

## Supply and Demand in the Higher Education Market: College Admission and College Choice

Michael Hurwitz  
The College Board

Amal Kumar  
The College Board

### Summary

- Over the decade spanning 2002 through 2012, college application volume increased across the college selectivity spectrum. In fact, over this period, the Most Competitive colleges (Barron's category 1) and the colleges classified by Barron's as Competitive (Barron's category 4) both experienced an 81% increase in first-time, first-year, degree-seeking applications.
- The admission rates decreased in all Barron's competitiveness categories between 2002 and 2012. The steepest decrease was found among the Most Competitive colleges, where the admission rate decreased from 31% to 22%.
- The yield rate decreased between 2002 and 2012. Less selective colleges tended to experience sharper dips in yield over this period than did more selective colleges. The yield rate fell from 52% in 2002 to 34% in 2012 at colleges in the Less Competitive Barron's category.

As more of our high school graduates pursue higher education, greater attention has been paid to the college application, admission, and enrollment processes across the nation's postsecondary institutions. Media coverage of these processes has become remarkably commonplace, and countless books and manuals have been published with the intention of helping students navigate the transition between high school and college. Either explicitly or implicitly, much of the narrative surrounding college choice references an environment in which competition for admission is rapidly escalating, ultimately adding to this process a degree of uncertainty that simply did not exist a generation or two ago.

The nation's most selective colleges are often the centerpiece of the discussion surrounding college choice, and trends in college selectivity are relayed through stories of plunging admission rates at a few high-profile postsecondary institutions and anecdotes of model high school students unable to secure seats at these colleges. Such stories make for ideal attention-grabbing headlines and probably generate more panic than they should for students, parents, and others actively engaged in helping prospective college-goers to seek out and attend appropriately matched colleges. The information provided through these

## Supply and Demand in the Higher Education Market: College Admission and College Choice

newspaper and magazine articles, books, and blogs fall short in that they present to consumers only pieces of the story, not a holistic national perspective of how the student demand for college has changed along with postsecondary responses to these changes. Experiences of individual students or institutions may or may not be representative of national trends.

In this brief and the companion brief, *Supply and Demand in the Higher Education Market: College Enrollment* (Kumar & Hurwitz, 2015), we depart from the traditional manner of relaying trends in college applications, admission, and enrollment by taking a step back and considering patterns over time for the universe of U.S. 4-year postsecondary institutions with competitive admission processes, rather than small and possibly unrepresentative subsets of them. This wide-lens approach is possible through the aggregation and analysis of data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), Western Interstate Commission for Higher Education (WICHE), as well as the College Board's own data.

This brief begins by documenting trends in application volume, admission, and enrollment across all of the nation's selective 4-year postsecondary institutions. We disaggregate these trends by level of selectivity to call attention to the occasionally contrasting patterns that occur across selectivity

categories. We offer corroboration that college admission rates are indeed declining and that the decline has continued in recent years even after the annual count of new U.S. high school graduates has peaked. Colleges have responded to the heightened demand by growing their first-year cohorts, although the rate of enrollment expansion has not kept pace with the sharper increases in application volume.

As application volume to the nation's 4-year institutions swelled, so did the published tuition and fees (or sticker price). However, the net price — what students actually pay after receipt of grant aid and tax benefits — rose much more modestly over the decade spanning 2002 through 2012 for the typical public 4-year college enrollee and actually declined slightly for the typical private nonprofit 4-year enrollee (Baum & Ma, 2014). We dedicate the final section of this brief to disaggregating trends in application volume by changes in published tuition and fees. The selection of sticker price rather than net price in these analyses is motivated by data quality and the fact that cost-conscious prospective applicants may lean heavily on such sticker prices when deciding whether or not to apply. This over-reliance may have faded since the amendment of the Higher Education Act of 1965, which requires all Title IV colleges to provide online net price calculators as of October 2011.

Except at the nation's most competitive colleges, changes in sticker price were

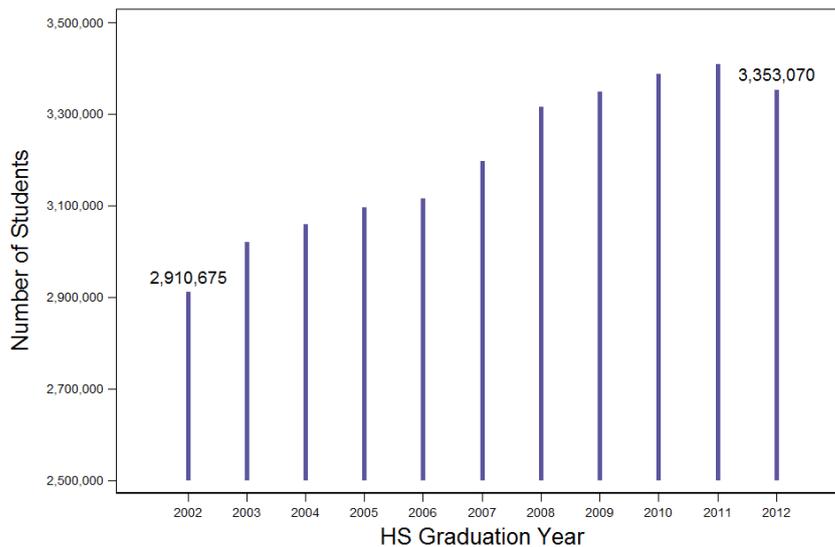
positively associated with changes in application volume between 2002 and 2012. That is, colleges that raised tuition and fees by the greatest amount also experienced the largest surges in application volume. The descriptive analyses in this brief lack the sophistication to draw causal inferences about this paradoxical relationship. Perhaps colleges enjoying periods of popularity among prospective students felt empowered to raise tuition and fees by larger-than-average amounts. In the absence of such price escalation, this group of colleges might have experienced even larger increases in application volume. Although disentangling the many complex factors that link student demand for a particular college and its pricing structure is outside of this brief's scope, our analyses confirm that recent college price increases have not dampened the demand for enrollment at the nation's competitive 4-year colleges.

Situating the national trends in college application and admission volume requires documenting recent changes in the college pipeline of high school graduates. Projections and actual data on the volume of U.S. high school graduates, collected from WICHE, indicate a steady climb in the number of high school graduates from about 2.9 million in 2002 to 3.4 million in 2011 (Figure 1). After reaching this high watermark, the annual number of high school graduates began to decline but is expected to remain above 3.2 million per year for the foreseeable future.

### Barron's Category Definitions

- *Most Competitive:* These colleges typically accept fewer than 33% of applicants. The typical enrollee is in the top 10%–20% of her class and has SAT® scores of 655 or higher on the individual sections of the exam.
- *Highly Competitive:* These colleges tend to accept less than half but more than one-third of applicants. Enrolled students tend to come from the top 20%–35% of their high school graduating classes and have SAT scores between 624 and 655 on the individual sections of the SAT.
- *Very Competitive:* Colleges in this category tend to accept less than two-thirds of applicants, and the typical enrollee was in the top half of her high school class. Average SAT scores among these colleges are in the high 500s and low 600s on each section.
- *Competitive:* Colleges in this category tend to accept between three-quarters and 85% of applicants, and enrolled students tend to score in the 500s on each section of the SAT.
- *Less Competitive:* These colleges accept more than 85% of applicants, and enrolled students tend to score below 500 on each section of the SAT.

**Figure 1:** Estimated number of public and private high school graduates, by year



Source: Authors' calculations based on data from the Private School Survey and Prescott & Bransberger (2012).

## College Applications

Between 2002 and 2012, the annual number of applications submitted by first-time, first-year degree-seeking students increased across the college selectivity spectrum. All Barron's categories experienced a net increase in application volume over this period. The biggest net increase occurred among the more than 600 colleges in the *Competitive* category that collectively experienced a net increase of 1.4 million applications for first-time first-year admission in degree-seeking programs over the decade spanning 2002 through 2012 (Figure 2a). This translates into an increase of more than 2,200 applicants at the average college in this category over this decade.

Compared to colleges in the *Competitive* category, the roughly 80 colleges that constitute the *Most Competitive* category experienced a considerably smaller net increase in application volume between 2002 to 2012 of about 572,000. On a per-college basis, however, the net increases in the *Most Competitive* category were considerably larger than those occurring in the *Competitive* category. The typical *Competitive* college received about 7,100 more applications in 2012 than in 2002.

Figure 2b shows the percent growth in the number of first-time, first-year applicants to degree-seeking programs, where the value on the *y*-axis represents the ratio of the applications in the *x*-axis

year to the number submitted in the 2002 admission cycle. Despite the common perception otherwise, it is not true that application growth, in percentage terms, has been much larger among colleges in the *Most Competitive* category, compared to colleges in other categories. Between 2002 and 2012, application volume among colleges in the *Most Competitive* category increased by 81% — an estimate identical to the percentage growth that occurred in the *Competitive* category. Colleges in the *Very Competitive* and *Highly Competitive* categories experienced similar growth rates to one another, 67% and 69%, respectively.

Despite the leveling off of the number of U.S. high school graduates between 2008 and 2011 and a decline between 2011 and 2012, college application volume increased steadily over this period. From the existing data sources, it is not possible to determine whether this continued upward trend in applications is driven by larger shares of U.S. high school graduates applying to Barron's classified colleges, the tendency of U.S. high school graduates to submit more college applications, greater numbers of applications from non-traditional students, an influx of applications from abroad, or possibly a combination of all of these forces. Whatever the main driver of this recent climb in application volume, its effects were felt across all Barron's selectivity categories.

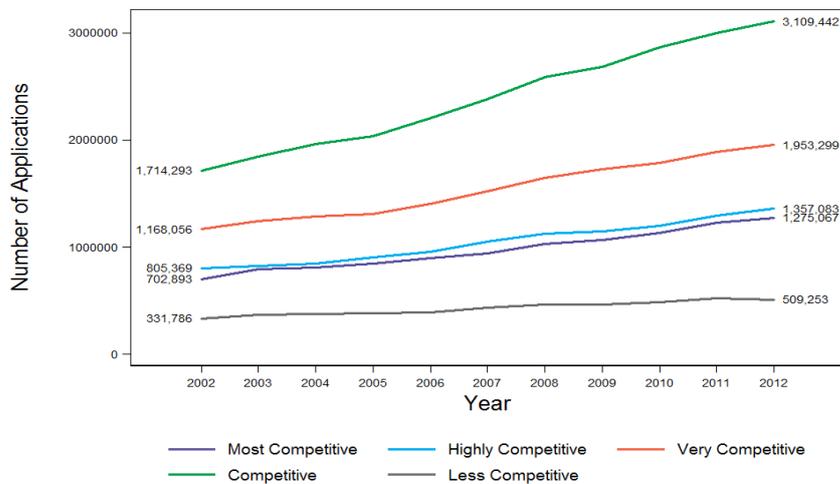
## College Admission

Over the decade spanning 2002 through 2012, the increases in the number of admission offers failed to keep up with the increases in application volume. As a result, the probability of securing admission to any given institution dipped. For example, colleges in the *Competitive* Barron's category experienced a net increase of approximately 1.4 million applications over the decade spanning 2002 through 2012 (Figure 2a). However, over this time period, the number of admission offers awarded by these colleges increased by only 747,000 (Figure 3a). By contrast, the *Most Competitive* Barron's category only increased their offers of admission by 55,000 over this time period. This increase in admission offers is less than 10% as large as the increase in application volume of 572,000 in this sector.

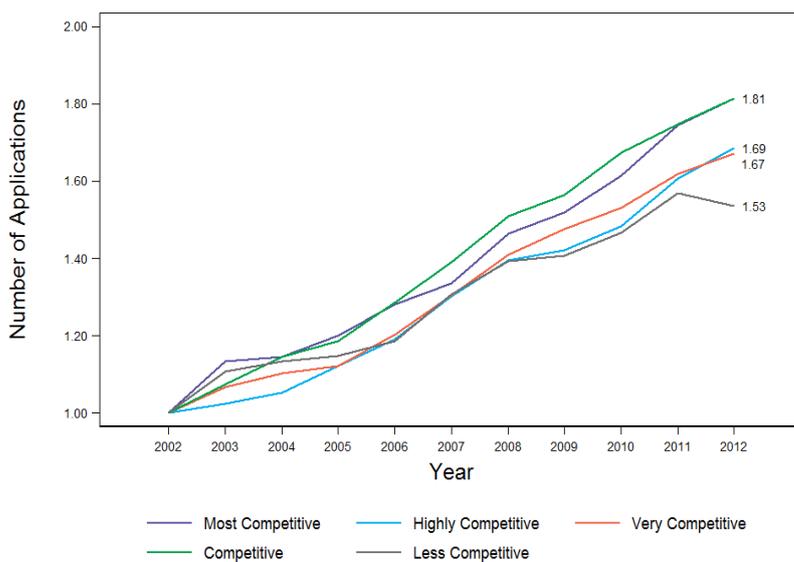
With the exception of the Barron's category containing *Less Competitive* colleges, the percentage increases in the number of admission offers over the period spanning 2002 to 2012 were inversely related to college selectivity (Figure 3b). For example, at the *Most Competitive* colleges, the number of admission offers increased by 25% between 2002 and 2012. *Very Competitive* and *Competitive* colleges awarded 55% and 63% more offers of admission in 2012 than in 2002, respectively. Admission offers among the group of *Less Competitive* colleges increased by 40% over this period.

# Supply and Demand in the Higher Education Market: College Admission and College Choice

**Figure 2a:** Total number of applications, by Barron's category

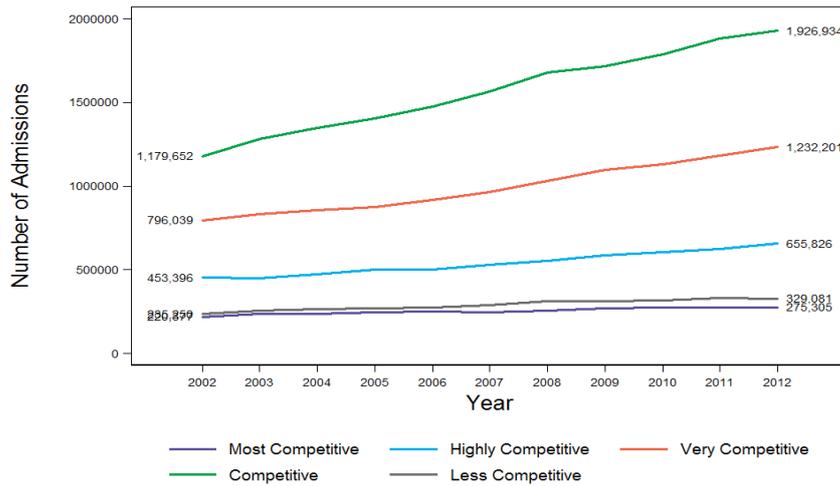


**Figure 2b:** Growth in number of applications (normalized), by Barron's category

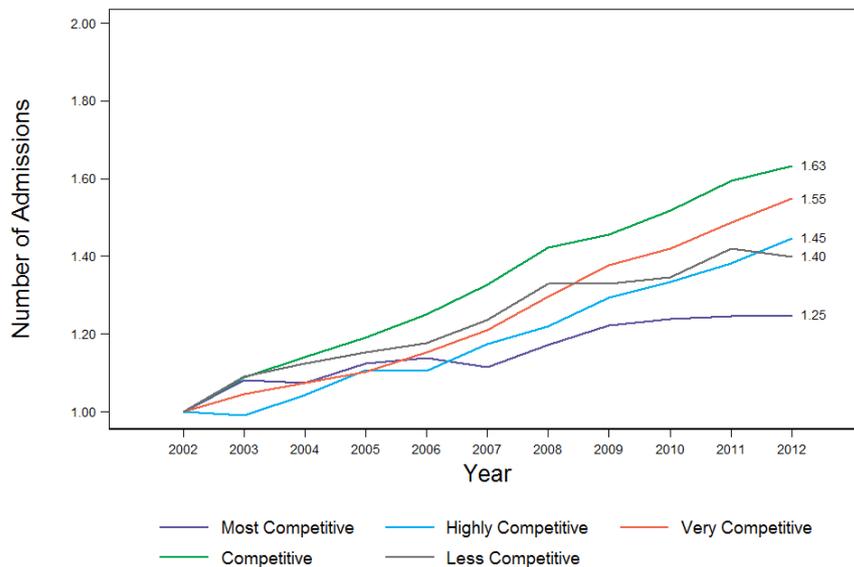


Source: IPEDS Annual Surveys, *Barron's Profiles of American Colleges* (2008). Most Competitive  $N = 81$ , Highly Competitive  $N = 189$ , Very Competitive  $N = 463$ , Competitive  $N = 657$ , Less Competitive  $N = 178$ .

**Figure 3a:** Total number of admissions, by Barron's category



**Figure 3b:** Growth in number of admissions (normalized), by Barron's category



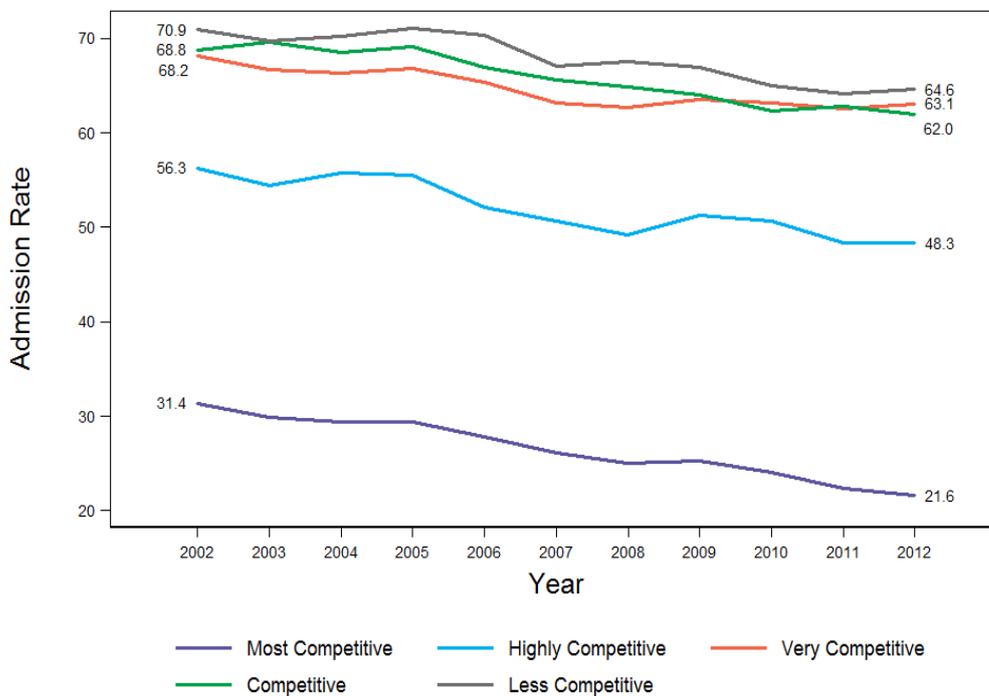
Source: IPEDS Annual Surveys, *Barron's Profiles of American Colleges* (2008). Most Competitive  $N = 81$ , Highly Competitive  $N = 189$ , Very Competitive  $N = 463$ , Competitive  $N = 657$ , Less Competitive  $N = 178$ .

## Applications Granted Admission

Figure 4 combines data from Figures 2 and 3 and shows the time trend in the fraction of applications resulting in admission between 2002 and 2012. Colleges are classified into Barron's categories by their admission rates and by the academic characteristics of the incoming students, so naturally more competitive colleges have lower admission rates.

In 2002, approximately 31% of applications submitted to the *Most Competitive* Barron's colleges were accepted, while the corresponding figure stood at 56% among the *Highly Competitive* colleges. Admission rates were fairly similar in 2002 between the sets of *Very Competitive* (68%), *Competitive* (69%), and *Less Competitive* (71%) colleges.

**Figure 4:** Share of applications granted admission, by Barron's category



Source: IPEDS Annual Surveys, *Barron's Profiles of American Colleges* (2008). Most Competitive  $N = 81$ , Highly Competitive  $N = 189$ , Very Competitive  $N = 463$ , Competitive  $N = 657$ , Less Competitive  $N = 178$ .

Between 2002 and 2012, declines in admission rates were slightly steeper among the colleges in the *Most Competitive* and *Highly Competitive* categories than in other Barron's selectivity groupings. The percentage of applications admitted fell from 31% in 2002 to 22% in 2012 among colleges in the *Most Competitive* category. More applications than not were accepted among the *Highly Competitive* colleges in 2002. However, over the decade spanning 2002 through 2012, the admission rate among these colleges fell from 56% to 48%. By 2012, the percentage of applications admitted fell to 63% in the *Very Competitive* category, 62% in the *Competitive* category, and 65% in the *Less Competitive* category.

## College Enrollment

Figure 5a demonstrates that there was growth in the enrollment of first-time, degree-seeking enrollees across all Barron's competitiveness categories between 2002 and 2012 except for the *Less Competitive* colleges. That this particular group of colleges failed to post any enrollment gains is surprising because colleges in this category are generally thought to have the capacity to increase enrollment with the greatest ease. Colleges in the *Most Competitive* category, which are typically considered the most capacity constrained, increased

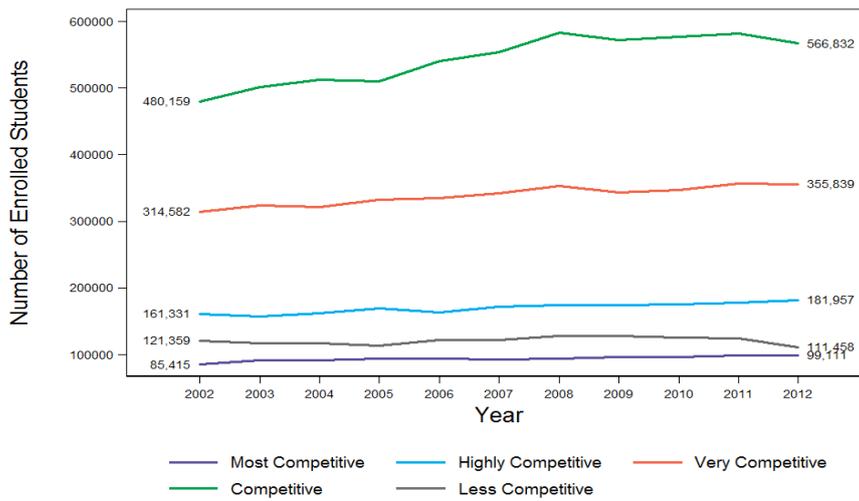
the number of first-time, first-year, degree-seeking enrollees by nearly 13,700 students between 2002 and 2012. This means that the typical college in this category increased the enrollment of its first-year cohort by about 170 students over this time period.

Colleges in the *Competitive* category are responsible for the greatest increase in first-time, first-year, degree-seeking students over the decade spanning 2002 through 2012. The more than 600 colleges in this category added nearly 87,000 such students over this time period. On a per-college basis, this increase of 140 students per college was actually slightly smaller than that observed among colleges in the *Most Competitive* category. The per-college increase in the first-time, first-year, degree-seeking students at *Competitive* colleges was also smaller than that observed among the *Highly Competitive* colleges, which added about 210 students per college between 2002 and 2012.

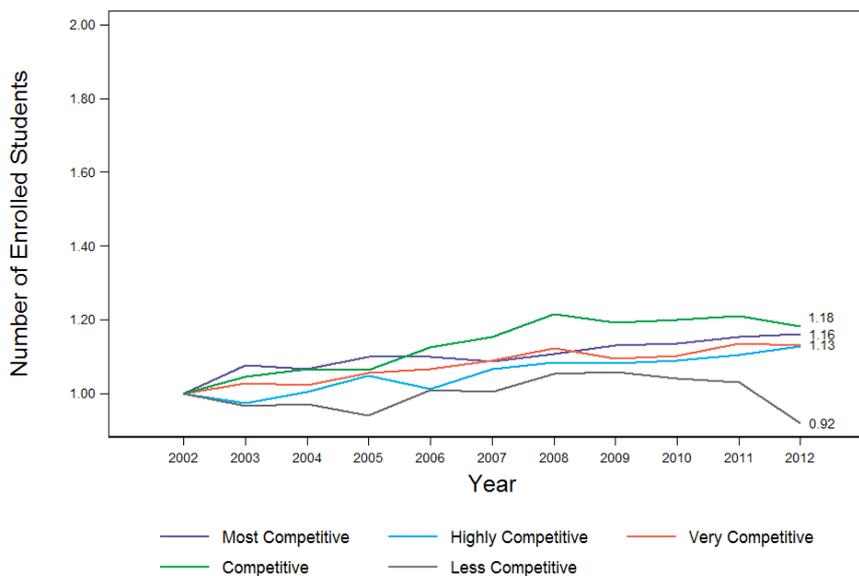
The percentage growth in enrollment, as shown in Figure 5b, indicates trends among the top four Barron's categories that closely parallel each other. Between 2002 and 2012, the percentage growth in first-time, degree-seeking students ranged from about 13% in the *Highly Competitive* and *Very Competitive* colleges to 18% among colleges in the *Competitive* category.

# Supply and Demand in the Higher Education Market: College Admission and College Choice

**Figure 5a:** Total number of enrolled students, by Barron's category



**Figure 5b:** Growth in number of enrolled students (normalized), by Barron's category



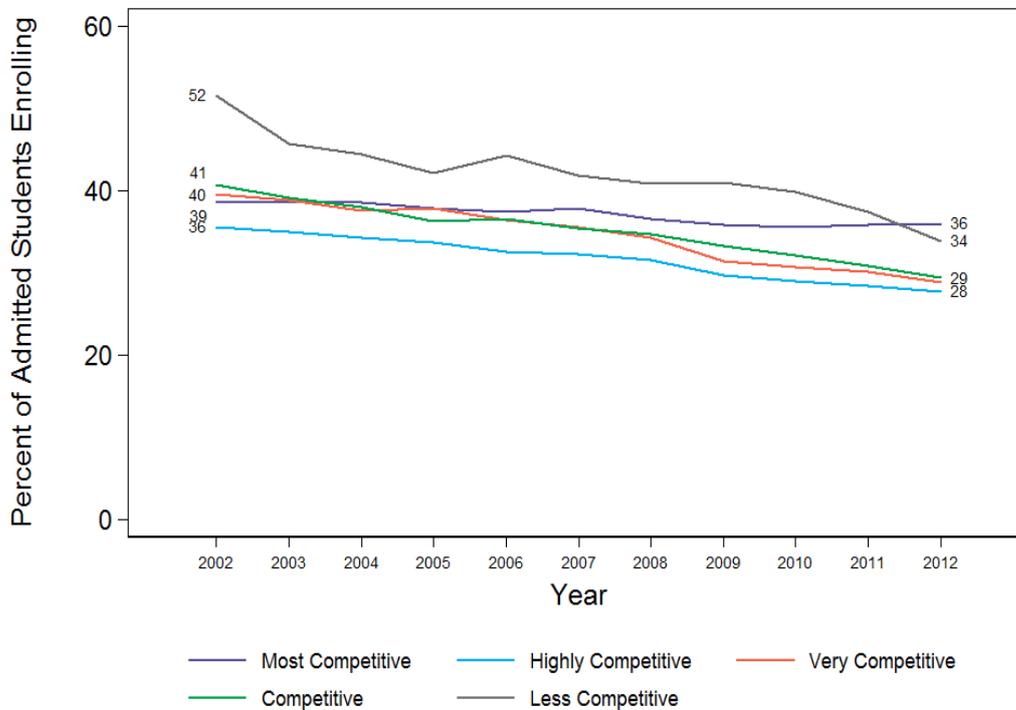
Source: IPEDS Annual Surveys, *Barron's Profiles of American Colleges* (2008). Most Competitive  $N = 81$ , Highly Competitive  $N = 189$ , Very Competitive  $N = 463$ , Competitive  $N = 657$ , Less Competitive  $N = 178$ .

### Yield Rates

Figure 6 presents the trends in the yield on admission offers. This metric represents the fraction of admission offers that translate into enrollment. Over the period from 2002 through 2012, colleges across the Barron’s competitiveness spectrum experienced declines in student yield. This finding is consistent with previous research by the National Association for College Admission Counseling (NACAC) documenting an expansion of college

application portfolios among the typical college applicant (Clinedinst, Hurley, & Hawkins, 2014). With more college applications submitted, the probability that a student will attend any particular college among her menu of choices declines. The result for colleges is a decrease in yield. Over the period from 2002 through 2012, colleges in the less competitive Barron’s categories experienced sharper declines in yield than did colleges in the more competitive Barron’s categories.

**Figure 6:** Percent of admitted students enrolling, by Barron’s category



Source: IPEDS Annual Surveys, *Barron’s Profiles of American Colleges* (2008). Most Competitive *N* = 81, Highly Competitive *N* = 189, Very Competitive *N* = 463, Competitive *N* = 657, Less Competitive *N* = 178.

In 2002, colleges in the *Less Competitive* Barron's category, on average, boasted higher student yields than did colleges in all other Barron's categories. The 52% yield on first-time, first-year, degree-seeking students among these colleges in 2002 fell by about 18 percentage points to 34% in 2012. The colleges in the *Competitive* category experienced a 12 percentage point decrease in yield on first-time, first-year, degree-seeking applicants between 2002 (when these colleges faced a yield of 41%) and 2012 (when

these colleges faced a yield of 29%). Among colleges in the *Most Competitive* Barron's category, the yield fell from 39% in 2002 to 36% in 2009, where it has remained since.

### Admission and Tuition

Figure 7 shows the changes in application volume among first-time, first-year, degree-seeking students, by quartile of changes in published tuition and fees (sticker prices) between 2002 and 2012 in constant 2012 dollars.

**Figure 7:** Growth in number of applications (normalized), by Barron's category and published tuition and fees quartile

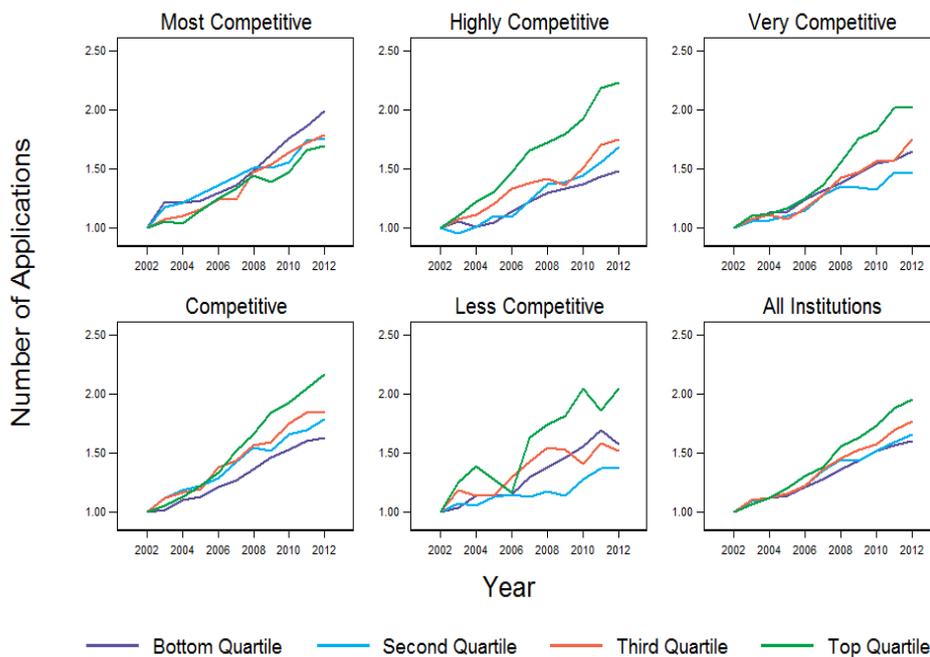


Figure 7 shows that applicants over this period were undeterred by climbing sticker prices, and that colleges increasing prices by the largest amount between 2002 and 2012 actually experienced the steepest growth in application volume. Among Barron's colleges in the top five competitiveness categories, those in the lowest quartile of tuition and fees increases, where the sticker price rose by \$2,963 or less between 2002 and 2012, experienced a 59% increase in applications. Colleges in the top quartile of sticker price changes, which increased tuition and fees by more than \$8,091 between 2002 and 2012, experienced a 95% increase in applications.

Tempting as it may be to conclude from these data that price is an insignificant factor in the college search process, such a generalization cannot be drawn for several reasons. First, the provision of grant aid means that the actual tuition and fees that students pay are less than the published price. In fact, the upward trend in sticker prices belies the actual trend in net tuition and fees, which typically rose at a much slower rate than published tuition and fees (Baum & Ma, 2014). Second, colleges experiencing the greatest surge in student interest may have responded to increased demand by raising prices. Finally, the overall picture is blurred by the grouping

together of colleges across all five Barron's competitiveness categories.

To confront this last issue, we disaggregate colleges by Barron's competitiveness category and separately estimate percentage growth in applications for each quartile of changes in tuition and fees for each category. These panels, also presented in Figure 7, tell two separate stories. Among the colleges in the *Most Competitive* category, those that increased sticker prices by the lowest amount experienced the largest growth in application volume. For example, *Most Competitive* colleges in the lowest quartile of tuition and fee growth (<\$7,900) experienced a 99% growth in application volume between 2002 and 2012. By contrast, those *Most Competitive* colleges in the highest quartile of tuition and fee growth (>\$10,500) experienced a 69% increase in application volume. Within the four other Barron's competitiveness categories, colleges increasing tuition and fees by the greatest amounts saw steeper positive changes in application volume, compared to colleges that experienced the most modest increases in tuition and fees during the decade ending in 2012. Explaining this paradoxical finding is outside of the scope of this research brief, and it remains unclear whether such differences will persist in the long run.

## **Bibliography**

Baum, S., & Ma, J. (2014). *Trends in College Pricing*. New York: The College Board.

Clinedinst, M., Hurley, S., & Hawkins, D. (2014). *State of College Admission 2013*. National Association for College Admission Counseling.

Kumar, A., & Hurwitz, M. (2015). *Supply and Demand in the Higher Education Market: College Enrollment*. New York: The College Board.

Prescott, B., & Bransberger, P. (2012). *Knocking at the College Door: Projections of High School Graduates*. Boulder, CO: Western Interstate Commission for Higher Education.

## **Technical Note**

There are small variations in the number of colleges included in the sample analyses in any given year due to failure to report data to IPEDS. However, the magnitude of this variation is likely insufficient to meaningfully alter any of the trends noted in this document.

### About the Authors

Michael Hurwitz is a policy research scientist at the College Board. He can be reached at [mhurwitz@collegeboard.org](mailto:mhurwitz@collegeboard.org).

Amal Kumar is a senior policy research analyst at the College Board. He can be reached at [amkumar@collegeboard.org](mailto:amkumar@collegeboard.org).

### About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT<sup>®</sup> and the Advanced Placement Program<sup>®</sup>. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools. For further information, visit [www.collegeboard.org](http://www.collegeboard.org).

© 2015 The College Board. College Board, Advanced Placement Program, SAT, and the acorn logo are registered trademarks of the College Board. All other products and services may be trademarks of their respective owners. Visit the College Board on the Web: [www.collegeboard.org](http://www.collegeboard.org).

15b-10318a