants (net price 2), net price still increased. However, when all grants and loans were subtracted from total price, the average amount that undergraduates paid out of pocket was actually less in 1999–2000 (\$8,900) than in 1992–93 (\$9,700).

**Price changes at public comprehensive and baccalaureate institutions.** At public comprehensive and baccalaureate institutions, the total price of attendance increased for full-time undergraduates (from \$10,300 to \$11,200), as did net price 1 (price minus federal and state grants) (from \$9,300 to \$9,900). When all grants were subtracted (net price 2), however, no increase was detected in the average net price. As at public research and doctoral institutions, the net price of attendance declined between 1992–93 and 1999–2000 (from \$7,700 to \$6,900) after subtracting all grants and loans from the total price of attendance (net price 3).

**Price changes by student income level.** Both the average total price and net price 1 (price minus federal and state grants) increased across all income levels for students attending public research and doctoral institutions and for middle- and high-income students attending public comprehensive and baccalaureate institutions. However, when all grants were subtracted (net price 2), no increase was detected for low-income students at either type of public 4-year institution. Increases, on the other hand, were observed for middle- and high-income students for net price 2 (figure D). When loans and grants were subtracted (net price 3), no increases were detected for any income group at either type of institution, and declines in price due to increased borrowing were detected for low- and middle-income students.

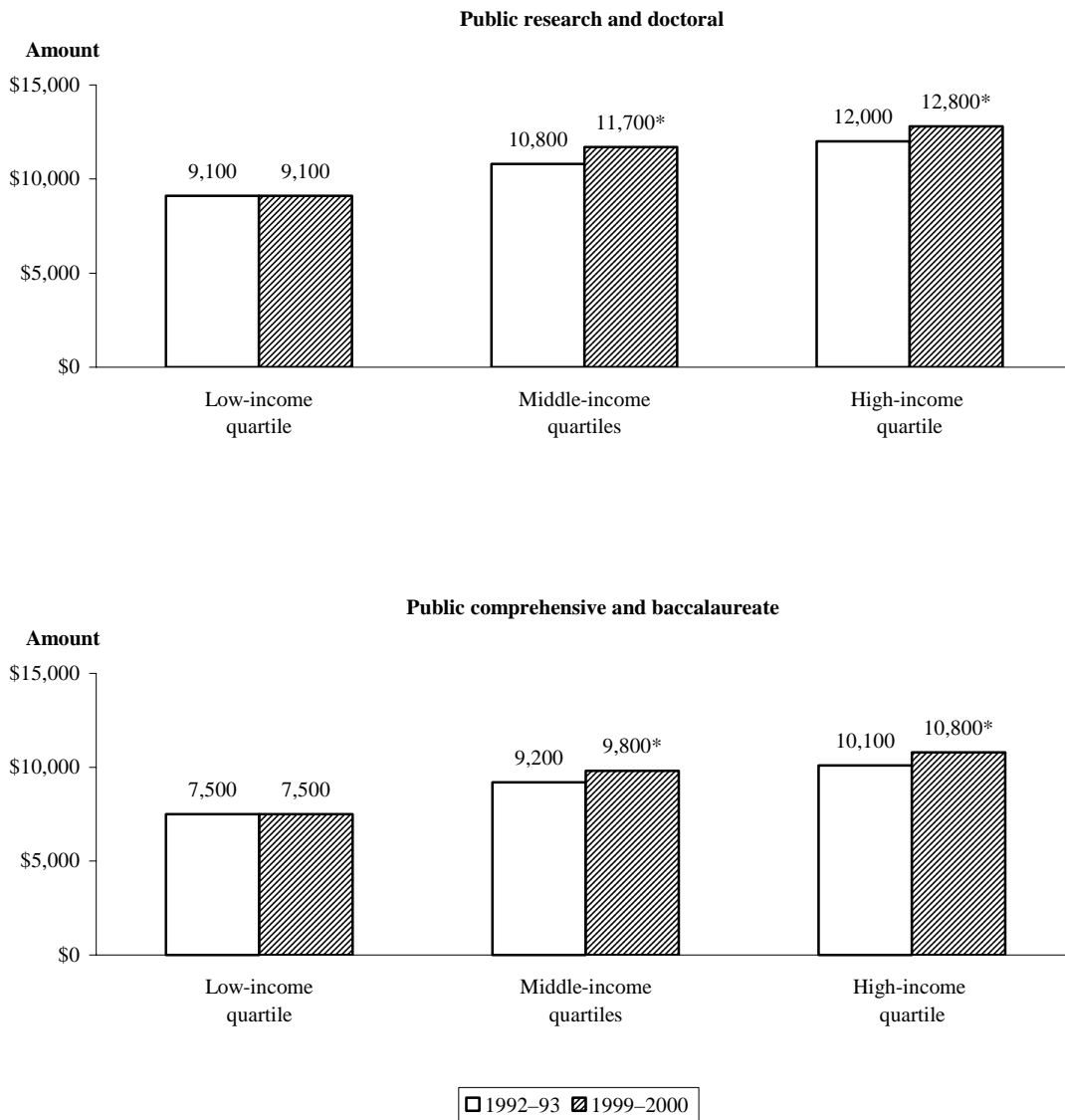
### ***Private Not-for-Profit 4-Year Colleges and Universities***

**Tuition changes.** After adjusting for inflation, average total tuition at private not-for-profit research and doctoral institutions increased from about \$16,300 in 1992–93 to about \$19,700 in 1999–2000 (figure E). Tuition levels still increased between the two periods after federal grants were subtracted (net tuition 1). However, after all grants were subtracted (net tuition 2), no change was detected in average net tuition levels (about \$12,000). Tuition amounts for private not-for-profit comprehensive and baccalaureate institutions followed a similar pattern: average total tuition increased from about \$12,300 to \$14,000; net tuition increased from \$11,500 to \$13,200 after federal grants were subtracted; and no difference was detected in net tuition after all grants were subtracted (about \$8,000).

**Price changes at private not-for-profit research and doctoral institutions.** The total price of attending private not-for-profit research and doctoral institutions increased from about \$25,200 to \$29,300 (figure F). The net price after subtracting federal and state grants (net price 1) also increased, as did the net price after subtracting all grants combined (net price 2). However, when loans and grants were subtracted from total price (net price 3), undergraduates paid roughly \$18,000 in both 1992–93 and 1999–2000 to attend private not-for-profit research and doctoral institutions.

**Price changes at private not-for-profit comprehensive and baccalaureate institutions.** At private not-for-profit comprehensive and baccalaureate institutions, the average total price of attendance increased from about \$19,600 to

**Figure D.—Among full-time, full-year undergraduates attending public 4-year institutions, the net price after subtracting all grants (net price 2) in 1992–93 and 1999–2000, in constant 1999 dollars, by income quartiles**

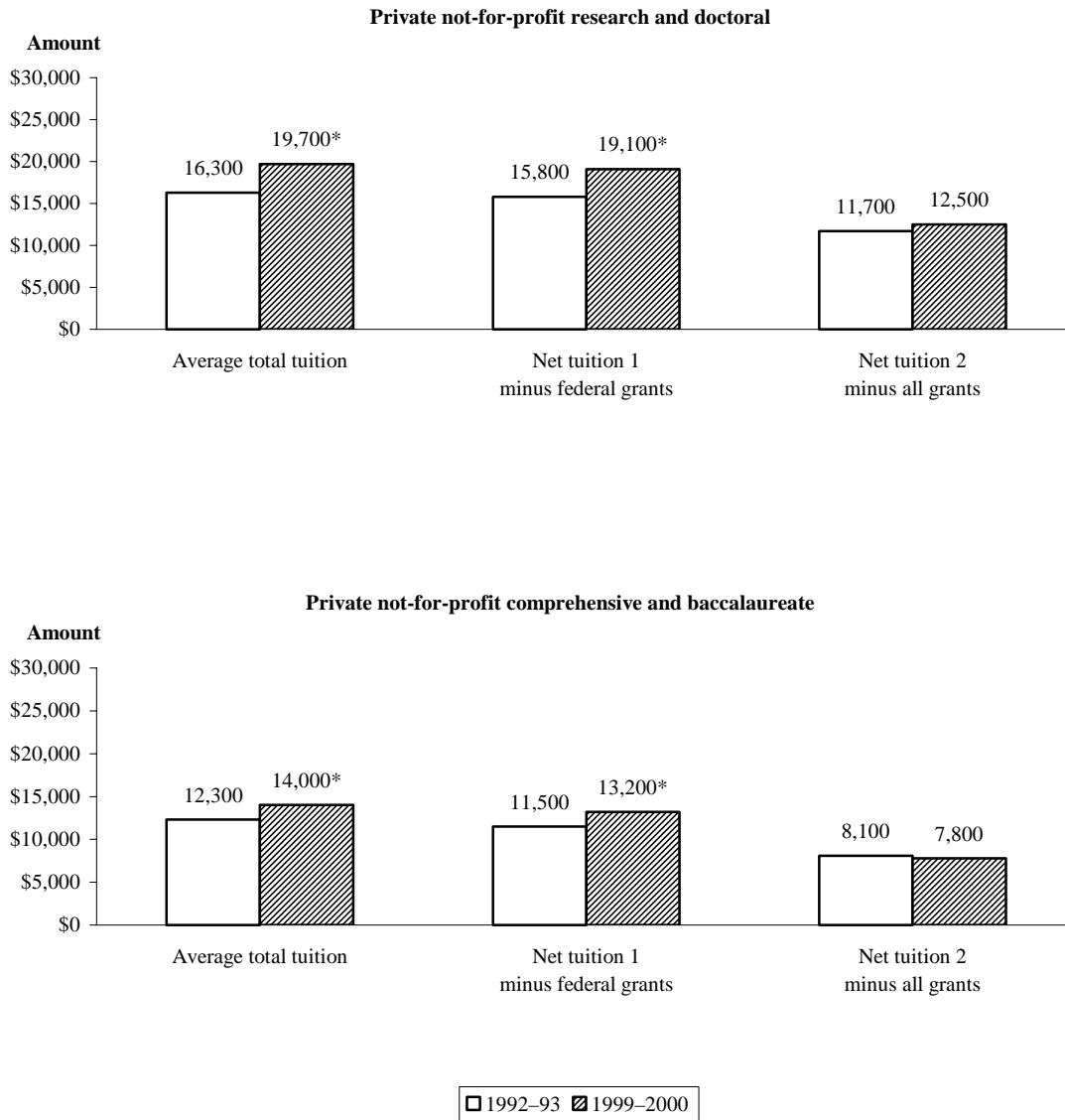


\*1992–93 and 1999–2000 amounts significantly different ( $p < 0.05$ ).

NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

**Figure E.—Among full-time, full-year undergraduates, attending private not-for-profit 4-year institutions, average total tuition and net tuition in 1992–93 and 1999–2000, in constant 1999 dollars**

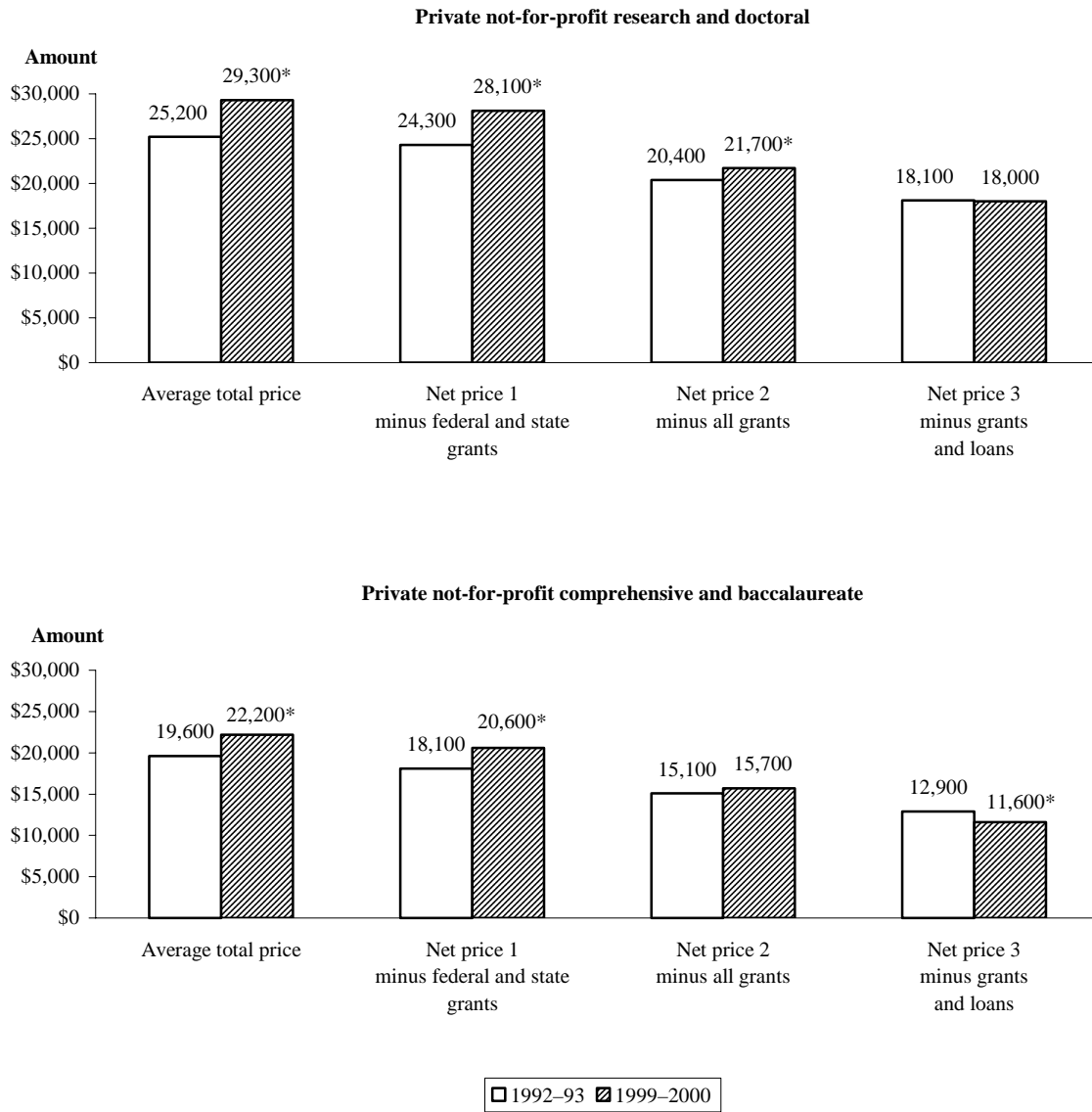


\*1992–93 and 1999–2000 amounts significantly different ( $p < 0.05$ ).

NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

**Figure F.—Among full-time, full-year undergraduates attending private not-for-profit 4-year institutions, average total price of attendance and various net prices in 1992–93 and 1999–2000, in constant 1999 dollars**



\*1992–93 and 1999–2000 amounts significantly different ( $p < 0.05$ ).

NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

\$22,200. The net price after subtracting federal and state grants (net price 1) was also higher in 1999–2000 than in 1992–93. However, after all grants were subtracted from total price (net price 2), no difference was detected in average net price. When loans and grants were subtracted from total price (net price 3), undergraduates paid less out of pocket to attend private not-for-profit comprehensive and baccalaureate institutions in 1999–2000 (\$11,600) than they did in 1992–93 (\$12,900).

***Price changes by student income level.***

Examining price changes by income level revealed that total price and net price 1 (minus federal and state grants) increased across all income levels for students attending private not-for-profit research and doctoral institutions. Total price and net price 1 increased for middle- and high-income students attending comprehensive and baccalaureate institutions. When all grants were subtracted (net price 2), both middle- and high-income students at private not-for-profit research and doctoral institutions still faced an increase in price, while only middle-income students faced such an increase at private not-for-profit comprehensive and baccalaureate institutions (figure G). In other words, at private not-for-profit comprehensive and baccalaureate institutions, neither low-income nor high-income students faced a higher attendance price after all grants were subtracted, while at research and doctoral institutions, this was the case only for low-income students. After loans and grants were subtracted from total price (net price 3), only high-income students attending research and doctoral institutions paid a higher price of attendance.

***Public 2-Year Colleges***

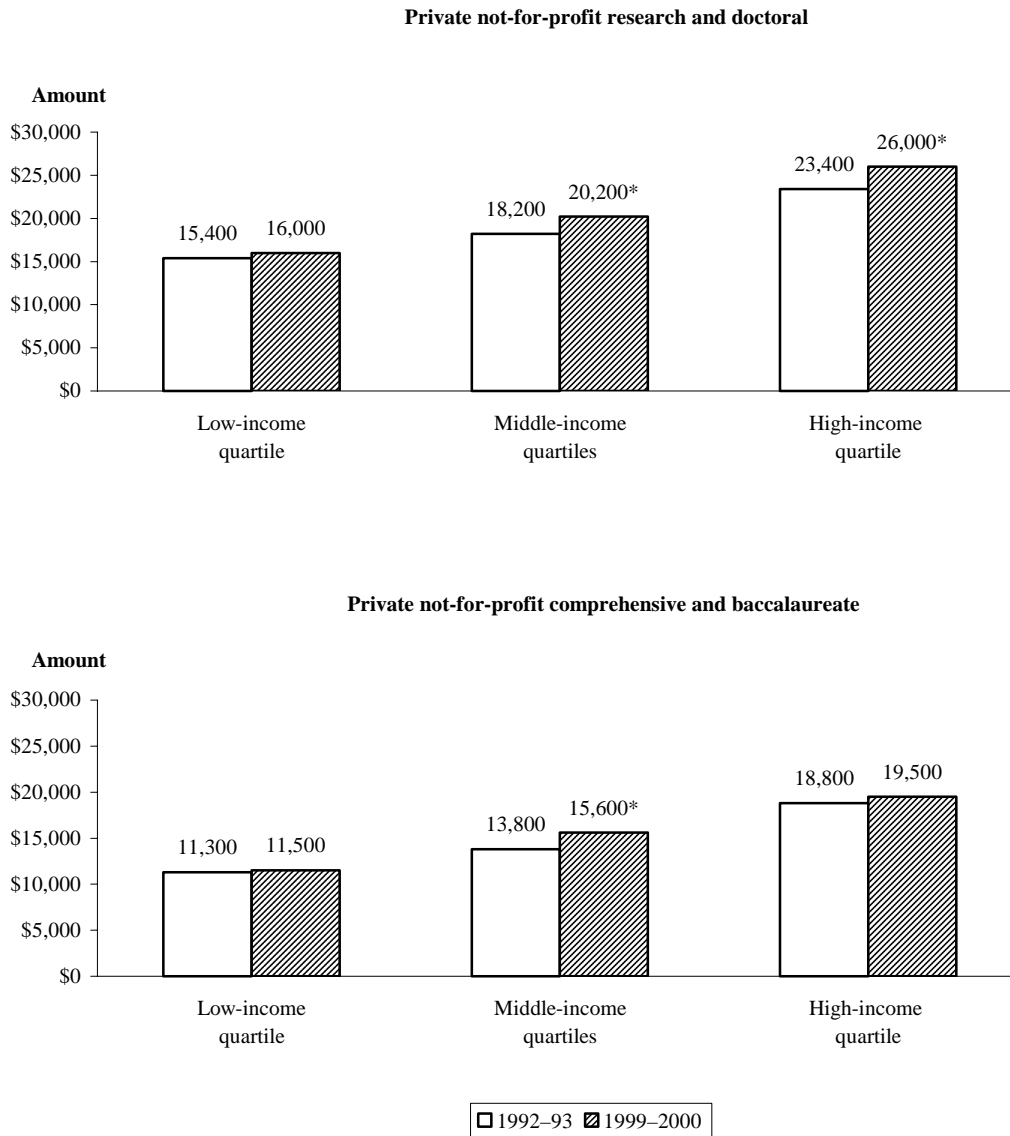
***Tuition changes.*** Like colleges and universities in the 4-year sector, community colleges saw an

increase in the average total tuition for full-time students between 1992–93 and 1999–2000, from about \$1,400 to \$1,600 after adjusting for inflation (figure H). However, unlike the pattern for 4-year institutions, when federal grants were subtracted from net tuition (net tuition 1), no change in tuition could be detected for community colleges. It appears, then, that federal grants increased enough to cover the increase in tuition between 1992–93 and 1999–2000 for full-time students at community colleges. When all grants were subtracted (net tuition 2), net tuition at community colleges was roughly \$900 for both years.

***Price changes.*** The average total price of attending community colleges for full-time students increased from about \$8,000 to \$9,100 between 1992–93 and 1999–2000. Increases in price were also observed after federal and state grants were subtracted (net price 1), as well as after all grants were subtracted (net price 2). However, no difference was detected between 1992–93 and 1999–2000 in the net price that community college students paid after loans and grants were subtracted from the total price (net price 3); full-time community college students paid roughly \$7,000 in both 1992–93 and 1999–2000.

***Price changes by student income level.*** When examining price changes by income levels, no change in net price was detected for low-income students for any net price measure. Middle-income students faced increases in net price 1 (minus federal and state grants) and net price 2 (minus all grants). No change was detected in net price 3 (minus all grants and loans) for either low- or middle-income students. Only high-income students attending community colleges paid a higher net price after loans and grants were subtracted from total price (net price 3).

**Figure G.—Among full-time, full-year undergraduates attending private not-for-profit 4-year institutions, the net price after subtracting all grants (net price 2) in 1992–93 and 1999–2000, in constant 1999 dollars, by income quartiles**

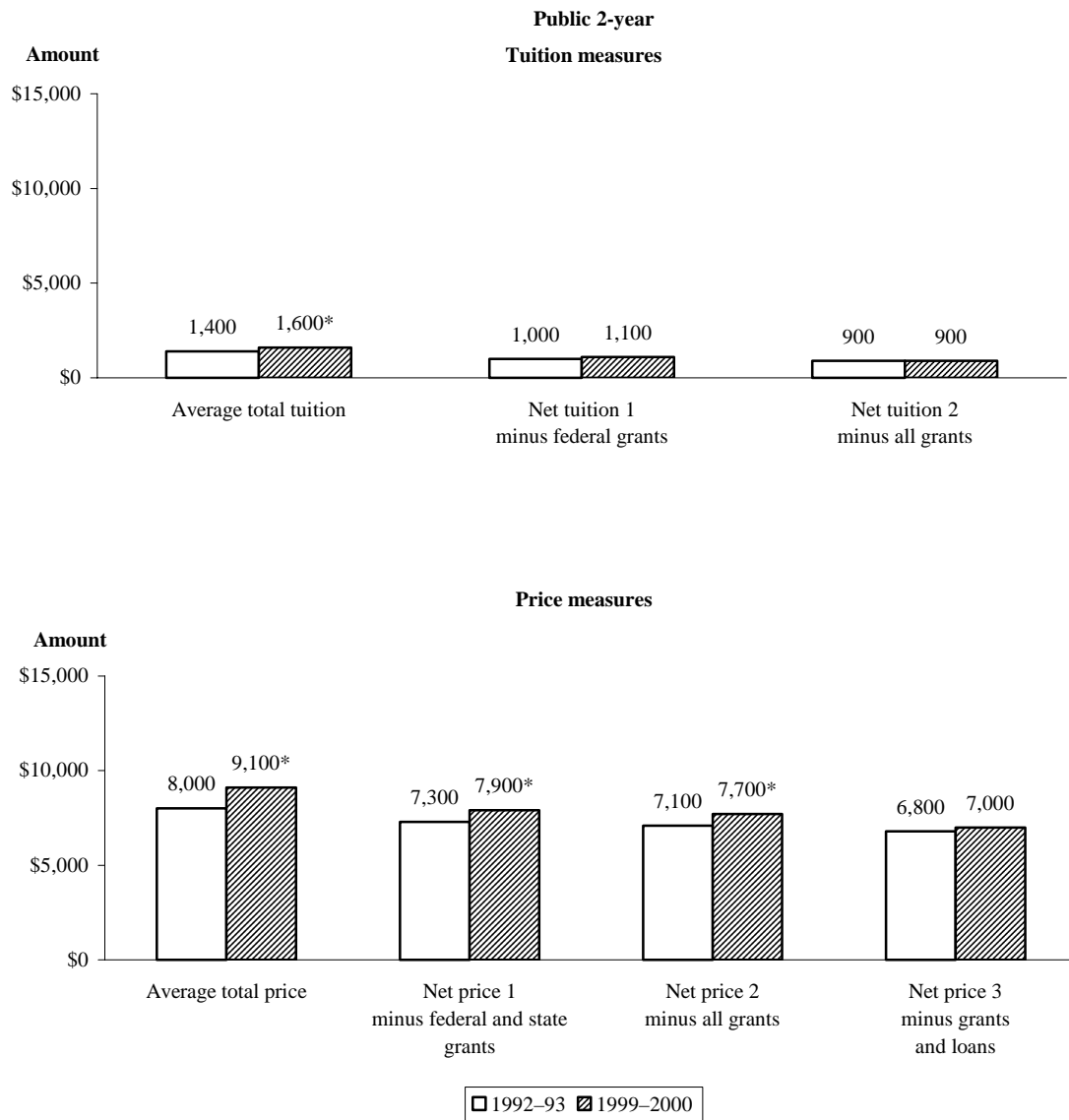


\*1992-93 and 1999-2000 amounts significantly different ( $p < 0.05$ ).

NOTE: All estimates for the 1992-93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992-93 (NPSAS:93) and 1999-2000 (NPSAS:2000).

**Figure H.—Among full-time, full-year undergraduates attending public 2-year colleges, average total tuition, net tuition, total price, and various net prices in 1992–93 and 1999–2000, in constant 1999 dollars**



\*1992–93 and 1999–2000 amounts significantly different ( $p < 0.05$ ).

NOTE: All estimates for the 1992–93 academic year were converted from 1992 to 1999 dollars using the average annual Consumer Price Index for All Urban Consumers (CPI-U) published in the CPI-U table by the U.S. Department of Labor, Bureau of Labor Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study, 1992–93 (NPSAS:93) and 1999–2000 (NPSAS:2000).

## **Conclusions**

The results of this study indicate a measurable increase in the average total tuition and average total price of college attendance between 1992–93 and 1999–2000 (after adjusting for inflation) across all included institution types. However, when all grants were subtracted from tuition (net tuition 2), no change could be detected in the average amount that full-time undergraduates paid between 1992–93 and 1999–2000. The same was not found for the net price of attendance. As reflected in net price 2, when living expenses and other nontuition costs were taken into account, all grants combined were not sufficient to offset the increase in price for those attending public or private not-for-profit 4-year research and doctoral institutions or public 2-year colleges. However, not all students were affected equally by the changes in price. The increase in all grants (combined federal, state, institutional, and other

grant aid) appeared to be sufficient to offset increases in total price for those undergraduates who could least afford to pay an increase—low-income students. This finding was consistent across all institution types included in the study.

After loans and grants were subtracted from total price (net price 3), with two exceptions, no increases in net price were observed for any income group attending any institution type. The only students who paid a higher net price in 1999–2000 than in 1992–93, once borrowing was taken into account, were undergraduates in the highest income quartile who attended either private not-for-profit 4-year research and doctoral institutions or public 2-year colleges. However, increased borrowing by low- and middle-income students at public 4-year institutions reduced the average net price they paid. These students paid less out of pocket in 1999–2000 than in 1992–93, but increased their loan debt.