

Making Sense of a Looking Glass World

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"I weep for you," the Walrus said.

"I deeply sympathize."

With sobs and tears he sorted out

Those of the largest size.

Holding his pocket handkerchief

Before his streaming eyes.

Excerpt From: Lewis Carroll, "Through the Looking-Glass" iBooks.

<https://itun.es/us/uKSzx.1>

As the Walrus in Lewis Carroll's *Through the Looking Glass* knows, it is the sorting out that matters most. And in colleges and universities, just as in oysters, those of the largest size and most prestige will almost certainly insist on being grouped together, no matter what the consequences. Working with the support of the Bill & Melinda Gates Foundation we have set for ourselves the task of doing just that—using data drawn from the U.S. Department of Education's *Integrated Postsecondary Education Data System* (IPEDS) to sort American colleges and universities into recognizable clusters or segments that facilitate the making of comparisons within groups of similar institutions. No less, we seek a set of indices or measures that document the performance of these institutions in terms of access and completions. And to accomplish this latter task, we seek a reasonable means of describing each institution's undergraduate student body along four gauges of diversity: economic, race and ethnicity, age, and geography.

A Taxonomic Challenge

Though not an overly familiar term when applied to higher education, taxonomies for sorting American colleges and universities abound—and have done so for more than a century.

Probably the most recognized higher education taxonomies are those that define athletic conferences as organized under the auspices of the National Collegiate Athletic Association (NCAA), which bundles member institutions into three separate divisions comprised, for the most part, of individual athletic conferences. Division I contains all the major players: the Big 10 (though there are in fact now 12 members), Atlantic Coast Conference (ACC), South East Conference (SEC), Pacific-12 Conference (PAC-12), and the iconic Ivy League (though its formal designation is the Ivy Group). Divisions II and III are similarly organized with multiple conferences of long-standing and substantial traditions.

Organizational taxonomies of American higher education date back to the late 19th century with the founding of the National Association of State Universities and Land-Grant Colleges (NASULGC) which was itself a product of a 1963 merger of the American Association of Land-Grant Colleges and Universities and the National Association of State Universities. In 2009, that organization renamed itself the Association of Public and Land-Grant Universities. The Association of American Universities (AAU) was founded in 1900 to advance the international standing of U.S. research universities and focus “on issues that are important to research-intensive universities, such as funding for research, research policy issues, and graduate and undergraduate education.” From its founding, the AAU has been something of a super club of major research universities that has kept its membership small and selective. In 1915, as if American higher education required a counterpoise to AAU’s claims of research sovereignty, 179 institutions, almost exclusively smaller liberal arts colleges, banded together to found the Association of American Colleges. Eighty years later a much-enlarged Association would rebrand itself as the American Association of Colleges and Universities (AAC&U) to more accurately reflect a membership of more than 1,300 institutions, including public and private

colleges, community colleges, research universities, and comprehensive universities of every type and size. The fourth of these organizations representing a particular type of institution was founded in 1920, with a membership comprised of public and independent junior or two-year colleges. Here the Federal government played a role as the founding meeting of the American Association of Junior Colleges (AAJC) was convened by the U.S. Commissioner of Education, who thought it important that there be a forum which drew together the nation's two-year institutions. The history of the AAJC reflects the history of this sector of higher education over most of the last ninety years. In 1972, the organization became the American Association of Community and Junior Colleges (AACJC), and then in 1992 the American Association of Community Colleges (AACC), with this most recent change reflecting the fact that the private two-year junior college had all but disappeared from the American landscape.

Attempting to focus more attention on the small colleges across America, the Council of Independent Colleges (CIC) was founded in 1956. Its mantra became "small by design," suggesting that CIC members understood their mission to be to prove the resilience of an idea in an era of mass higher education. But CIC, like AAC before it, found that survival as an organization ultimately required more members and looser selection criteria. Where CIC was once proudly all about small, private, liberal arts colleges, today those eligible for CIC membership include all small and mid-sized private liberal arts colleges and universities in the U.S., as well as those located outside the U.S. Two-year independent institutions and nonprofit organizations that support the purposes of independent higher education are also eligible to be members of CIC. Complementing these secular groupings of like-minded institutions are a host of religiously affiliated colleges. The Association of Catholic Colleges and Universities was founded in 1899, and today's membership includes more than 90 percent of accredited Catholic

institutions of higher learning in the United States, plus approximately two dozen international universities. The current organization for southern Baptist colleges, the Southern Association of Southern Baptist Colleges, dates its founding back to 1948; the Association of Methodist Schools, Colleges, and Universities dates back to 1991; the Association of Presbyterian Colleges and Universities comprises the 60 private colleges and universities that have an historic relationship to the Presbyterian Church (USA). Even Quaker institutions have an organization: the Friends Association for Higher Education, founded in 1977. Complementing these religious groupings are a variety of more cross-cutting organizations that focus on a specific population of students. The best known among this classification of institutions are the Women's College Coalition founded in 1972, the National Association for Equal Opportunity in Higher Education (NAFEO) founded in 1969 to represent the nation's public and private Historically Black Colleges and Universities and Predominantly Black Institutions, and the Hispanic Association of Colleges and Universities (HACU) established in 1986 to represent Hispanic-serving colleges and universities. From this perspective the taxonomy of American colleges and universities appears to be decidedly tribal—a gaggle of similarly organized, sharply focused organizations in pursuit of parochial purposes.

The Search for a More Comprehensive Classification Scheme

By the middle of the last century, the often parochial nature of these groupings had spawned two major attempts to develop a classification system that was more inclusive, while at the same time taking note of the basic diversity of American higher education. The first was a classification of institutions using just two variables: whether an institution was public or private (not for profit) which, in the language of the resulting classification scheme became the variable

denoting institutional control; and the nature of the institution in terms of the degrees it provided and the prescribed length of time it took a student to earn those degrees. The resulting classification further separated institutions into three basic groups: two-year institutions, four-year institutions, and institutions offering graduate degrees and advanced professional degrees. Fifty years ago a basic introduction to U.S. higher education would likely begin by explaining the landscape in terms of a symmetrical classification based on institutional control and principal degree (Figure 1).

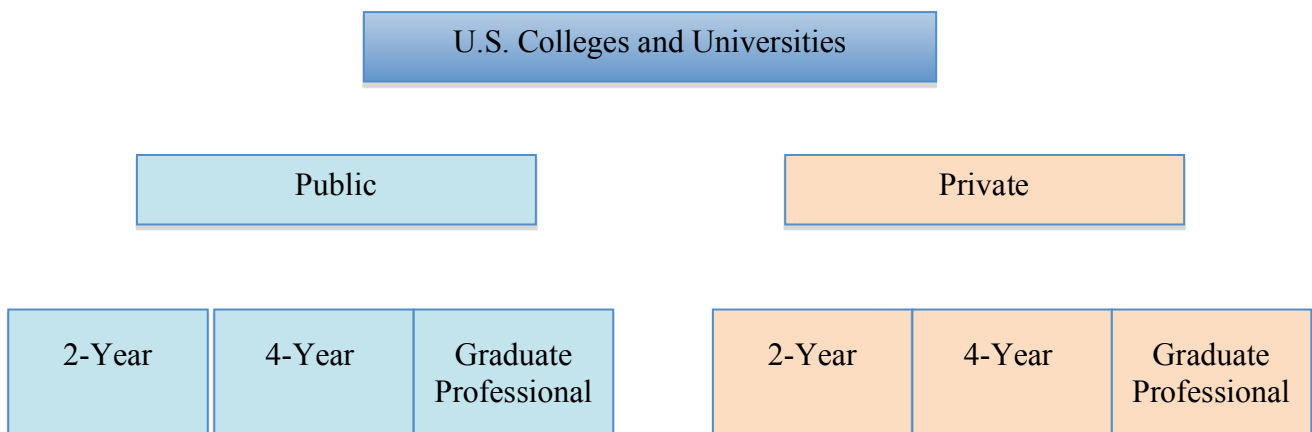


Figure 1. Classification of U.S. higher education institutions based on control and degree level

Occasionally this rather simple taxonomy would be given a slightly more complex caste by the introduction of an extra term in the public landscape—the idea of the Land-Grant public university playing the role of a state flagship, though, as it quickly became clear, in some states more than one institution might lay claim to being a flagship as in Michigan (the University of Michigan and Michigan State University), Indiana (Indiana University and Purdue University) and California (the University of California Berkeley and UCLA).

About the same time that this control/principal degree classification began introducing students and policy makers to the current structure of U.S. higher education, the Carnegie Commission on Higher Education developed an alternative, more robust way of categorizing the nation's system of higher education. In almost purposeful understatement, the Commission allowed how it hoped its classification would prove “helpful to many individuals and organizations that are engaged in research on higher education.” What came to be known as The Carnegie Classification and Carnegie Categories reflected the interests and experiences of California's Clark Kerr and the 1960 California Master Plan for Higher Education, whose development he was largely responsible for. What the Carnegie Classification added to the political taxonomy then holding sway across U.S. higher education was a keen sense of mission differentiation.

The First Carnegie Classification (1971)

1. Doctoral-Granting Institutions
 - Heavy emphasis on research
 - Moderate emphasis on research
 - Moderate emphasis on doctoral programs
 - Limited emphasis on doctoral programs
2. Comprehensive Colleges
 - Comprehensive colleges I
 - Comprehensive colleges II
3. Liberal Arts Colleges
 - Liberal arts colleges—Selectivity I
 - Liberal arts colleges—Selectivity II
4. All Two-Year Colleges and Institutes
5. Professional Schools and Other Specialized Institutions
 - Theological seminaries, bible colleges, and other institutions offering degrees in religion
 - Medical schools and medical centers
 - Other separate health professional schools
 - Schools of engineering and technology
 - Schools of business and management

- Schools of art, music, and design, etc.
- Schools of law
- Teachers colleges
- Other specialized institutions

For the next three decades, the Carnegie Classifications, often used in conjunction with the political taxonomy based on institutional control and principal degree, provided a ready structure for comparing and contrasting different groups and groupings of institutions. It was also a taxonomy that changed only slightly over time. The revised form, published in 2000 and the one still listed as part of IPEDS, used only slightly different labels to sharpen the distinctions first introduced in 1971.

- Doctoral/Research Universities-Extensive
- Doctoral/Research Universities-Intensive
- Master's Colleges and Universities I
- Master's Colleges and Universities II
- Baccalaureate Colleges-Liberal Arts Baccalaureate Colleges-General
- Baccalaureate/Associate's Colleges
- Associate's Colleges
- Specialized Institutions

Kerr's goals for the Carnegie Classifications had been more than satisfied. He had sought and the Commission had delivered a taxonomy that made extensive use of available institutional data to yield groupings "relatively homogeneous with respect to the functions of the institutions as well as with respect to characteristics of students and faculty members." Thirty-five years later, Alexander McCormick, one of Kerr's successors as the designer of an effective Carnegie Classification scheme, would sum up that achievement by noting that:

Institutions were grouped according to what they did and who taught whom. Operationally, this was achieved by looking at empirical data on the type and number of degrees awarded, federal research funding, curricular specialization, and (for undergraduate colleges only) admissions selectivity and the preparation of future PhD

recipients. (Alexander C. McCormick and Chun-Mei Zhao, “Rethinking and Reframing the Carnegie Classification,” *Change*, September/October 2005, pp 51-2.)

By 2005, however, time and circumstance had eroded the broad acceptance of Kerr’s original scheme and the parallel political taxonomy that grouped colleges and universities in terms of their institutional control (public vs. private) and principal degree (two-year, four-year, or graduate professional). The world, it turned out, had grown both more complex and competitively quarrelsome. In the old scheme there was no room for a burgeoning sector of for-profit providers that was already accounting for upwards of 10 percent of all postsecondary enrollments. Public four-year colleges had all but disappeared as nearly every institution on that side of the taxonomy wanted to known as a university. The fact that, in growing numbers, public two-year colleges were beginning to offer baccalaureate degrees was similarly not accounted for. At the same time, private two-year institutions—the original junior colleges that once flourished nearly everywhere—had either closed or morphed into four-year institutions.

More damaging to the old classification system’s dominant position was the growing sense that, on the one hand, it cataloged elements that were no longer the most important and, on the other, it fostered a competition among institutions that was leading U.S. higher education in the wrong direction—making research more important than teaching and encouraging a kind of incipient mission creep among almost all institutions not already renowned for their wealth and research prowess.

One of the first taxonomies to challenge the old order was developed at the University of Pennsylvania’s Institute for Research on Higher Education (IRHE) as part of a larger College Board effort to launch an *Enrollment Planning Service*. The modeling we performed for this

effort focused not on institutions but students, assigning each student to one of three broad categories based on the distribution of the colleges and universities to which they sent their SAT scores. We learned that most students shopped in only one segment—National, Regional, or Local—and institutions could be characterized by their dominant student populations again as National, Regional or Local institutions.

What distinguished the *Enrollment Planning Service*'s approach to classifying U.S. higher education was its use of a market perspective rather than either institutional mission or legal status to group institutions. And the groupings were different, making clear, for example, that the major private research universities belonging to the Ivy League did compete against the highly selective liberal arts colleges belonging to the Consortium on Financing Higher Education (COFHE). Using the *Enrollment Planning Service*'s market segments to group institutions allowed both analysts and student consumers to compare and contrast institutions that were interested in students like themselves. The resulting typology also helped sharpen the recruitment strategies of individual institutions as they sought, as one admissions professional told us, to “go hunting where the ducks were” or, more precisely, to seek out locales where their kind of ducks were most likely to be gathered. The technical nature of the modeling underlying the *Enrollment Planning Service* along with the dynamics of a changing admissions market were spelled out in the 1983 publication *The Structure of College Choice* (Zemsky and Oedel, 1983), which had the distinction of introducing the notion that there was a discernable *structure* to the college admissions market.

At roughly the same time, *U.S. News and World Report* launched its rankings identifying the nation's Best Undergraduate Colleges and Universities. *U.S. News* started with a clever idea: ask college and university presidents to list what they thought were the best institutions for an

undergraduate education. Even if the results of what became known as “the beauty contest” reflected a bias in the magazine’s choice of presidents, most knowledgeable observers were intrigued by the outcome. Although there were some notable as well as curious omissions, few readers doubted that those at the top of the presidents’ list belonged there. It may have been gossip, but good gossip sold a lot of magazines.

While many just accepted the results, the losers in these early polls did not. With unexpected force—after all, *U.S. News and World Report* was a not particularly important magazine—those slighted by the poll argued that the rankings were too simplistic, too much a product of fading reputations and old-school networks. *U.S. News* responded with science. Starting in 1989, the annual rankings issue included, in addition to the results of the beauty contest, a variety of statistics the editors presented as objective measures of institutional quality. At this point, things really got murky. Most measures reflected educational inputs rather than outputs. How selective was the institution? What was the average SAT/ACT of the freshmen class? What was the student/faculty ratio? How much money did the institution have to spend on undergraduate education? Many within and a few without higher education asked what had happened to that old-fashioned notion that educational quality meant good teaching, engaged faculty, and industrious students.

There were also problems with the statistics themselves. Some numbers, it turned out, counted for more than others. Some institutional resources were counted twice, first as revenue and then as expense. Other revenues did not count at all—tuitions, for example, which for most private institutions are the financial equivalent of public appropriations, which did count. Federal research funds were factored out, even though they helped create the research climate that bright undergraduates said they found attractive.

Make no mistake: the rankings gave a powerful boost to the idea that there was a simple, clarifying taxonomy that consumers and policy makers and ultimately institutional leaders could use to make sense of a newly complex and increasingly competitive market for an undergraduate education in the United States. The basic categories were just four: National Universities, National Liberal Arts Colleges, Regional Universities, and Regional Colleges. The latter two categories were further subdivided geographically into separate buckets for North, South, Midwest, and West institutions. In all, the *U.S. News* rankings provide 10 separate buckets in which an individual institution might be placed based on its geography, scale, and selectivity.

In the mid-1990s, the University of Pennsylvania/IRHE team responsible for the analysis underlying *The Structure of College Choice* returned to the fray, this time persuaded that the higher education market was more than a convenient metaphor for explaining the competition for undergraduate enrollments. Now working as part of the U.S. Department of Education's National Center for Postsecondary Improvement (NCPI) at Stanford, we wanted to construct a new market taxonomy that predicted market behavior in general and the prices institutions charged in particular. And somewhat to our surprise we were remarkably successful in constructing a taxonomy that explained nearly 60 percent of the variance in the prices that private, four-year institutions were charging. In all, the *NCPI Market Taxonomy* used just a handful variables: region, admit rate, yield, and five-year graduation rate. The underlying model was less successful predicting prices at public institutions, though it too yielded a set of definable market segments and average prices. The conclusion we came to then, erroneously we now believe, was that the public segment of higher education was less of a market, and the prices students paid more a function of political and policy considerations than the value the market had assigned to each institution competing for undergraduate enrollments.

From this work we developed our general definition of a market taxonomy as an analysis that maps the contours of the higher education admissions market in terms of the prices students and families pay to attend the college or university of their choice, and how those institutions differ from one another in terms of the students they attract (including their racial and economic diversity and geographic location), the scope of their programs, and, not to be forgotten, the probability that students attending a particular institution would graduate with a baccalaureate degree in a reasonable period of time. The NCPI taxonomy was initially presented in *Change* in 1997 and later more fully documented in *Higher Education as Competitive Enterprise: When Markets Matter* (Zemsky, Shaman, and Shapiro, 2001). In popular parlance, the resulting taxonomy was often referred to as the “airplane” because we used a rough sketch of a paper airplane to explain and place the taxonomies five basic segments (Figure 2).

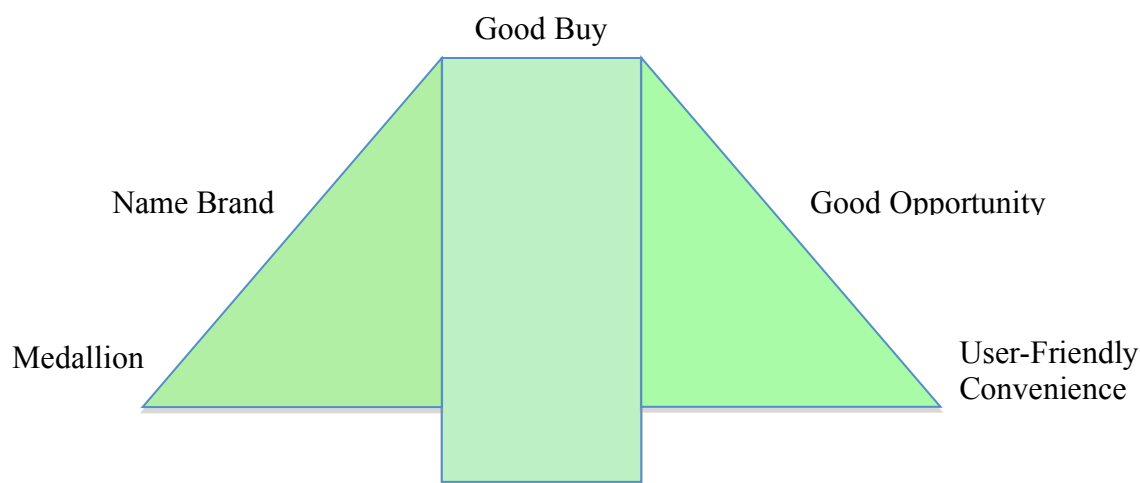


Figure 2. National Center for Postsecondary Improvement (NCPI) Market Segments

Medallion—the segment comprising the nation’s most competitive institutions and students; a segment for which prestige-based rankings like those annually published by *U.S. News* have played an ever increasing role in defining institutional ambitions and hence, quality.

Name Brand—a segment largely populated by well-known institutions. Most practice selective admissions, though their appeal is more likely to be regional than national. Many, but not all, of these institutions would like to be considered as Medallions.

Good Buy—a segment comprising a variety of institutions, for the most part offering full-scale undergraduate programs at prices substantially less than those of institutions practicing selective admissions.

Good Opportunity—a segment comprised of institutions and students who see higher education as a special opportunity. Many students who shop in this segment are the first in their families to attend college.

User-Friendly/Convenience—the one segment in which part-time as well as intermittent learners dominate. Students in this segment often shop for a friendly environment at an institution that understands their special needs, including the need to take courses at convenient times.

Two key student characteristics were important to understanding the workings of the undergraduate admissions market as reflected in the *NCPI Market Taxonomy*. The first was age. The Medallion and Name Brand segments were almost exclusively the preserve of the young. The institutions belonging to one of the remaining segments—Good Buy through User-Friendly—were characterized by having greater numbers of older students. These data, drawn from the National Postsecondary Aid Study (NPSAS) may actually under-report older students’ participation in postsecondary education, particularly those who enroll in courses as general, as opposed to matriculated, students. Even in the reported data, however, one out of every four undergraduates in the institutions that comprise the Good Opportunity and Convenience/User-Friendly segments was more than 30 years old. On the other hand, the median age does not vary substantially across segments, reminding us that these segments on the taxonomies right wing serve both the young and not-so-young alike.

The data detailing the distribution of undergraduates by race and ethnicity presented equally striking signatures. In 1994-95, more than half of African-American and Hispanic college students were enrolled in institutions in the Convenience/ User Friendly wing of the market. At the same time, the enrollment of Asian Americans was shifted toward the left, following the classic pattern of an immigrant group using a college education as an entry point into the middle class.

Ultimately we came to understand that the NCPI Market Taxonomy largely replicated the groupings of institutions presented in the *U.S. News & World Report* rankings. Why did the two analyses correspond so well to one another? Because what *U.S. News* annually reports as “quality rankings” of America’s best colleges and universities are instead indicators of market position, principally among institutions in the medallion and name brand segments of the market.

The initial publication of the *Market Taxonomy in Change* also occasioned something of a dare from Alexander McCormick, who was then editing a volume focusing on American Community Colleges. What McCormick wondered was whether or not there was a similarly segmented structure to the market for two-year programs? Our answer, to our and McCormick's surprise was yes—although the differences between market segments are more muted than in the market for baccalaureate education. More importantly, the community college market operated differently in several revealing ways.

For two-year colleges and institutes—which, as an integral part of their missions are more inclusive than exclusive—market position has little relevance. In this regard, most two-year institutions resemble baccalaureate institutions serving the convenience/user-friendly part of the market. What distinguishes institutions within the two-year market from one another is the extent to which they focus on providing degrees and certificates, principally the associate's degree, and the extent to which their focus is more a matter of providing a broad range of courses to what is increasingly becoming a “spot market” for educational services. (“The User-Friendly Terrain: Defining the Market Taxonomy for Two-Year Institutions,” *Change*, January/February 1998, pp 35-36)

In 1997, there was neither sufficient interest nor information to perform a parallel analysis on what was then still a nascent for-profit market for undergraduate baccalaureate and associate degrees. Today, both interest and data abound, though it is still not clear whether the

for-profit market is different or wholly separate, so answering that question is now part of the nation's agenda as well.

A Shifting Challenge

Thus things stood as Barack Obama began his second term as President of the United States. Much of the discussion within and across higher education had come to center on the increased competitiveness that had taken hold, capping more than two decades during which colleges and universities developed ever more sophisticated strategies to gain market advantage. What this competition crystallized was a much broader understanding that colleges and universities were market enterprises. The principal publication reporting wins and losses remained *US News & World Report* now available for an ever-expanding list of both undergraduate and graduate specialties:

- Business
- Education
- Engineering
- Law
- Medicine
- Science
- Library and Information Studies
- Social Sciences and Humanities
- Health
- Public Affairs
- Fine Arts

And for each of these specialty areas there were a half dozen or more subspecialties, each of which was the subject of a separate *U.S. News* ranking.

In admissions offices—now more likely to be called enrollment management functions—there was a matching fascination with the mechanics as to how colleges and universities ought to

be clustered, clumped, and otherwise confounded. Increasingly these offices were seeking a reliable gauge of an institution's "peer group" so faculty and staff salaries, faculty student ratios, administrative costs per student, available space and facilities along with admissions statistics, could be meaningfully compared.

It was also hoped that students and their parents would become truly informed shoppers using a variety of new, often web-based search engines to compare the prices and various amenities institutions were offering prospective students. Even the Federal government launched its own *College Score Card* designed, as the President put it in his 2013 State of the Union message, to ensure that today's students got "the most bang for their education buck." This *College Score Card* became the latest website offered via the Department of Education's College Affordability and Transparency Center where it joined the government's *College Navigator*. Informed shoppers would search out real bargains in the marketplace thus increasing the pressure on colleges and universities to control their costs, perhaps eventually lowering the prices they charged. Instead, those at the top of the market grew steadily richer even as they grew ever more expensive. At the bottom end of the market—the Good Opportunity and Good Buy market segments, and even within the Name Brand segment of the market—what took hold instead was a frenzy of discounting in which nearly every applicant received some kind of scholarship, and in many cases the posted "sticker price" the institution charged proved to be more than twice the "cash price" the institution on average received from its enrolled students.

The President's call for action highlighted two principal issues the media along with political commentators and foundation officials were demanding the nation's colleges and universities address. The first was the idea that a college education was becoming increasingly expensive, forcing students and their families to assume more debt than was prudent. An

affordability crisis was said to be just over the horizon, though enrollments continued to rise even as the cost of a higher education, particularly among institutions with the most robust applicant pools, outstripped annual increases in the cost-of-living year after year. At the same time these same commentators began to question whether the nation's college students or their families were getting their money's worth—were they learning what they would need to know if they were to become gainfully employed, productive citizens. Just as escalating prices had come to color most conversations focusing on the cost of a higher education, the large number of students who left their campuses without earning a college degree became the focus of an equally unhappy conversation about the effectiveness as well as efficiency of the nation's system of higher education.

What has followed this politicization of college costs and degree completions has been an often mixed and at times desultory conversation about means and ends, the contradictory nature of the data the commentators have relied upon, and the absence of agreed upon methodologies for understanding the functioning—though machinations may be the more descriptive term—of the market for undergraduate associate and baccalaureate degrees.

Making it Happen

Those of us who dwell in the land of Jabberwocky know better. The *NCPI Market Taxonomy* taught a variety of important lessons including that IPEDS had sufficient *prima facie* credibility for both undertaking and verifying the requisite analysis. The key variables are all there: admit rate, yield on offers of admission, student financial aid, locale, and scale and scope of program. IPEDS reports institutional control (public or not-for-profit private or private-for-profit) and length of undergraduate program as well as each institution's Carnegie Classification. Using the data redundancy within IPEDS makes it possible, to put the matter as nicely as

possible, to delete from the analysis those institutions that inflated their selectivity and/or their yield on applications. Those tests, developed by Susan Shaman, compared—and, in these special cases, contrasted—an individual institution’s degree production against its reported five-year graduation rate. What we discovered in the process of cleansing the data was that the five-year graduation rate was itself the single best predictor of the market prices that both public and private institutions charged. Once the graduation rate was included in the analysis the resulting models of price proved much more stable and reliable, even for the public institutions.

The analytic challenge facing those who would reshape the market for an undergraduate education is the same that we confronted in the 1990s as we sought to define a reliable taxonomy for grouping similarly configured colleges and universities. Then, as now, we sought to draw from IPEDS and related datasets indicators that sorted institutions into comparable buckets and documented their performance on important policy measures. Recall that the outcome Clark Kerr sought in developing the original Carnegie Classification was a grouping of institutions that was “relatively homogeneous with respect to the functions of the institutions as well as with respect to characteristics of students and faculty members.”

What policy makers seek is an understandable as well as reliable sorting scheme or taxonomy. What is being promised to the nation’s colleges and universities is a fair and equitable system that compares apples with apples and oranges with oranges. Providing useful data to consumers requires the same logic. The central assumption underlying *The Structure of College Choice* was that students inherently want to fit in. While the best-prepared and adventuresome applicants might assess their qualities and ambitions and then seek a stretch school, most students seek the comfortable middle where they will neither prematurely stand out nor feel from the outset that they are outclassed. It is the satisficing behavior that Bowen,

Chingos, and McPherson described in *Crossing the Finish Line* (Princeton University Press, 2011) to explain how and why some students choose lower ranked colleges even though they have the credentials to be welcomed at a higher ranked institution. Most students carry with them an intuited understanding of the market segment in which they are interested and order their choices accordingly. Only a few sort their choices in terms of access or completions, but they do pay attention to price and whether an institution would make them comfortable—a judgment that is most often reached after visits to similarly positioned institutions. While such descriptions of how the admissions market works are most often applied to young, still in high school shoppers and their parents, it is equally true of adult shoppers who group their choices by geography, convenience, and fit—and they too most often do not make a final choice without first visiting one or more institutions.

This simultaneous modeling of the policy and consumer dimensions of the U.S. market for an undergraduate education is a task that is now significantly less difficult because IPEDS itself has gotten better. The role IPEDS data now play in the calculation of the *U.S. News* rankings has practically guaranteed that most institutional chief executives will pay close attention to the data their offices of institutional research submit annually to the Department of Education. To reinforce this sense of responsibility NCES routinely sends to all Presidents/Chancellors/CEOs an easy to read institutional profile summarizing their submissions. One of the benefits of this additional scrutiny is a marked increase in the professionalization of the institutional research function on most campuses. It is true that most of the confusing data elements of the past remain—the most maddening is the use of first-time full time freshmen when calculating retention and graduation rates—but new data elements have been added allowing for credible workarounds. Among those additional elements are a set of variables that

allow for a much more nuanced calculation of the prices public institutions charge, taking into account that in-state students ordinarily pay significantly less than out-of-state students. When that weighted price calculation is made to the dependent variable in the regressions that produce the *NCPI Market Taxonomy* for public universities, the result is a much more powerful model in which more than half of the variability in institutional prices is explained—nearly the same amount of variance that is accounted for by the market taxonomy for private not-for-profit colleges and universities.

Developing a Work Plan

To group the institutions we will start with the *NCPI Market Taxonomy and subsequent analysis of the market for two-year institutions*, and then update that analysis using 2012 IPEDS data and the new data elements documenting prices and institutional discounting practices. We will expand the taxonomy to include private for-profit institutions, and further expand our analysis of two-year institutions granting an associate's degree or its equivalent, and formerly two-year institutions that have expanded their offerings to include baccalaureate degrees.

So here then is the taxonomic challenge we have set for ourselves: Build on the success of the *NCPI Market Taxonomy* for U.S higher education, making our analysis both sharper and more complete; test whether well-defined market segments help explain institutional completions, racial/ethnic diversity, and/or economic diversity; and then translate these findings into a set of observations that might at last make Americans more informed higher education shoppers.