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Affordability of highly selective colleges and universities II

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Discussion Paper No. 73

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Affordability of Highly Selective Private Colleges and Universities II

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Abstract

Using data for 2008/09, we update a 2001/02 study that examined the pricing policies with respect to family income at highly selective private colleges and universities and the distribution of students by family income at these schools. We find significant reductions in net prices relative to sticker prices and incomes across all income quintiles, as expected given financial aid policy changes at these schools in recent years. More interestingly, we find some increase in the share of low-income students at these schools, an increase on average from about 10% to 11% from the bottom 40% of the income distribution. We also find an increase in the share of the student body from the top income quintile receiving financial aid (from about 14.5% to 18% of the student body). The share of all students, aided and non-aided, from the top 20% of the income distribution has remained approximately constant during this period, suggesting that the increase in the share of aided students in this quintile has come from formerly unaided high income students.

I. Introduction

For a number of years many of the nation's wealthiest private colleges and universities – including the likes of Stanford and Amherst and Harvard and Wellesley – have practiced “need blind” admission and met the full need of matriculating students, believing that these policies level the playing field, making it possible for any high-ability student to attend regardless of his or her family's income: admissions decisions were made without consideration of family income and any admitted student who needed financial aid would get it. These policies reflected a genuine and acknowledged commitment to equality of opportunity.

In an earlier paper (Hill, Winston and Boyd, 2005), we reported on pricing policies with respect to family income at 28 highly selective private colleges and universities in 2001/02, and on the distribution of students by family income at these schools.¹ We found that lower income students were asked to pay a lower net price and a lower share of the full sticker price, but they paid a much higher share of their family incomes than did higher income students. We also discovered that only about 10% of the students at these schools came from the bottom 40% of the family income distribution in the United States. (About 70% came from the top 20% of the income distribution.)

Either of two explanations – or a combination – appeared: that these schools biased their admissions process, despite protestations to the contrary, against low-income students and in favor of high income students with the same qualifications or, alternatively, that a larger number of low-income high ability students simply do not exist – that everything from high school quality to the level of engagement of peers and parents had conspired to prevent low-income students from reaching the levels of ability needed for success, or even survival, at these

¹ The study used data for 28 of 31 colleges and universities, members of the Consortium on the Financing of Higher Education that includes: Amherst, Barnard, Brown, Bryn Mawr, Carleton, Columbia, Cornell, Dartmouth, Duke, Georgetown, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Mount Holyoke, Northwestern, Oberlin, Pomona, Princeton, Rice, Smith, Stanford, Swarthmore, Trinity, University of Chicago, University of Pennsylvania, University of Rochester, Washington University, Wellesley, Wesleyan, Williams and Yale. Three schools did not participate in the initial study, leaving us with data for 28 schools for 2001/02. 21 of the 28 schools in our study are need-blind in the admissions process. Those that are need sensitive still offer significant need based financial aid.

demanding schools. Another possibility is that low-income high ability students exist, but simply do not apply to these schools for any number of reasons.

In another paper (Hill and Winston, 2006) we used data from the SAT and ACT to examine these possibilities by looking at the distribution over family incomes of those students who scored at or above variously defined levels of “high ability” – students appropriate for these highly selective schools. We discovered that the national population of test takers had a somewhat higher share of low-income high ability students than found in these schools, using almost any measure of high ability: we determined that high ability low-income students were underrepresented at these schools by 28% or more, depending on how demanding a definition of high ability is used.²

But these studies preceded a significant number of changes in financial aid policies at these schools. Since 2001/02, pricing policies at many colleges and universities have changed significantly, particularly at these highly selective private institutions. Many of these selective institutions have reduced or eliminated loans in their financial aid packages, replacing them with increased grants. Some have gone further and reduced their net prices by more than this and also extended financial aid to families with higher incomes than in the past. Some of these policy changes have been targeted more specifically at lower income students and families, while others have been beneficial for all financial aid students. And, some have extended financial aid to families that previously would not have qualified for aid.

This paper, then, uses 2008/09 data similar to those of the original study to examine the current pricing policies at these schools and to see if these schools have moved closer to reflecting the national availability of high ability low-income students – to see how the income distribution of students in these selective private colleges and universities has changed. Using data for 2008/09, we replicate the 2001/02 study to see the implications of these changes on the net prices by income at these schools, as well as the distribution of students by family income. We know that

² A 28% underrepresentation results from using a definition of high ability of 1420 or above on the SAT (and ACT equivalent). If the definition of high ability is changed to 1300 or above, the share of low-income high ability students in the national population increases to 16% from 12.8% and the underrepresentation at these schools increases to 60%, given the 10% share of low-income students at the schools in this study.

net prices will have declined, since replacing loans with grant aid directly reduces net price. We were particularly interested to see if during this period there was also a reduction in the underrepresentation of high ability low-income students at these schools. We cannot say much about causation, because we know that schools adopted a variety of policy changes during this time period and applicant behavior may have changed as well. Without data on these other developments during this period, it is not possible to isolate the effects of net price changes alone on matriculation outcomes by income. Seeing what has happened to the distribution of students by income at these schools is nonetheless of interest and suggestive.

As expected, we find significant reductions in net prices relative to sticker prices and incomes across all income quintiles. We find some increase in the share of low-income students at these schools. We also find an increase in the share of higher income financial aid students. Across all of these schools, the share of students on financial aid increased, but most of this increase came from students in the top quintile of the income distribution. The share of all students, aided and non-aided, from the top 20% of the income distribution has remained approximately constant during this period, suggesting that the increase in the share of aided students in this quintile has come from formerly unaided high income students.

II. Recent Changes in Pricing and Need-Based Financial Aid

Since 2001/02, many selective colleges and universities reduced the loan burden of their students, replacing loans with grants in their financial aid packages. Some schools eliminated loans from all financial aid packages (Amherst, Pomona, Swarthmore, Williams, Columbia, Harvard, Princeton, Dartmouth, Stanford, Yale).³ Others eliminated loans for their lower income students (Wesleyan, Wellesley, Brown, MIT, University of Pennsylvania, Cornell, Duke, Northwestern, Rice, Washington University). Schools reduced their loan burdens in part because of concerns that loans might be discouraging talented low-income students from applying and matriculating. In addition, schools were worried that students who did matriculate might change

³ Williams and Dartmouth have since reversed their decision to eliminate loans for all financial aid students and instead have reintroduced loans for some higher income financial aid students.

their educational goals and career ambitions because of their obligation to service loan burdens upon graduation.⁴

In addition, several schools also changed their methodologies for calculating financial need, increasing the amount of financial aid offered at each level of income, so families who previously might not have qualified for financial aid became eligible with these policy changes. For example, in December 2007 Harvard announced that parents of financial aid recipients would be asked to contribute between 0 and 10% of their annual income. No contributions would be expected of families earning less than \$60,000. Families earning \$120,000 to \$180,000 would be asked to contribute 10% of their family income, while those earning between \$60,000 and \$120,000 would pay from zero to ten percent. In our 2001/02 study, financial aid students in the top income quintile were asked to pay on average 20% of quintile median income.⁵ Harvard's policy change significantly reduced this for these higher income families. Yale announced an almost identical policy in January of 2008. Several other schools adopted similar policies to increase aid at given income levels, and not just replace loans with grants within given financial aid awards.⁶

At the time when colleges and universities were making these decisions, financial market returns on endowments had been quite strong for several years and higher education institutions with large endowments were being pressured by the federal government to increase their use of their endowments. In early 2008, Senators Grassley and Baucus of the Senate Finance Committee contacted 136 colleges and universities with endowments in excess of \$500 million, requesting

⁴ See Avery and Hoxby (2004) for a discussion of the effects on student enrolment decisions of grants versus loans in financial aid packages.

⁵ In 2001/02, the lower bound and the quintile median income of the top quintile of the income distribution were \$91,701 and \$113,689 respectively. In 2008/09, the lower bound and the quintile median income of the top quintile were \$112,639 and \$173,847 respectively. Quintile bounds and quintile median income are reported for all quintiles for 2001/02 and 2008/09 in the appendix.

⁶ Packaging refers to the different ways in which a given financial aid award can be met with grant, loan and work expectation. While this mix affects net price, the sticker price minus grant aid, it does not affect the overall aid award. Many of the recent policy changes went beyond packaging and increased the aid award at each level of family income.

information about their financial aid policies and the use of their endowments.⁷ The concern about low-income student access and affordability, along with concerns about endowment spending policies at the wealthiest schools probably both played a role in the revised loan policies at these schools. Since then, of course, these schools have experienced a significant reduction in the values of these endowments as a result of the financial market returns in 2008 and 2009. Of interest will be the implications for financial aid policies of adjustments adopted by colleges and universities to the reductions in their endowment values. To date, financial aid has been protected in large part, although adjustments are continuing at most schools and the effects of the economy on family incomes have led to significant increases in financial aid budgets at many schools, above and beyond those expected from the financial aid policy changes adopted in the last few years.

III. Schools, Students and Data

Our 2001/02 study (Hill, Winston and Boyd, 2005) was based on data from the financial aid records of individual matriculated students at 28 highly selective colleges and universities.⁸ We reported averages of schools' net prices by family income quintile, comparing them to sticker price and to quintile median family income, as well as shares of students by income quintile, for the whole of the student population at the 28 schools and for the four school types separately: co-educational colleges, women's colleges, Ivy-League universities, non-Ivy universities.⁹ (As a condition for using the data, we cannot report individual school results.) These data for 2001/02 were submitted to us directly by the schools in the study. For 2008/09, we have similar data for 30 of the highly selective schools.¹⁰ We have anonymous admissions and financial aid records of

⁷ Letter from Senator Max Baucus and Senator Charles Grassley, U.S. Senate, Committee on Finance, January 25, 2008 to presidents of 136 colleges and universities.

⁸ In the 2001/02 study, we did not have data for Bryn Mawr, MIT, or Washington University.

⁹ Coeducational colleges: Amherst, Carleton, Oberlin, Pomona, Swarthmore, Trinity, Wesleyan, Williams; Women's colleges: Barnard, Bryn Mawr, Mount Holyoke, Smith, and Wellesley; Ivy League universities: Brown, Columbia, Cornell, Dartmouth, Harvard, University of Pennsylvania, Princeton, and Yale; Non-Ivy universities: University of Chicago, Duke, Georgetown, Johns Hopkins, MIT, Northwestern, Rice, Rochester, Stanford, and Washington University.

¹⁰ In the 2008/09 study, we did not have data for the University of Pennsylvania.

individual matriculated students in the freshman class. In total, we have data on 28,522 students, 48.8% of whom are receiving financial aid. In contrast to our earlier study, we only have data for the first year class. This creates some problems in comparing the 2001/02 results with the 2008/09 results, which we will return to below. Despite the limitations, we believe the data contain interesting information and allow some relevant comparisons.¹³

IV. Findings

Table 1 reports the average net price, the net price relative to the sticker price, and the net price relative to the quintile median income by income quintile and by school group for 2001/02 and 2008/09. All dollar figures are reported in constant 2007 dollars. The data are for full time students on campus, excluding international students. The 2001/02 data are for all four classes, freshman to seniors, while the 2008/09 data are for the freshman class. Between 2001/02 and 2008/09, at a time when sticker prices at the schools included in this study increased by about \$7,025 in constant 2007 dollars, the average net price paid by all aided students actually declined from \$19,334 for all four classes in 2001/02 to \$16,785 for incoming freshman in 2008/09. A decline in the dollar net price occurred for all four types of schools, although the magnitude of the change differed by type of institution. The Ivy League schools experienced the largest reduction (\$5,848), while non-Ivies experienced the smallest decline (\$435). Net prices as a share of the sticker price have also declined significantly since 2001/02 from 47% to 35% for all schools in the study. Again, the Ivies experienced the largest decline (18 percentage points) and the non-Ivy universities the lowest (9 percentage points). The average net price relative to quintile median income for all aided students for all schools declined from 25% to 16%. It declined for each of the school groups, by 6 to 15 percentage points, with the largest decline at the Ivies.

The effects of the changes in loan policies can be seen most strongly in the net prices of financial aid students in quintiles one and two. Average net prices (in constant 2007 dollars) decreased from \$9,093 to \$2,940 and from \$10,291 to \$3,915 for family income quintiles one and two

¹³ As in our earlier study, we only have net prices for students who have matriculated. We do not have data on all financial aid offers made by the colleges and universities during the admissions process, making it impossible for us to analyze this part of the decision process.

respectively for the colleges and universities over this period. As a share of the sticker price and of quintile median incomes, the changes were similar. The net price relative to the sticker price for quintile one fell from 22% in 2002-02 to 6% in 2008/09, and for quintile two from 25% in 2001/02 to 8% in 2008/09. Similarly, the net price relative to the quintile median income for these two quintiles went from 49% and 26% in 2001/02 to 17% and 10% respectively in 2008/09.

The direction of change is the same in all four types of schools. The largest declines in net prices in the lowest two quintiles by all measures were at the co-educational colleges and the Ivy League universities. The reductions in net price, net price as a share of sticker prices, and net price as a share of quintile median income are all statistically significant at the 1% level for quintiles one and two for each school grouping.¹⁴

While the largest changes in net prices occurred in the lowest income quintiles, the policy changes during this time period reduced the net prices paid by financial aid students in the third and fourth quintiles as well, in constant dollars. Even in the fifth quintile for the highest income financial aid students, the actual real increase in the net price was less than \$300. (It declined at the Ivy-League universities by \$3,500). As a share of the sticker price or the quintile median income, the net price declined in each of the income quintiles. The statistical significance of each of these changes is indicated on Table 1.

In summary, the changes in financial aid policies had significant effects on the net prices charged financial aid students at these selective colleges and universities in the expected direction.

One of the justifications for changes in loan policies was to encourage more high ability low-income students to apply to and matriculate at these schools. The share of students from the bottom two income quintiles has increased by about 1.2 percentage points or 12 percent (Table 1).¹⁵ In a previous study (Hill and Winston, 2006), we estimated that high ability low-income

¹⁴ Statistical significance is based on a one tail t-test.

¹⁵ Note that net prices declined in most of the quintiles. But, the lower price sensitivity of higher income students in their enrolment decisions (Avery and Hoxby (2004)) along with the larger net price reductions in the lower quintiles suggests that one might still expect an increase in the share of lower incomes students from the net price reductions.

students were underrepresented at these schools by at least 28 percent. The increase of 12 percent reported above suggests that a little over 40% of the gap was closed over this period. The lower the SAT score used to define high ability, of course, the larger the initial underrepresentation and therefore the remaining gap given recent changes.

Looking at the four groups of colleges and universities, those with the smaller shares of low-income students in 2001/02 experienced the largest increases over this period. The Ivy League schools had the lowest share of students from the bottom 40% of the income distribution in 2001/02 at 9.6%. Their share increased by 15% in 2008/09, to 11%. The Women's Colleges experienced the smallest increase (1%), but they started the decade with the highest share of students from the bottom two income quintiles (at 13.6%). The coed colleges and the non-Ivy league universities experienced increases of about 7 to 12%. The increase in shares coming from the bottom two quintiles are statistically significant at the 1% level for the Ivy League and non-Ivy universities.¹⁶ At the other end of the income distribution, the share of students in the fifth family income quintile receiving financial aid increased by 3.5 percentage points, or 24 percent, twice as much as the increase for the bottom 40% of the income distribution. The increase in the share of students in the fifth quintile is statistically significant at the 1% level for all groups except the co-ed colleges. Students from the top income quintile, including both financial aid and full pay students, accounted for 69.3 percent of all students in 2008/09 and 69.7 percent in 2001/02. The increase in aided students in the top quintile seems to have been matched by a reduction of full pay students from the top quintile over this time period. (It is not possible to determine whether these schools have matriculated a different mix of fifth quintile students, with a larger share receiving aid, or whether students that formerly would not have received financial aid awards are now doing so.) In our 2006 study, 46% of students scoring 1420 or above on the SAT (or ACT equivalent) came from the top quintile of the income distribution in the national population of test takers, while about 70% of students at the schools in 2001/02 (all four classes) and 2008/09 (freshman class) came from the top quintile of the income distribution. The women's colleges have the lowest share of students from the top quintile of the income

¹⁶ Statistical significance, based on a chi-square test, is indicated in Table 1.

distribution at 63% (including aided and unaided students), while about 70% of the students at each of the other three groups of schools come from the top income quintile.

V. Data Issues

There are several reasons why we need to be cautious in making comparisons between the 2001/02 results and those for 2008/09. First, in 2001/02, we had data for all four classes of students on each campus that year, but only 16 of the schools identified the class year of the students. For 2008/09, we have data only for the entering class. In addition, we have data for 28 schools in 2001/02 and 30 schools in 2008/09, but only 27 schools reported data in both years. In Table 1, we have reported the price and share results based on all the student records for all the schools for which we have data in each year, using all the available information to characterize the pricing strategies and the distribution of students by income at these schools in each year. In comparing the data over the two years, however, we know there are differences, both in the schools for which we have data and the schools for which we have freshman data in 2001/02. We have adopted several strategies to see to what extent this affects our comparisons over time of changes, and have concluded that our results remain substantially unchanged. One strategy is to determine the likely bias of looking at all four years of students in 2001/02 rather than just freshman. The second strategy is to restrict comparisons to the 15 schools for which we have freshman data in both years.

Turning to the first strategy, in comparing net prices, the issue is whether the net prices paid by the first year students are representative of those paid by sophomores, juniors and seniors that year. In the past, when almost all schools had loans as part of their financial aid packages, loans typically differed by class year because the federal loan limits differed by class year and therefore schools had different loan expectations as part of their self-help expectations by class year. In 2001/02, for instance, the loan expectation at Williams for freshman was \$2,600, while sophomores, juniors and seniors were expected to borrow up to \$3,200, \$4,100 and \$4,100 respectively. Job expectations also differed by class year, but by smaller amounts, usually less than \$200. Given this, grants and hence net prices for students in our study in 2001/02 would have differed by graduation class, and the net price paid by freshman would have understated that paid on average for all four classes. With lower loan and work expectations, a freshman

would have a lower net price than a student with similar levels of need in the other three classes. In our 2001/02 study, 16 of the 28 schools identified the graduation year in the individual student financial aid records, so we were able to recalculate net prices for these 16 schools and compare them to the net prices for all 28 schools. (See Table 2). The net prices for the subset of 16 schools resemble quite closely the net prices for all 28 schools, suggesting that these 16 schools are representative of the larger sample. They are higher on average by about \$1,000 because the co-ed colleges, which had lower net prices across the board in 2001/02, are underrepresented in the subset of 16 schools.¹⁷ In addition, we were able to calculate net prices for these 16 schools just for freshman. We find what we expected, that given differences in loan expectations by class year, net prices for first year students were less than net prices for all four years of students, freshman through seniors. This difference on average for the 16 schools was about \$1,500 to \$2,000 in the first four quintiles, and less than \$300 in the top quintile.

By 2008/09, however, ten of the thirty schools in our sample had adopted no loan policies for all financial aid students, so that net prices would not systematically differ by class year for this reason for these schools. An additional ten schools had adopted no loan policies for students from lower income families. Net prices would therefore not differ by class year for students from lower income levels. (Given the policies adopted and the income cutoffs, this would be true for students from the bottom two quintiles of the family income distribution and some students from the third quintile.) If work expectations differ by class year, thereby affecting grants, there still would be some bias from this source, but it would be small, as mentioned above. We expect that our estimates for the entering class in 2008/09 may still understate the average net price paid by all students that year, but not by as much as the difference between the net price for first year students and all students in our 2001/02 study. Given the normal self help expectations at these schools, it is highly unlikely that any differences between class years in self help expectations would be large enough to offset the reduction in net price observed for the entering class and result in a higher net price for all classes, compared to 2001/02. For example, Table 1 suggests that the net prices declined by about \$6,000 in quintiles 1 and 2, while Table 2

¹⁷ Only one co-ed college reported class year in 2001/02. We therefore cannot report results for the co-ed colleges in Table 2 when we are reporting on the subset of 16 schools.

suggests that the bias between freshman and all four year net prices in 2001/02 was about \$1,500. Given these differences in magnitude and the fact that loans were eliminated or significantly reduced by 2008/09 at 20 of the 30 schools, especially for students in the bottom two quintiles of the income distribution, we are confident in our conclusion that net prices have declined significantly. In addition, we have replicated Table 1 (see Table 1A in the appendix) for the 15 schools for which we have freshman data in both years. Repeating the test for the statistical significance of the reductions in net price for quintiles one and two, just using the first year students for the 15 schools, the results remain substantially unchanged.

When looking at shares of students by income quintile, we are again comparing the shares in the first year class in 2008/09 with the average for all four classes in 2001/02. The data show that the first year class in 2008/09 has a higher share of low-income students from the bottom 40 percent of the income distribution than the average of the four classes in 2001/02. As mentioned above, 16 schools identified the class year of the individual students in the 2001/02 data. We replicated the shares by income quintile for freshman in the 2001/02 data. (See Table 3.) We expected little difference by class year in shares, but if anything, we speculated that there might be a higher share of low-income students in the freshman class. This could have resulted from greater awareness of low-income student access issues at this time, with more recent classes having a greater number of low-income students, as well as the possibility that persistence varies by family income, with greater numbers of low-income students dropping out over time, resulting in lower shares of high ability low-income students in the upper classes. If the latter were the case, our data for 2008/09 will overstate the increase in low-income students compared to 2001/02 and our estimate may be on the high side, suggesting even less success at increasing the share of high ability low-income students at these schools.

Looking at the results for the 16 schools in 2001/02 for which we have class year, it appears that the share of high ability low-income students at these 16 schools is very similar to the shares for the 28 schools when looking at all four class years (freshman to seniors). As was the case for net prices, these 16 schools appear to be fairly representative of the larger group of 28 schools. When we look at the shares for freshman for the subset of 16 schools, they differ slightly from the share for all four classes, but not in the direction we were expecting. The share of first year

students from quintile one and quintile two are slightly lower than for all four years at these 16 schools. This suggests a slightly larger increase in 2008/09 over 2001/02 when just looking at freshman. However, the shortfall from the shares of high ability low-income students in the national data for 2008/09 remains unchanged. (The gap would just have been larger in 2001/02 for the freshman class compared to the gap for all four classes.)¹⁹ In addition, we report the shares of students by quintile for the 15 schools for which we have freshman data in both 2001/02 and 2008/09. (See Table 1A.) Repeating the test for statistical significance of the increase in shares of students for quintiles one and two, just using the first year students for the 15 schools, the results remain substantially unchanged.

V. The Influence of Schools' Wealth on Pricing Policies

Schools with the largest endowments per student were in the best position to replace loans with grants in their financial aid packages. Several of the wealthier schools also increased the level of aid at each income level, further reducing net prices. As a result, schools with higher levels of wealth, measured by endowment per student, reduced net prices to the lowest levels and have experienced the largest increases in shares of low-income students. Table 4 reports the distribution of net prices and students by family income for 2001/02 and 2008/09, with schools grouped by endowment per student, rather than by the type of college or university used above.²⁰ Net prices fell by about \$6,000 in quintiles one and two for the high endowment per student schools. They also fell in the middle and low endowment schools, but by slightly less. The

¹⁹ We have not updated our ACT/SAT study, so we do not know whether the national share of high ability low-income students has changed. We would expect this ratio to change only slowly over time.

²⁰ We ranked the schools by endowment per student in 2008/09 and divided them into three approximately equal groups. The rankings differ slightly, using 2001/02 endowment per students. Several schools move between the three categories. We use the 2008/09 rankings to group the schools in both years. The high endowment schools include Amherst, Harvard, MIT, Pomona, Princeton, Rice, Stanford, Swarthmore, Williams and Yale. The Middle endowment schools include Duke, Brown, Bryn Mawr, Chicago, Columbia, Dartmouth, Northwestern, Smith, Washington University, and Wellesley. The low endowment schools include Barnard, Carleton, Cornell, Georgetown, Johns Hopkins, Mount Holyoke, Oberlin, University of Pennsylvania, Rochester, Trinity, and Wesleyan. Endowment data (from NACUBO) and total undergraduate and graduate enrolments (from IPEDS) are used to calculate endowment per student. We recognize that endowment per student data for universities with graduate students may not adequately reflect the resources devoted to undergraduates. We are using the data to simply group the schools into three categories by wealth.

share of students from quintiles one and two increased by 30% for the high endowment schools, 15 % for the middle endowment schools and only 1% for the low endowment schools.²¹ While the low endowment schools experienced the smallest increase, they still had the highest share of students from quintiles 1 and 2, at slightly over 12%. The wealthier schools also experienced the larger increases in shares of aided students in the top income quintile. The net price for financial aid students in the top quintile of the income distribution at the wealthier schools actually decreased in constant dollars, while it increased at the middle and low endowment schools.²²

Many of these changes can be seen in Figures 1 and 2. In Figure 1, average net price as a share of family income for the five income quintiles of aided students along with the full pay students with income at the 95th percentile is shown for each of the three endowment per student groups of schools, for both 2001/02 and 2008/09. It is clearly the wealthier schools that on average give their poorest students the lowest prices relative to family incomes and the less wealthy schools that ask them to pay relatively the most. Figure 2 shows the distribution of students by quintile in both 2001/02 and 2008/09 by endowment per student.

We have data for both 2001/02 and 2008/09 for 27 schools. Sixteen of these schools experienced an increase in the share of students coming from the bottom two quintiles of the income distribution, eleven of which are statistically significant at the 1% to 10% level. Of these eleven, four are from the high endowment schools and five from the middle endowment schools. Seven of these 11 implemented major changes in their loan policies during this period. Six replaced all loans with grants, while one reduced or eliminated loans for lower income families. Three of these 27 schools experienced statistically significant reductions in the share of low-income students coming from the bottom two quintiles of the income distribution over this

²¹ Table 4A in the appendix reports the distribution of net prices and students by family income for 2008/09 and 2001/02 for freshman for the subset of 15 schools for which we have data by class year. The results are for the most part similar to those based on the full set of schools. The increase in share of students from Q1 and Q2 for the high endowment schools is lower and the increase for the middle endowment schools higher than in the larger sample of schools, however. In the 15 school sample, there are only two high endowment schools.

²² The statistical significance of the reductions in net price and changes in shares between 2008/09 and 2001/02 are indicated in Table 4. Table 4A reports the statistical significance of changes, restricting the data to the schools for which we have data for first year students in both years.

period. Of these 3 schools, 2 are in the low endowment per student group, and made no major changes in their loan policies during this period. In summary, the increase in the share of low-income students and the shift from loan to grant is positively associated with the endowment per student at these institutions.²³

Many of these schools clearly have allocated increased resources to financial aid in the form of grants. This is true at many of the schools for financial aid students at all levels of income, not just those with the lowest incomes. The level of wealth is clearly associated with these policy changes, with the lowest net prices and larger increases in shares of students on financial aid being found at the high endowment per student schools.²⁴

In our earlier study (2005), we also examined the relationship between schools' wealth and pricing policies and the share of low-income students in their student bodies. To say something about individual schools' pricing policies, we sought a measure that would both describe a school's overall pricing with respect to family income and allow meaningful comparison among schools. Our solution was to run a simple linear regression of each school's average net price over income ratios on median incomes over the five quintiles and the 95th percentile and treat the t-statistic on the income coefficient as an indicator – an index – of pricing policy. (See Hill, Winston and Boyd (2005) p. 779.) A slope that is not significantly different from zero describes a proportional pricing policy; a significantly negative slope describes a policy that reduces price as an income share with higher incomes and a significantly positive slope describes a policy with net price a rising share of income. Using this classification, 1 of the 30 schools in 2008/09 has a decreasing-share pricing policy, 12 do not differ significantly from proportional pricing, and 17 charge prices that represent increasing shares of income, all as reflected by single-tail t-tests at

²³ If we restrict the comparison to the 15 schools for which we have first year data in 2001/02 and 2008/09, the results are substantially unchanged. The two high endowment schools eliminated loans and experienced an increase in the share of students from quintiles one and two, one of which is statistically significant. Of the six middle endowment schools, three experienced a statistically significant increase in the share of low-income students, two of which reduced or eliminated loans. Of the seven low endowment schools, only one changed loan policies, and five of the seven saw either reductions or no change in their share of low income students in the freshman class.

²⁴ The women's colleges historically have had a higher share of low-income students, reflecting their applicant pool, despite being less well endowed on average.

the 95 percent level. This contrasts with our findings for 2001/02 where 7 of 28 schools had decreasing-share pricing policies; most did not differ from proportionality, and four charged prices that represented increasing shares of income. During this time period, there was a clear shift toward more progressive pricing structures at these schools.

To examine the relationship of these pricing policies and of the share of low-income students on institutional wealth, we run simple regressions of our index of pricing policy and of the share of low-income students on endowment per student. In our earlier study, we found that the wealthier schools had more progressive pricing policies but lower shares of low-income students. We speculated that the latter resulted from the relationship between schools' wealth and selectivity, and between applicants' academic qualifications and family incomes. For 2008/09 we continue to find a positive relationship between progressive pricing policies and wealth. In contrast to 2001/02, we no longer find a statistically significant negative relationship between the low-income share and wealth. This is consistent with the relatively larger increases in the share of low-income students at the wealthier schools in 2008/09.²⁵

VI. Conclusions

During this decade, net prices at these selective private colleges and universities have declined as a share of the sticker price and relative to quintile median family incomes. This has resulted from reductions in or the elimination of loans in financial aid packages at many of these schools, as well as from increases in the amount of aid (as opposed to its packaging) for any given income level. In addition, financial aid has been extended to families with higher incomes than previously at several schools. The reductions in net price have been large and have contributed to significant increases in financial aid expenditures at these schools over this time period. Our data suggest that financial aid expenditures have increased roughly 60% over this time period.²⁶

²⁵ Price index = $0.2 + 3.176E-06$ endowment per student, $R^2=.40$; Share of population in Quintiles 1 and 2 = $12.2 - 8.6E-07$ endowment per student, $R^2=.03$. We get similar results whether we use the t-statistic or coefficient for the slope as the index.

²⁶ We calculated financial aid expenditures as the average grant times the number of financial aid students by income quintile. This calculation includes all grant funding, not just that from institutional resources. Since we only have data for the financial aid spending on the freshman class in 2008/09, we have to estimate the expenditures on all four years of students. We use the data for 2001/02 for the schools that identified class year

By school grouping, for the schools for which we had data in both years, the Ivies increased their spending the most by 72%, the co-ed colleges by 41%, the women's colleges by 58% and the non-Ivy universities by 56%.²⁷

Our data suggest that the share of low-income students at these schools has increased, modestly overall but by greater amounts at the wealthier schools. The reductions in net price for students from the bottom 40% of the income distribution have been quite large. These results suggest that changes in net price are not sufficient to increase significantly the share of low-income students at these schools, and that increasing their share is not simple.²⁸ The data are not adequate to reach any conclusions on the causal relationship between the change in net price and the change in enrolment of low-income students. All schools reduced net prices for lower income students, but only some experienced increased shares of these students. Also, a variety of other changes were occurring during this period that could have affected lower income enrolment. For example, many schools that reduced net price also adopted a variety of other policy changes aimed at increasing low-income enrolments, including adopting special programs such as Posse and Questbridge and using current students and admissions officers to increase outreach to lower-income students and schools among others. In addition, admissions policies themselves may have changed, with greater preference given to low-income students in the admissions decision. (See Tebbs and Turner, 2006.) The demand on the part of these low-income students, as well as their academic qualifications relative to higher income students, may also have

to estimate the number of students receiving financial aid in the upper classes relative to the freshman class, as well as the size of the grant by income quintile by class to adjust the 2008/09 data. We believe this is a conservative estimate, because we know that the loan burden increased at most schools by class year in 2001/02, while twenty schools had eliminated loans for some or all students by 2008/09.

²⁷ If we simply use the freshman data for 2008/09 and multiply by four to estimate the total financial aid expenditure growth over the period, the estimated growth rates increase as expected. For all schools, the growth rate is 77%. Estimated financial aid expenditures increase by 56% at the co-ed colleges, 73% at the women's colleges, 93% at the Ivies, and 73% at the non-Ivies. This estimate probably overstates the growth rates. Our two estimates are reasonable lower and upper bounds on the actual growth rates over this period.

²⁸ Our earlier work (2005, 2006) discussed alternative explanations for why low income students are underrepresented at the selective colleges and universities. A variety of factors probably play a role, in addition to net price, such as information and preferences.

changed during this time period.²⁹ Our data do show that schools with the largest reductions in net price and the lowest levels of net price also experienced the largest increases in shares of low-income students, but the net price levels and changes may be proxying for an entire portfolio of policy changes all aimed at low-income enrolment. But our results do suggest that many of the colleges and universities in our sample significantly increased their spending on financial aid as a result of large decreases in net prices, and the increases in low-income enrolment were modest. If a goal is to increase low-income enrolment at these schools, additional policy changes may be needed.

Increases in the share of students on financial aid in the top quintile of the income distribution have also occurred at these schools. It does appear that the increase in the share of financial aid students in the top quintile has come from a reduction in unaided students and not from reductions in the share of aided students from the bottom 80% of the income distribution.

Many of these changes in financial aid policies were implemented before the financial crisis and economic recession of 2008/09, which have significantly reduced many schools' endowments while increasing the financial need of many of their students. Financial aid spending has increased at these schools as a result of both policy changes and increased need just at a time when resources from the endowment have declined.³⁰ How schools adjust to this will be very important to access and affordability. There will be tensions between maintaining increased grant aid for individual financial aid applicants and increased numbers of students receiving financial aid, as well as between overall financial aid spending and other spending priorities of the institutions. It would be unfortunate if the small increase in the share of low-income students at these schools is not sustained or is reversed as a result of current financial pressures. If recent changes in loan policies are maintained, sustaining the progress made on access at these schools will mean finding increased resources for financial aid just at a time when endowment resources have come under significant pressure.

²⁹ See Krueger, Rothstein, and Turner (2006) on possible changes in the qualifications of students going to college over time.

³⁰ In addition, the rate of tuition increases at these schools has moderated in response to the recession. There is also uncertainty about gift flows, with many schools experiencing less than originally projected annual giving.

Appendix

1) National family incomes

As in our 2001/02 study, we based the analysis on the distribution of pretax income of all U.S. families by quintiles as reported by the U.S. Census. The upper and lower bounds of those quintile ranges are taken from Census data

(<http://www.census.gov/hhes/income/histinc/fo1AR.html>). Extrapolation from those boundaries gave us estimates of the median income appropriate to each quintile.

(<http://www.census.gov/hhes/income/histinc/f23.html>). All intertemporal income comparisons were adjusted to 2007-2008 dollars, using the CPI-U-RS, Bureau of Labor Statistics. In order to include the whole of the student population in the analysis of pricing policies relative to family incomes, we assumed that family income at the lower bound of the 95th percentile was representative of unaided students who pay the full sticker price.

The quintile bounds and quintile median incomes in 2001/02 and 2008/09 in current dollars were:

2001/02

Income	Q1	Q2	Q3	Q4	Q5	95 th percentile
Lower Bound	-	\$24,001	\$41,001	\$61,379	\$91,701	\$160,250
Quintile Median	\$15,347	\$32,416	\$50,890	\$74,418	\$113,689	

2008/09

Income	Q1	Q2	Q3	Q4	Q5	95 th percentile
Lower Bound	-	\$27,685	\$49,510	\$75,001	\$112,639	\$197,216
Quintile Median	\$17,221	\$38,722	\$61,355	\$92,656	\$173,843	

2) Individual Financial Aid Records

In 2001-02, schools provided individual student unit records for all four classes directly to us. For 2008-09, we are using data submitted for the entering class. In 2001-02, we had 41,401 records of students that could be used in the calculation of net price and income relationships, for all four classes of students enrolled that year. For 2008-09, we are only using individual records for entering freshman. The early data, therefore, represent the average information on four classes. The more recent data only represent the first year class. When looking at the distribution of students by family income quintile, we believe that the data are still fairly comparable. The distribution for the freshman class represents how the college did in this area for 2008-09 entering students. While four years of data would perhaps reduce noise in the data, there is no particular reason to expect these data to differ systematically by year. (If lower income students were more likely to drop out over the four years, this would not be the case and the shares for the first year class would overstate the shares that would be expected for all four years. But, most of these schools have very high graduation rates and little correlation of dropout rates with income.) On net prices, there are more problems. Loan policies have historically differed by class year, with loan burdens lower for first year students. The calculated net prices for first year students would therefore understate the net price that all four years of students would on average face. But, the recent changes in loan policies have significantly changed this. Of the 30 schools for which we have data, 10 have eliminated loans for all students, making this no longer an issue. For these schools, the net prices paid by first year students would be representative of the net price paid by the upper classmen.

Family Income

Schools were asked to provide the family incomes on which their aid decisions were based. In our earlier study, some data problems arose over the recording of noncustodial income. In the data set to which we had access, this problem has been largely addressed, with noncustodial income being recorded if used in calculating the financial aid award.

Some family incomes were reported as zero, negative, or were simply left blank in the records. (In some cases, missing values were indicated by a particular number, for example -99999. In these cases, we identified them as missing.) If the income data were missing, but the student was determined to have received financial aid, we could not allocate them to an income quintile in

Table 1. They were counted in “total aided students” but were not assigned to a quintile. There were very few (10) negative incomes, having taken account of missing values. In the end, we left zero incomes and the 10 negative income records in the first quintile, replacing their negative income values with zero for calculations of averages. We know that families with zero incomes may create some problems for us. This is the case in both the 2001-02 and 2008-09 studies. The numbers are quite small (93 in total for all 30 schools.) These may overstate the share of quintile 1 students, but does so in both studies. We wanted to err in the direction of overstating low-income students at these schools, which was partly the reason for leaving these students in.

Net Prices

Net prices were calculated as a school’s published sticker price, less the grant aid awarded a student – so, the price he actually paid for a year of education. Grants include both institutional and outside grants. Schools were asked to report grants based on need, not “merit.” We suspect that some merit grants have entered the data. If a student is a financial aid student and has received an outside grant exceeding their need, we suspect the larger grant has been reported. In this case, absent the outside grant, the student’s net price would be higher. These situations are limited in the data, however. We left these grants in, since they reflected the actual net price paid by these students. Again, the numbers were very small.

REFERENCES:

- Christopher Avery and Caroline Hoxby, "Financial Aid Packages and Students' College Choices," in *College Choices*, Editors, The University of California Press, 2004.
- Christopher Avery, Caroline Hoxby, Clement Jackson, Kaitlin Burek, Glenn Poppe, and Mridula Raman. "Cost Should be No Barrier: An Evaluation of the First Year of Harvard's Financial Aid Initiative." NBER Working Paper 12029, 2006.
- Sandy Baum and Jennifer Ma, *Education Pays: The Benefits of Higher Education for Individuals and Society*, College Board, Trends in Higher Education Series, 2007.
- William G. Bowen, Martin Kurzweil, and Eugene M. Tobin, *Equity and Excellence in American Higher Education*, Charlottesville, VA.: University of Virginia Press, 2005.
- Anthony P. Carnevale and Stephen J. Rose, "Socioeconomic Status, Race/Ethnicity, and Selective College Admission," in *America's Untapped Resource: Low-Income Students in Higher Education*, edited by Richard D. Kahlenberg (New York: The Century Foundation, 2004).
- Catharine B. Hill, Gordon C. Winston, and Stephanie A. Boyd, "Affordability: Family Incomes and Net Prices At Highly Selective Private Colleges and Universities," *Journal of Human Resources*, Fall, 2005, vol. 40, no. 4.
- Catharine B. Hill, and Gordon C. Winston, "How Scarce Are High-Ability, Low-Income Students?" in Michael S. McPherson and Morton Owen Schapiro, eds., *College Access: Opportunity or Privilege?* New York; The College Board, 2006.
- Alan B. Krueger, Jesse Rothstein, and Sarah Turner, "Was Justice O'Connor Right? Race and Highly Selective College Admissions in 25 Years," in Michael S. McPherson and Morton Owen Schapiro, eds., *College Access: Opportunity or Privilege?* New York; The College Board, 2006.
- Jeffrey Tebbs, and Sarah Turner, "The Challenge of Improving the Representation of Low-Income Students at Flagship Universities: AccessUVa and the University of Virginia," in Michael S. McPherson and Morton Owen Schapiro, eds., *College Access: Opportunity or Privilege?* New York; The College Board, 2006.
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Table 1: The Distribution of Students and Net Prices by Family Income (2001/02 and 2008/09)
 The 2001-02 values here are based on data for all four undergraduate classes, and represent all 28 schools for which data were available.
 The 2008-09 values here are based on data for freshmen only, and represent all 30 schools for which data were available.

Share of Total Enrollment	Q1		Q2		Q1+Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COHHE Schools	4.68%	4.57%	5.48%	6.76%	10.16%	11.32%	7.41%	7.75%	11.12%	11.55%	14.60%	18.09%	44.87%	48.84%	55.13%	51.16%
	4.51%	4.47%	6.19%	6.96%	10.70%	11.42%	8.03%	7.52%	12.61%	10.99%	14.29%	15.20%	46.42%	45.23%	53.58%	54.77%
	6.17%	5.41%	7.44%	8.32%	13.61%	13.74%	8.72%	10.25%	11.66%	12.71%	10.25%	14.76%	46.27%	51.46%	53.72%	48.54%
	4.56%	4.53%	5.02%	6.45%	9.58%	10.98%	6.86%	7.52%	10.41%	11.39%	15.39%	21.47%	43.32%	51.40%	56.68%	48.60%
	4.55%	4.47%	5.30%	6.62%	9.85%	11.09%	7.51%	7.52%	11.34%	11.60%	14.74%	17.18%	45.76%	47.61%	54.24%	52.39%
Average Net Price (Inflation-adjusted)																
COHHE Schools	\$9,093	\$2,940	\$10,291	\$3,915	\$9,737	\$3,522	\$13,915	\$8,791	\$19,703	\$16,327	\$28,523	\$28,807	\$19,334	\$16,785	\$40,883	\$47,911
	\$6,606	\$1,329	\$8,765	\$3,810	\$7,869	\$2,840	\$12,490	\$10,070	\$18,372	\$16,605	\$27,377	\$28,567	\$17,730	\$16,059	\$40,204	\$48,206
	\$9,467	\$3,678	\$11,650	\$6,406	\$10,658	\$5,331	\$15,813	\$12,267	\$22,030	\$20,015	\$30,898	\$32,397	\$19,276	\$18,104	\$40,543	\$48,598
	\$9,835	\$855	\$11,077	\$1,101	\$10,487	\$1,000	\$14,319	\$4,842	\$19,865	\$12,201	\$28,835	\$25,333	\$20,067	\$14,219	\$41,536	\$47,521
	\$9,024	\$4,755	\$9,579	\$5,305	\$9,319	\$5,083	\$13,531	\$10,318	\$19,564	\$18,363	\$28,172	\$31,371	\$19,130	\$18,695	\$40,428	\$47,956
CPI Inflation factor for 2001/02: 1.204																
Net Price/Sticker Price																
COHHE Schools	22%	6%	25%	8%	24%	7%	34%	18%	48%	34%	70%	60%	47%	35%	100%	100%
	16%	3%	22%	8%	20%	6%	31%	21%	46%	35%	68%	59%	44%	33%	100%	100%
	23%	8%	29%	13%	26%	11%	39%	25%	54%	41%	76%	67%	47%	37%	100%	100%
	24%	2%	27%	2%	25%	2%	34%	10%	48%	26%	69%	53%	48%	30%	100%	100%
	22%	10%	24%	11%	23%	10%	34%	21%	49%	38%	70%	65%	48%	39%	100%	100%
Net Price/CMI																
COHHE Schools	49%	17%	26%	10%	37%	13%	23%	14%	22%	18%	21%	17%	25%	16%	21%	24%
	36%	8%	22%	10%	28%	9%	20%	16%	21%	18%	20%	16%	22%	15%	21%	24%
	51%	21%	30%	17%	40%	18%	26%	20%	25%	22%	23%	19%	29%	20%	21%	25%
	53%	5%	28%	3%	40%	4%	23%	8%	22%	13%	21%	15%	26%	11%	22%	24%
	49%	28%	25%	14%	36%	19%	22%	17%	22%	20%	21%	18%	25%	19%	21%	24%

Key to test results for significance of change from 2001-02 to 2008-09:

* Sig. at 0.10
 ** Sig. at 0.05
 *** Sig. at 0.01

Table 2: Average Net Price 2001/02 for 28 schools, and for 16 schools, freshman only
(2000 constant dollars)

	Q1	Q2	Q3	Q4	Q5	Average Q1 to Q5
<u>Average Net Price: 28 schools, all four classes</u>						
All Included schools	\$7,552	\$8,547	\$11,557	\$16,365	\$23,690	\$16,058
Co-Ed Colleges	\$5,487	\$7,280	\$10,374	\$15,259	\$22,738	\$14,726
Women's College	\$7,863	\$9,676	\$13,134	\$18,297	\$25,663	\$16,010
Ivy League Universities	\$8,169	\$9,200	\$11,893	\$16,499	\$23,949	\$16,667
Non-Ivy Universities	\$7,495	\$7,956	\$11,238	\$16,249	\$23,399	\$15,889
<u>Average Net Price: 16 schools, all four classes</u>						
All Included schools	\$8,517	\$9,577	\$12,315	\$17,058	\$24,473	\$16,908
Co-Ed Colleges	na	na	na	na	na	na
Women's College	\$8,282	\$9,776	\$13,311	\$18,536	\$26,066	\$16,597
Ivy League Universities	\$8,471	\$9,548	\$12,187	\$16,714	\$24,255	\$16,847
Non-Ivy Universities	\$8,661	\$9,481	\$12,249	\$17,227	\$24,628	\$17,133
<u>Average Net Price: 16 schools, freshman only</u>						
All Included schools	\$7,090	\$8,048	\$10,534	\$15,769	\$24,176	\$16,205
Co-Ed Colleges	na	na	na	na	na	na
Women's College	\$5,632	\$7,586	\$10,867	\$16,809	\$24,979	\$15,115
Ivy League Universities	\$6,602	\$8,252	\$10,307	\$15,279	\$23,739	\$15,744
Non-Ivy Universities	\$8,133	\$7,805	\$10,746	\$16,190	\$24,670	\$17,045

Note: Only one co-ed college reported class year. We have included them in the total, but do not report their individual results.

Table 3: Distribution of Students by Family Income 2001/02
28 schools, 16 schools, and 16 schools freshman only
Percent of total enrollment

	Q1	Q2	Q3	Q4	Q5	All Aided	Full Pay
Shares: 28 Schools, all four years							
All Included Schools	4.68%	5.48%	7.41%	11.12%	14.60%	44.87%	55.13%
Co-Ed Colleges	4.51%	6.19%	8.03%	12.61%	14.29%	46.42%	53.58%
Women's Colleges	6.17%	7.44%	8.72%	11.16%	10.26%	46.28%	53.72%
Ivy League Universities	4.56%	5.02%	6.86%	10.41%	15.39%	43.32%	56.68%
Non-Ivy Universities	4.55%	5.30%	7.51%	11.34%	14.74%	45.76%	54.24%
Shares: 16 schools, all four years							
All Included schools	4.38%	5.08%	6.94%	10.52%	13.87%	42.18%	57.82%
Women's College	6.02%	8.03%	9.29%	11.65%	12.07%	50.31%	49.69%
Ivy League Universities	4.29%	4.74%	6.50%	9.84%	14.01%	40.01%	59.99%
Non-Ivy Universities	4.21%	4.89%	6.92%	10.92%	14.05%	43.03%	56.97%
Shares: 16 schools, freshman only							
All Included schools	4.00%	5.11%	7.15%	11.01%	15.56%	44.76%	55.24%
Women's College	5.14%	7.64%	9.12%	11.42%	13.04%	49.39%	50.61%
Ivy League Universities	4.12%	4.97%	7.00%	10.56%	15.10%	42.38%	57.62%
Non-Ivy Universities	3.63%	4.62%	6.76%	11.24%	16.55%	46.17%	53.83%

Notes: Quintiles do not add to "All Aided" which includes other aided students who could not be assigned a quintile.
 Only one co-ed college reported class year. We have included them in the total, but do not report their individual results.

Table 4: The Distribution of Students and Net Prices by Family Income (2001/02 and 2008/09)

The 2001-02 values here are based on data for all four undergraduate classes, and represent all 28 schools for which data were available. The 2008-09 values here are based on data for freshmen only, and represent all 30 schools for which data were available.

Share of Total Enrollment	Q1		Q2		Q1+Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COFHE Schools	4.68%	4.57%	5.48%	6.76%	10.16%	11.32%	7.41%	7.75%	11.12%	11.55%	14.60%	18.09%	44.87%	48.84%	55.13%	51.16%
High Endowment	3.68%	4.49%	5.10%	6.97%	8.77%	11.45%	6.92%	7.86%	10.53%	12.06%	15.49%	21.66%	42.50%	53.23%	57.50%	46.77%
Middle Endowment	4.13%	4.14%	5.16%	6.53%	9.30%	10.66%	7.14%	7.37%	11.21%	11.72%	14.16%	18.04%	43.69%	47.93%	56.31%	52.07%
Low Endowment	5.86%	5.19%	6.02%	6.84%	11.88%	12.04%	7.99%	8.13%	11.46%	10.82%	14.32%	14.65%	47.57%	45.68%	52.43%	54.32%

Average Net Price (inflation-adjusted)

COFHE Schools	Q1		Q2		Q1+Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
High Endowment	\$9,093	\$2,940	\$10,291	\$3,915	\$9,737	\$3,522	\$13,915	\$8,791	\$19,703	\$16,327	\$28,523	\$28,807	\$19,334	\$16,785	\$40,883	\$47,911
Middle Endowment	\$4,022	-\$1,887	\$6,144	-\$641	\$5,264	-\$1,129	\$10,171	\$2,560	\$16,087	\$9,980	\$25,048	\$22,184	\$16,188	\$11,466	\$39,958	\$46,332
Low Endowment	\$8,647	\$3,205	\$10,599	\$4,931	\$9,719	\$4,261	\$14,208	\$10,158	\$20,486	\$18,493	\$29,848	\$32,311	\$20,108	\$19,249	\$41,399	\$48,305
	\$11,776	\$6,758	\$12,823	\$7,226	\$12,304	\$7,024	\$16,236	\$13,120	\$21,699	\$20,277	\$30,443	\$32,925	\$21,018	\$19,565	\$41,153	\$48,763

CPI inflation factor for 2001-02: 1.204

Net Price/Sticker Price

COFHE Schools	Q1		Q2		Q1+Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
High Endowment	22%	6%	25%	8%	24%	7%	34%	18%	48%	34%	70%	60%	47%	35%	100%	100%
Middle Endowment	10%	-4%	16%	-1%	13%	-2%	26%	6%	41%	22%	63%	48%	41%	25%	100%	100%
Low Endowment	21%	7%	26%	10%	24%	9%	34%	21%	50%	38%	72%	67%	49%	40%	100%	100%
	29%	14%	31%	15%	30%	14%	40%	27%	53%	42%	74%	68%	51%	40%	100%	100%

Net Price/OMI

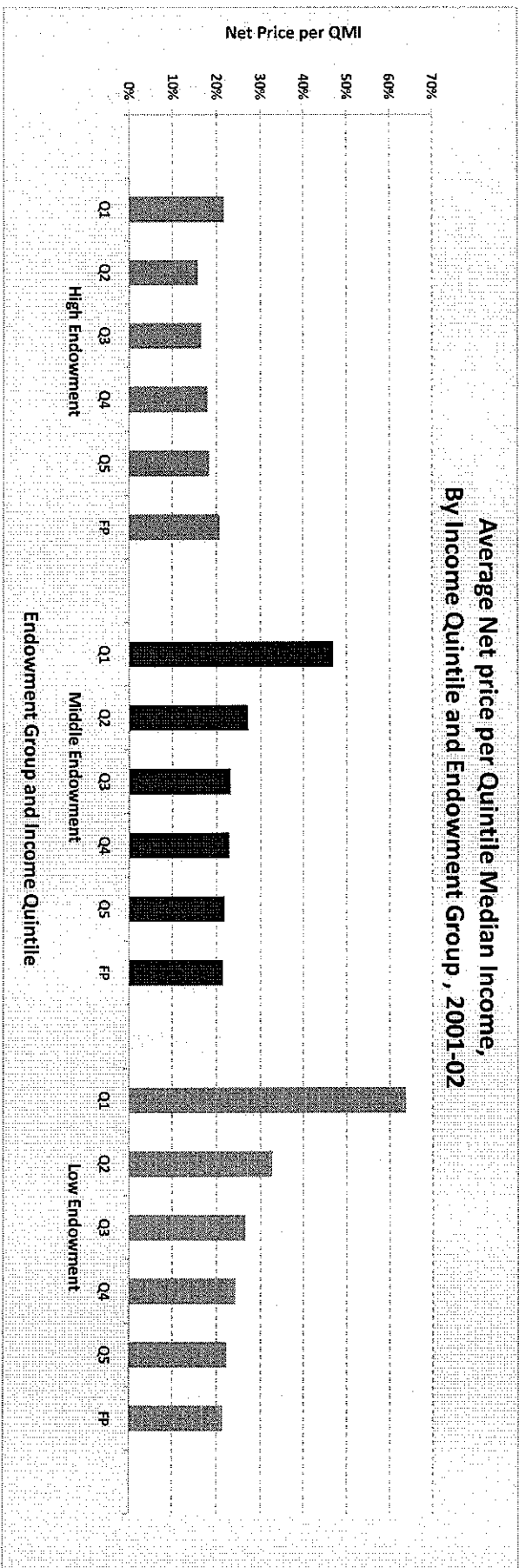
COFHE Schools	Q1		Q2		Q1+Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
High Endowment	49%	17%	26%	10%	37%	13%	23%	14%	22%	18%	21%	17%	25%	16%	21%	24%
Middle Endowment	22%	-1%	16%	-2%	18%	-5%	17%	4%	18%	11%	18%	13%	18%	7%	21%	23%
Low Endowment	47%	19%	27%	13%	36%	15%	23%	16%	23%	20%	22%	19%	26%	18%	21%	24%
	64%	39%	33%	19%	48%	28%	27%	21%	24%	22%	22%	19%	30%	22%	21%	25%

Key to test results for significance of change from 2001-02 to 2008-09:

- * Sig. at 0.10
- ** Sig. at 0.05
- *** Sig. at 0.01

Figure 1

Average Net price per Quintile Median Income,
By Income Quintile and Endowment Group, 2001-02



Average Net price per Quintile Median Income,
By Income Quintile and Endowment Group, 2008-09

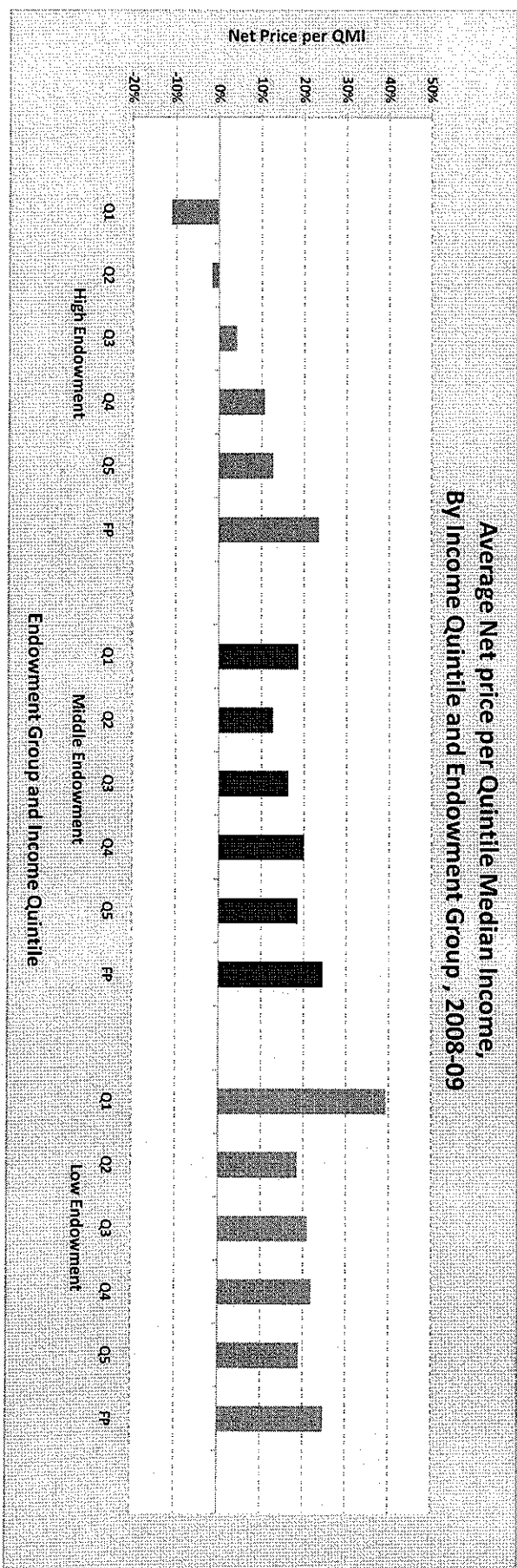


Figure 2

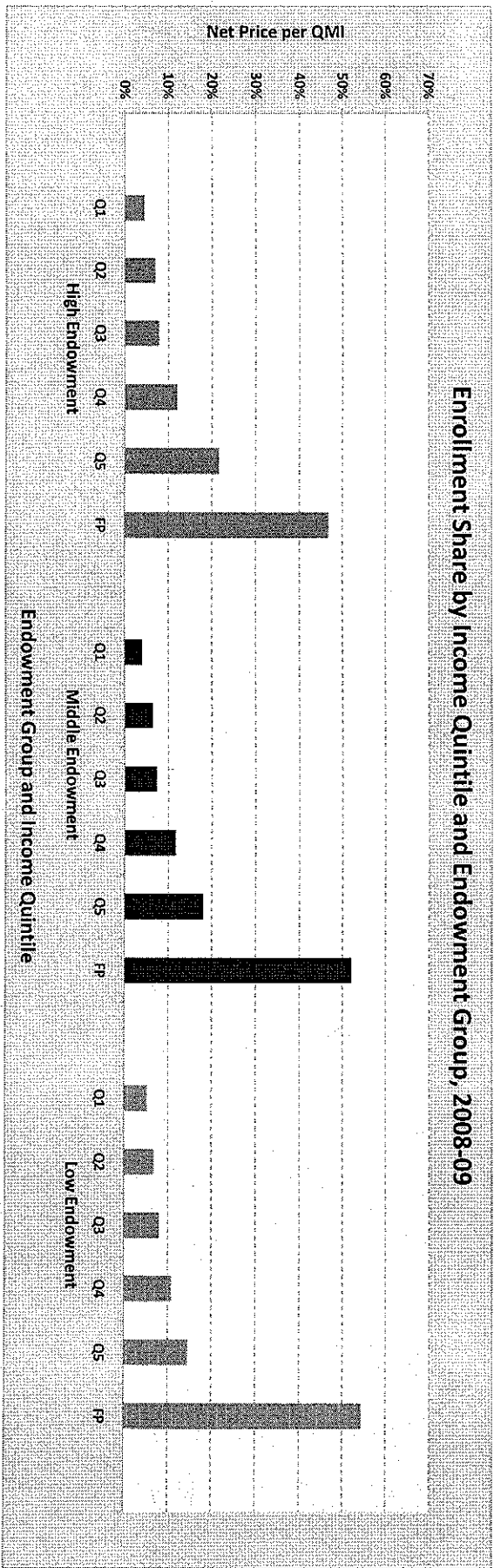
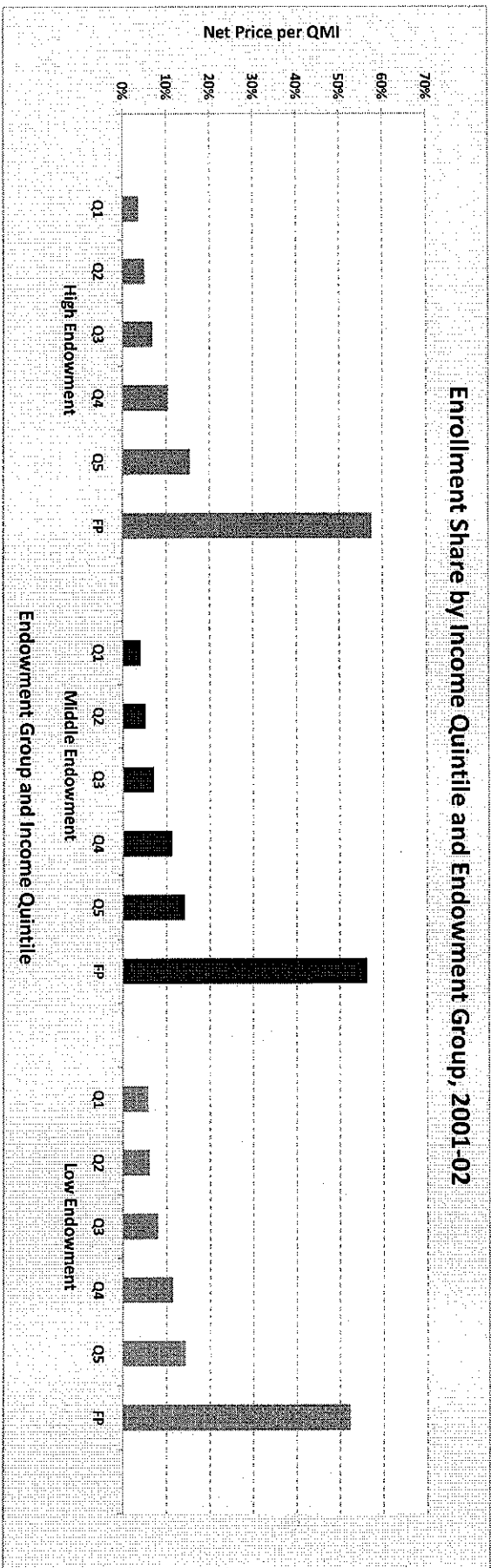


Table 1A: The Distribution of Students and Net Prices by Family Income (2001/02 and 2008/09)
 The 2001-02 and 2008-09 values are based on data for freshmen only
 for the 15 schools for which data were available in both years.

Share of Total Enrollment	Q1		Q2		Q1 + Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COHLE Schools	3.89%	4.55%	4.98%	6.56%	8.87%	11.11%	6.96%	8.09%	10.66%	11.76%	15.08%	18.38%	43.42%	49.42%	56.58%	50.58%
Women's Colleges	4.93%	5.93%	7.50%	7.38%	12.43%	13.31%	8.85%	10.87%	11.15%	12.65%	12.36%	13.37%	47.43%	50.20%	52.57%	49.80%
Ivy League Universities	3.96%	4.25%	4.80%	6.56%	8.76%	10.81%	6.76%	7.84%	10.05%	11.50%	14.35%	20.57%	40.50%	50.73%	59.50%	49.27%
Non-Ivy Universities	3.58%	4.57%	4.53%	6.51%	8.11%	11.08%	6.65%	7.71%	11.02%	11.72%	16.40%	17.35%	45.48%	48.01%	54.52%	51.99%

**Average Net Price
(inflation-adjusted)**

	Q1		Q2		Q1 + Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COHLE Schools	\$8,203	\$4,586	\$9,486	\$4,904	\$8,938	\$4,773	\$12,501	\$9,481	\$18,947	\$17,044	\$29,145	\$29,866	\$19,512	\$17,818	\$41,203	\$48,129
Women's Colleges	\$6,781	\$2,713	\$9,134	\$6,034	\$8,200	\$4,555	\$13,084	\$11,678	\$20,238	\$19,433	\$30,075	\$32,846	\$18,199	\$17,383	\$40,674	\$48,793
Ivy League Universities	\$6,879	\$1,572	\$9,507	\$1,505	\$8,381	\$1,531	\$11,905	\$4,867	\$18,154	\$12,153	\$28,539	\$25,452	\$18,855	\$14,156	\$41,500	\$47,490
Non-Ivy Universities	\$9,792	\$7,386	\$9,397	\$7,430	\$9,571	\$7,411	\$12,938	\$12,586	\$19,494	\$20,450	\$29,703	\$33,685	\$20,522	\$20,963	\$41,252	\$48,515

Net Price/Sticker Price

	Q1		Q2		Q1 + Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COHLE Schools	20%	9%	23%	10%	22%	10%	30%	20%	46%	35%	71%	62%	47%	37%	100%	100%
Women's Colleges	17%	6%	23%	12%	20%	9%	32%	24%	50%	40%	74%	68%	45%	36%	100%	100%
Ivy League Universities	16%	3%	23%	3%	20%	3%	29%	10%	44%	25%	69%	54%	45%	30%	100%	100%
Non-Ivy Universities	24%	15%	23%	15%	23%	15%	31%	26%	47%	42%	72%	69%	50%	43%	100%	100%

Net Price/DMI

	Q1		Q2		Q1 + Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)	
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09
COHLE Schools	44%	27%	24%	13%	33%	18%	20%	15%	21%	18%	21%	17%	24%	17%	21%	24%
Women's Colleges	37%	16%	23%	16%	29%	16%	21%	19%	23%	21%	22%	19%	24%	19%	21%	25%
Ivy League Universities	37%	9%	24%	4%	30%	6%	19%	8%	20%	13%	21%	15%	22%	11%	22%	24%
Non-Ivy Universities	53%	43%	24%	19%	37%	29%	21%	20%	22%	22%	22%	19%	25%	22%	21%	25%

CPI Inflation factor for 2001-2: 1.204
 * Sig. at 0.10
 ** Sig. at 0.05
 *** Sig. at 0.01

There was only one co-ed college in the 15, so this category is excluded.

Table 4A: The Distribution of Students and Net Prices by Family Income (2001/02 and 2008/09)
 The 2001-02 and 2008-09 values are based on data for freshmen only
 for the 15 schools for which data were available in both years.

Share of Total Enrollment	Q1		Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)		
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	
COFHE Schools	3.89%	4.55%	4.98%	6.56%	8.87%	11.11%	6.96%	8.09%	10.66%	11.76%	15.08%	18.38%	43.42%	49.42%	56.58%
High Endowment	2.70%	3.63%	5.07%	6.22%	7.77%	9.85%	6.99%	8.43%	11.06%	11.69%	16.72%	27.04%	42.55%	57.04%	57.45%
Middle Endowment	3.41%	4.17%	4.67%	6.46%	8.08%	10.63%	7.32%	7.64%	11.05%	12.20%	15.51%	18.46%	43.58%	49.09%	56.42%
Low Endowment	4.61%	5.33%	5.19%	6.79%	9.81%	12.12%	6.67%	8.45%	10.23%	11.32%	14.26%	14.95%	43.55%	46.86%	56.45%

Average Net Price (inflation-adjusted)	Q1		Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)		
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	
COFHE Schools	\$8,203	\$4,586	\$9,486	\$4,904	\$8,938	\$4,773	\$12,501	\$9,481	\$18,947	\$17,044	\$29,145	\$29,866	\$19,512	\$17,818	\$41,203
High Endowment	\$3,560	-\$2,971	\$7,716	-\$2,134	\$6,271	-\$2,443	\$9,676	-\$433	\$15,217	\$5,146	\$25,750	\$19,245	\$16,813	\$9,698	\$41,125
Middle Endowment	\$7,869	\$3,312	\$8,387	\$4,670	\$8,168	\$4,138	\$11,635	\$9,564	\$18,635	\$18,208	\$28,926	\$32,694	\$19,200	\$19,268	\$41,395
Low Endowment	\$9,540	\$7,664	\$11,122	\$7,630	\$10,402	\$7,645	\$14,545	\$13,204	\$20,743	\$20,387	\$30,845	\$33,406	\$20,869	\$19,949	\$41,016

CPI inflation factor for 2001-02: 1.204

Net Price/Sticker Price	Q1		Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)		
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	
COFHE Schools	20%	9%	23%	10%	22%	10%	30%	20%	46%	35%	71%	62%	47%	37%	100%
High Endowment	9%	-6%	19%	-5%	15%	-5%	24%	-1%	37%	11%	63%	41%	41%	21%	100%
Middle Endowment	19%	7%	20%	10%	20%	9%	28%	20%	45%	38%	70%	68%	47%	40%	100%
Low Endowment	23%	16%	27%	16%	25%	16%	36%	27%	51%	42%	75%	69%	51%	41%	100%

Net Price/QMI	Q1		Q2		Q3		Q4		Q5		All Aided Students		Full Pay (95th Percentile)		
	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	01-02	08-09	
COFHE Schools	44%	27%	24%	13%	33%	18%	20%	15%	21%	18%	21%	17%	24%	17%	24%
High Endowment	19%	-17%	20%	-6%	20%	-10%	16%	-1%	17%	6%	19%	11%	18%	5%	21%
Middle Endowment	43%	19%	21%	12%	30%	15%	19%	15%	21%	20%	21%	19%	22%	18%	21%
Low Endowment	52%	45%	28%	20%	39%	31%	24%	21%	23%	22%	23%	19%	27%	23%	25%

Key to test results for significance of change from 2001-02 to 2008-09:
 * Sig. at 0.10
 ** Sig. at 0.05
 *** Sig. at 0.01