

JCER Working Paper
AEPR series
No. 2022-2-2

This is the pre-peer- reviewed version of the following article:
“Higher Education in the United States Laissez-faire, Differentiation, and
Research”, *Asian Economic Policy Review*, vol. 18, issue 2, which has
been published in final form at
<https://onlinelibrary.wiley.com/doi/10.1111/aepr.12419> and DOI:
10.1111/aepr.12419.

Higher Education in the United States Laissez-faire,
Differentiation, and Research

Miguel Urquiola
(Columbia University)

This paper was prepared for the Thirty Sixth Asian Economic Policy Review (AEPR) Conference
“Higher Education” on September 30, 2022 via zoom.

July 2023

Asian Economic Policy Review
Japan Center for Economic Research



To authors

If you want to introduce the same working paper you wrote and presented at the AEPR conference held via zoom on Sept. 30, 2022, in your own/your affiliation's website, please be aware the following requirements.

To ensure that all citations and references to your published article are captured by the SSCI (Social Sciences Citation Index), authors are required to amend the cover page of your working paper as soon as practical after publication in AEPR. The amended cover page should include the full article citation, journal name, volume and issue, and DOI, as well as a hyperlink to the published article. The cover page of JCER Working Paper AEPR series has been already amended after publication in AEPR. The face of this working paper is an example of an amended working paper cover page.

Higher Education in the United States: *Laissez-faire*, Differentiation, and Research

Miguel Urquiola
Columbia University

September 2022

Introduction

Different countries' higher education systems display different traits. The U.S. system stands out in three dimensions. First, it accounts for the highest number of leading *research* universities (Clotfelter 2010). Second, it displays significant *differentiation*: multiple types of institutions (e.g., research universities, community colleges) offer services that—even within each type—differ in cost, selectivity prestige, etc. Third, it has a *laissez-faire* orientation: thousands of private institutions and dozens of state systems compete; all enjoy substantial autonomy.

These features could be coincidental; this chapter makes the case that they are, rather, systematically related. The development of the U.S. higher education market—which allowed market forces to operate and lacked centralized planning/control—contributed to the emergence of differentiation and a set of leading research universities.¹

A salient feature of this development is a reversal that took place in the second half of the 1800s. Up to that point, the U.S. higher education system consisted of institutions that displayed little differentiation and produced little research. Specifically, until about 1850, the system consisted of colleges that, by and large, delivered the same product: a relatively basic undergraduate curriculum featuring no specialization. These institutions did not expect faculty members to produce research, nor did they offer them rewards for doing so. To the extent that some professors did research, it reflected personal rather than institutional objectives. The result was that no American school could remotely compete with the then-leading universities located in Britain, France, and Germany.² This situation continued to hold for much of the 1800s, even as the U.S. easily surpassed those countries in terms of population and GDP. In other words, wealth and size offered no guarantee of performance.

By about 1930, the picture had changed drastically. The U.S. system was well on its way to the research excellence and high degree of differentiation it currently displays. To elaborate, today a small number of U.S. schools—a few dozen out of about 4,000 thousand—produce research at the highest level. The quality of their research output matches or surpasses that of top universities outside the U.S., in part because these schools can access a lot of resources. This reflects that the U.S. spends more on higher education than any other large, rich country. At the other end of the spectrum, a large sector of U.S. teaching-focused (four-year and two-year) schools produce little research.³ Many of these schools have relatively low funding—lower than that enjoyed by

¹ This argument draws on Urquiola (2020) and MacLeod and Urquiola (2021).

² This point is non-controversial if perhaps underappreciated. See discussions in Metzger (1955) and Cole (2009), and empirical evidence in Urquiola (2020).

³ There is a continuum rather than a clear boundary between these two categories. That in itself speaks to the degree of institutional diversity and differentiation in American higher education.

numerous schools outside the U.S. Thus, in higher education, as in other areas, the U.S. displays not only differentiation, but high levels of inequality.

What produced this dramatic change? One frequent explanation emphasizes the role of events outside the U.S. In particular, influential work highlights events surrounding World War II, which damaged German universities and produced a migration of leading academics to the U.S. (e.g., Graham and Diamond 1997, Cole 2009, Gruber and Johnson 2019). However, Urquiola (2020) shows that by some measures, American research universities had already overtaken European ones by the 1920s, before the Nazis came to power. Veysey (1965) and Geiger (1986) present a generally similar view. In other words, by the time the Nazi regime began to expel/repel professors, these already had good reason to see that U.S. schools were distinctly on the way up and would provide good academic homes. The bottom line is that a successful explanation of the changes discussed cannot solely rely on external events and factors.

Another frequent explanation simply cites market size: the U.S. has higher population and GDP than many competitors. Yet that alone also may be insufficient. As stated, the U.S. was larger and richer for a long time before it took leadership in research universities. Thus, a successful explanation likely has to accommodate the specific timing of the U.S. ascent.

Again, this chapter will make the case that intrinsic features of the American system—particularly its market, *laissez-faire* orientation—played a substantial role.

Origins: the *laissez-faire* orientation

A visitor to the original thirteen American colonies might have reasonably expected that they would eventually develop a higher education system resembling some in Europe. After all, as the colonial leaders created colleges, they often self-consciously imitated the schools many of them had known, and in many cases attended, in Europe. For example, Harvard's founders explicitly drew inspiration from Cambridge, and William and Mary's from Oxford (Oxford had not only served as the model for Cambridge, but shared many features with Paris, one of the seminal European universities).

Despite these shared and still celebrated roots, the U.S. ended up with a rather different institutional configuration. Specifically, many European countries have tightly regulated, often state-controlled university systems. By contrast, the U.S. system is built on a principle of *laissez-faire*—it consists of thousands of institutions largely left to compete with each other, even if most enjoy some form of state financial support.

The origins of this contrast lies in that while both European and American universities have religious roots, religion ultimately impacted them rather differently. To elaborate, as European universities emerged during the high middle ages, providing clerical/theological training was among their key functions. This was a high-stakes mission given the preeminence of the Catholic Church and its influence over (and its extensive overlap with) secular authorities.

As a result, both the Pope in Rome and local political and clerical authorities (e.g., kings, bishops) regularly attempted to control the emerging schools. Through many struggles and by sometimes playing these authorities against each other, the early universities managed to secure some autonomy. This setup also facilitated extensive entry, i.e., the opening of new schools. For example, if the Pope did not wish to authorize a new university, the organizers could appeal to their King, and vice-versa.

The Pope's role also illustrates that the early European university market often transcended political boundaries. Contributing to this was that at this point Europe's educational system

featured a *lingua franca*—Latin—and to a significant extent, a single curriculum. As a result, it was common, for example, for German students to seek instruction in Paris or Bologna, particularly before many schools emerged in German lands.

In short, one might say that the original expansive *laissez-faire* university system was actually European.

This setup suffered a distinct reversal, however, with the Protestant Reformation. In the midst of acute religious conflict, the control of universities acquired even higher stakes. Europeans concluded that a stable kingdom required religious uniformity, secured through violent means if necessary. In this environment, strengthening states gradually set up strong ministries of education to control their entire school and university systems. Later events (e.g., the Napoleonic reforms) further strengthened state control. By the time Europe secularized, the principle of state control over higher education was firmly in place.

In the U.S., things initially looked to be following a similar pattern. For example, when the Massachusetts Puritans created Harvard, they saw it as a school that—while at arm’s length—the colonial government and its Puritan majority controlled (Herbst 1982). This majority was guarded including by asking Baptists or Quakers to leave the colony. The Puritans in Connecticut created Yale in a similar spirit, and at least initially sought to create a school more theologically conservative than Harvard.

The situation changed, however, once college creation reached the Middle Atlantic colonies, particularly the areas between New York City and Philadelphia. While many Europeans had settled in Boston with primarily religious motivations, commercial objectives more often animated those reaching Philadelphia and particularly Manhattan. As a result, these areas received immigrants from diverse Christian denominations (e.g., Presbyterians, Anglicans, Quakers, Lutherans, Baptists, the Dutch Reformed) in addition to non-Christian groups (e.g., Jewish immigrants in New York). Further, some of these people—e.g., those affiliated with the Dutch West India Company—came from areas where religious conflict was becoming less salient, and where religious tolerance was beginning to be seen as a way to organize a viable and even successful society.

In this environment, the Middle Atlantic colonies abandoned the urge to support a single colonial college that followed a single religious orientation—that in some sense was not on the menu. Rather, the approach became to let each denomination create its own college, and to expect that denomination to fund the school. It was in this environment that Presbyterians created the College of New Jersey (Princeton), Anglicans founded King’s College (Columbia), the Dutch Reformed started Queens College (Rutgers), and a more non-denominational but predominantly Anglican group founded the College of Philadelphia (Pennsylvania). In some cases the founders were even explicit that they expected no financial support from the colony; as one of them remarked, “let each man provide for his own house.”⁴

This was the seed of the *laissez-faire* approach that characterizes U.S. higher education—the idea that it should be easy to open new schools which then compete with no guarantee of survival. After independence, this approach led to massive entry by new colleges. While in 1776 the U.S. had 9 colleges, another 900 had entered the market by 1861. Many of these did not survive—there was extensive entry and exit.⁵

Initially, most of the schools opened were private (the public/private distinction was not as salient nor as well-defined as it is now; we return to that below). In time public schools grew in

⁴ Smith (1889, 191).

⁵ Some uncertainty surrounds the exact number of colleges that opened. The fact that no centralized count exists itself reflects the *laissez-faire* approach. See Tewksbury (1932), Burke (1982), and Urquiola (2020).

number and strength. This development received a significant impetus from the Morrill Act (1862), by which the federal government awarded each state the revenues from the sale of public lands in the West.

Even the Morrill Act had elements of *laissez-faire*. Other than stipulating that the proceeds of land sales had to benefit higher education, it left states a lot of latitude. For example, while many states used Morrill funds to create or strengthen state schools (e.g., California with Berkeley and Indiana with Purdue), others used the funds to subsidize schools that were and remained independent (e.g., Massachusetts with M.I.T. and Connecticut with Yale).

Origins: *laissez-faire* and governance

The *laissez-faire* orientation also appears in the governance of American universities. In the private sector, the most common arrangement is one in which institutional control ultimately rests in the hands of a board of trustees. This is a group of individuals whose day-to-day activities are *not* in the university, but who select the president, participate in major decisions, and generally provide oversight. Initially, given colleges' religious orientation, these boards had a distinct clerical presence—for example the original Harvard boards had several pastors from Boston congregations. Today, trustees are *much* more likely to be businesspeople or lawyers than pastors or priests, and they are almost always alumni. Boards of trustees typically replenish themselves from nominations made by their members and the president of the university.

Boards of trustees are common even at American public universities. The difference is that in this case the trustees may be appointed by the State legislature or by the Governor, etc.⁶

This governance system is in contrast to that in other parts of the world. For example, it differs markedly from that seen in medieval Europe and still to some extent in place in the most traditional universities, like Oxford. In such cases the faculty—expressing itself through a group like the congregation or “parliament”—has substantial control. *De jure*, U.S. faculty members have no such power; *de facto*, professors did acquire more power with changes in the 1800s, reviewed below.

The American arrangement also stands in contrast with some in continental Europe. For example, in France and Germany, ministries of education exert substantial control over universities. In Spain and parts of Latin America, students can also have important roles, including in choosing deans and rectors. Neither students nor cabinet members enjoy such power in the U.S.

Every governance system has advantages and disadvantages. What the U.S. setup delivers, for better and for worse, is a set of largely independent and also relatively nimble schools. In the U.S., a decisive university president, firmly backed by a board of trustees, has a wide margin of action. She can easily open new fields, close others, borrow to make investments (if banks are willing to lend), etc. That will be relevant in the discussion below.

Initial lack of differentiation

Despite the rapid increase in the number of colleges, for a long time the U.S. college sector displayed relatively little differentiation. In particular, into the 1800s most colleges were quite similar and shared six related traits.

⁶ As stated, initially the public-private distinction was not stark. For example, at Harvard and Yale the initial governing boards were appointed by Colonial government authorities. A major clarification that these were indeed independent boards came when the Supreme Court heard the Dartmouth case. See Herbst (1982) and Whitehead (1986).

First, the colleges were small. This reflected that they catered to local markets, often segmented by denomination. For example, a given college might mainly serve the Presbyterian students in a certain area, and it only those who could pay its tuition. Thus, it was common to see colleges with total enrollments below one or two hundred students.⁷ In other words, most colleges were much smaller than many modern high schools. Related, colleges tended to have few faculty members. For example, in 1814, Dartmouth was described as one of the country's thriving colleges, yet it only had three professors and two tutors. Even in the 1850s Harvard and Yale had about twenty faculty members; schools like Dartmouth, N.Y.U., and Union had about ten.

Second, most colleges faced significant financial constraints. The early colleges certainly received donations—indeed, most could not have survived without them. But by modern standards, these benefactions were very modest. Tuition was the main source of funding, and with low enrollments, most colleges struggled for funds.⁸ Sometimes schools asked their faculty members for help in raising money, or forced them to accept delayed wage payments. The limited number of faculty helped to keep costs down, but also meant professors routinely had to teach multiple classes in multiple subjects, or to teach in areas entirely outside their relative expertise.

Third, by present standards the college students were young and often not particularly well prepared. The U.S. expanded educational access more rapidly than Europe; e.g., average enrollment rates went up earlier. But the U.S. also expanded access less systematically. To elaborate, as state ministries took over education in Europe, they structured it so that students only entered a given level after formally demonstrating proficiency in an earlier level. This was easy since the ministries tended to govern the entire education sector. By contrast, in many areas in the U.S., colleges appeared before a high school system was fully operational. Rudolph (1962, 48) states that an early law of American education was that “Where there are no elementary or secondary schools, there you will find a college.” This situation, combined with colleges’ fairly acute need for enrollments and tuition revenues meant that well into the 1800s, they routinely received 13-year olds, in many cases with relatively little academic background. To some extent, colleges were substituting for secondary schools. Even in the late 1800s, when some called for U.S. colleges to adapt German-style specialized and advanced curricula, Harvard’s President Charles Eliot remarked that this would suit his freshmen “about as well as a barnyard would suit a whale.”

Fourth, by present (and contemporary European) standards, American colleges taught a limited curriculum. The course of study was fixed and “classical.” Students typically had *no* choice of courses and received almost no specialized instruction. Rather than choose a “major” area of study, they took a fixed set of subjects including grammar, logic, rhetoric, mathematics, music, the physical sciences (“natural philosophy”), and ethics and politics (“moral philosophy”). Further, the methods of instruction were limited. For example, a key instructional tool were “recitations” in which students repeated memorized material. All this should not be shocking given the previous points. A basic, fixed curriculum—and simple or rote learning exercises—fit the limited size of the faculty, helped to keep costs down, and compensated for students’ often limited preparation.

Fifth, research and scientific work were largely absent. Faculty busy teaching multiple subjects could hardly do much research, and the colleges by and large did not expect them to do any. Further, the faculty were often hired not with attention to their expertise but to factors like

⁷ Despite being often distinctly identified with a given denomination, colleges usually explicitly expressed an openness to students of all religious backgrounds. To some extent this was *pro-forma*. But again, the colleges were often small and desired to raise their enrollments, and that led many to express openness.

⁸ There is evidence that tuition levels themselves were low.

denominational affiliation (e.g., Baptist instructors for Baptist colleges). Further, even if colleges had wanted to hire experts in some field, the market was very restricted. There was no advanced academic training in the U.S., and although some individuals went to Europe to pursue training, this was rare in part because it offered little return. To be clear, there are certainly examples of faculty members doing creative and original work during this period. The point is that they did it because they wanted to, not because colleges required or rewarded it. Associated, the colleges did not engage in science as we understand it today. While some subjects were covered, the emphasis was inductive and there was little room for experimentation.

Sixth, given its emphasis on a basic, classical curriculum and on students of relatively early ages, the college system was not very active in any form of professional instruction. Notably, legal and medical instruction mainly took place either by apprenticeship or in schools that were independent of any college.⁹

Differentiation begins

During the 1800s, as the country developed and industrialization took hold, people perceived that the college system needed reform. Many employers and students called for advanced and specialized instruction that might be more useful and interesting. For example, there was a sense that colleges should teach science as relevant to increasingly important industrial and mining activities, or teach social science as applied to economic or social questions.

By the mid-1800s, multiple colleges had seen attempts at curricular reform led by professors, presidents, and trustees, depending on the case. These efforts met with substantial resistance and by and large failed.¹⁰ They illustrate that, as observed in many countries, major educational reforms can easily run into opposition and hence are not easy to implement.

At this juncture, the system's *laissez-faire* orientation—by facilitating entry—finally allowed for reform. Two key institutions in this regard were Cornell and Johns Hopkins.

As soon as it opened (1865), Cornell began to offer different courses of study and to gradually introduce what we today would call “majors,” allowing students choice and specialization. This proved to have great appeal: within a few years of opening, Cornell had the largest entering class in the country—larger than older, prestigious, schools that had resisted curricular reform. It is worth noting that Cornell's entry was made possible by combined private and public support; notably a major donation by Ezra Cornell and a significant share of New York State's Morrill Act proceeds.

For its part, Johns Hopkins' innovation was to focus on advanced (and specialized) instruction. Its goal was to produce and transmit cutting edge scholarship, emulating the prestigious research-oriented German universities. To this end, Hopkins began to hire highly (often European-) trained professors capable of delivering graduate instruction. To ascertain this ability, it began to consider candidates' research output. While Hopkins did not reach Cornell's college enrollment levels, it quickly led Ph.D. conferrals in many areas, and was recruiting the most distinguished junior professors returning from Europe, or senior ones from positions at schools like Harvard. Because many of them had been trained at the University of Gottingen, Hopkins was soon nicknamed “Gottingen in Baltimore.”

⁹ There were exceptions to this as the occasional older college, for example, did provide medical instruction. But this was not a central activity or a priority. In some cases, for example, schools let their medical training go out of business.

¹⁰ See Urquiola (2020) for a listing of salient efforts and references.

Differentiation: research

Faced with such innovations, incumbent schools had to decide how to respond. At this point, those with the most degrees of freedom to do so included the oldest schools in the country.

At one extreme, Columbia and Harvard moved quickly and aggressively to compete at offering specialized and advanced instruction—essentially at becoming research universities. Specifically, they moved to:

- offer undergraduate students choice over courses and the ability to choose a major,
- create graduate schools awarding advanced degrees in the arts and sciences,
- hire Ph.D.-trained, research-active professors,
- offer engineering instruction, and
- create, assimilate, or improve professional schools (e.g., law, business, medicine).

Among the older schools, Princeton and Yale moved in this direction too, although less quickly and decisively. For example, while Princeton built out its graduate school of arts and sciences, it did not acquire a full set of professional schools.

All these soon faced competition from newer (including brand-new) schools that leveraged private donations and/or state support to become full-blown research universities. These included California (Berkeley), Chicago, M.I.T., Michigan, and Stanford. Such schools signaled their goals by calling themselves “university” rather than “college.” Such “branding” can have real effects on educational markets, as Acton (2022) and Eble and Hu (2022) show, more recently, for the U.S. and China, respectively.

As one would expect in a competitive system, not all schools that attempted to join the ranks of the top research universities succeeded. For example, Clark University mounted an early effort to become the leading American university—its aim was to compete directly with John Hopkins. The effort proved underfunded, however, and eventually ran out of steam. Union College similarly was in the leading group, but only temporarily.

All these schools began to demand Ph.D.-trained, research-able professors. After all, if a school claimed to offer leading chemistry instruction, it helped to show it had good chemistry faculty. Consistent with this, universities began to pay more for professors who were perceived to be leading academics. This was the time when faculty “raids” began. For example, early on Chicago built its faculty partially by hiring away Clark professors.

Professors, in turn, began to form professional associations like the American Chemical Society, the American Historical Association, or the American Economic Association. These groups, as well as some university departments (e.g., Hopkins, Harvard, Chicago, Columbia), began to publish journals. Some schools opened university presses. In this the U.S. was catching up to an infrastructure that existed in Europe.

These developments meant that professors at U.S. research universities acquired: i) an incentive to invest into research, and ii) means to signal their performance in this dimension.

The available measures of research quality gained precision with the years. For example, peer review procedures were refined, and in most fields a clear journal pecking order emerged. While initially simply publishing many papers might have been enough to secure a job at a top department, with time the specific journals in which these papers appeared came to be crucial.

In addition, the emergence of the tenure system—while propelled in part by concerns relating to academic freedom—helped solidify the incentives to do high-quality research, particularly for young academics.¹¹

Finally, it is worth noting that the implicit and explicit performance systems that developed are far from costless. For example, U.S. academics invest substantial amounts of time into writing journal referee reports and tenure letters. There are costly activities, but they are part of an evaluation system—indeed an evaluation infrastructure—that allows American research universities to measure and reward research performance.

Differentiation: selectivity/prestige

In the story above, over the 1800s the U.S. had developed unsatisfied demand for advanced and specialized instruction. Then some new or reforming schools came forth to satisfy it. In the standard economic model, one would expect these schools to grow and increase their market share. It is notable that while these schools initially embraced a growing market share, they later rejected it. Understanding why this happened is important to understanding differentiation in American higher education.

As schools like Columbia reformed, they attracted enrollments. The transformation was dramatic. For example, well into the 1800s, Columbia had struggled for enrollments and was smaller than colleges like Amherst or Williams. However, by the 1910s, Columbia and Harvard were the two largest universities in the U.S.—larger than any public school.¹² Other emerging private research universities, like Stanford and Chicago, also took a growing share of regional and national markets.

From these schools' perspective, this was in many ways a welcome development. Growth provided tuition revenues to fund further reforms and enhancements. However, growth also brought unexpected challenges, particularly at the undergraduate level.

As stated, most colleges had historically catered to regional elites. In part, this was the result of the type of students who wished to use—and could afford to use—these schools. From such students' perspective, the colleges had been open in that they applied relatively low admissions standards. To illustrate, schools like Princeton historically catered to private school students and had entrance exams. But a large proportion of their entering students were admitted “with conditions,” i.e., even if they had failed the examination.

As the more successful schools grew, they encountered three developments. First, they attracted students from locations and backgrounds different from their traditional ones. Second, they had trouble providing facilities to house and feed all students—this had always been a challenge, but growth exacerbated it. Third, while colleges had historically only provided a fixed curriculum, the students, particularly in a country growing wealthier, demanded more “extra-curricular” activities—from sports to arts. These developments were more acute at some schools. For example, urban universities like Columbia, Harvard, and Pennsylvania—traditionally

¹¹ See MacLeod and Urquiola (2021) for a discussion.

¹² See Slosson (1910) and Graham and Diamond (1997). The dominance of private schools at this stage is consistent with data presented by Goldin and Katz (1998), who show that fourteen of the largest twenty universities were private in 1897, with the corresponding number being ten in 1924. Nonetheless, they also note that on average public schools were larger and less numerous: there was only one public school for every four private (this may have reflected that the public sector was less subject to the denominational concerns that propelled private college creation in the 1800s).

Protestant schools—were particularly likely to attract the children of Catholic and Jewish immigrants.

Some students did not like the increased religious, ethnic, and socioeconomic heterogeneity. They responded by taking matters into their own hands. In particular, they:

- “self-sorted” into interest clubs, private dormitories, fraternities, sororities, eating clubs, etc.,
- began to provide an extra-curriculum on their own; for example, via student and alumni-organized athletic teams and artistic groups (e.g. glee clubs, theater groups, etc.).

In short, organizations emerged to provide various services—including homogeneity—that the schools were not providing.

These organizations took different forms at different schools. At Harvard, private dormitories and “finishing clubs” segregated students by socioeconomic background; e.g., several rarely accepted Jewish students. In this they reflected anti-semitic attitudes that extended to many faculty members and academic leaders.¹³ At Princeton, the equivalent space was occupied by “eating clubs”; at Yale, by secret societies; at Michigan and Wisconsin, by a hierarchy of selective fraternities and sororities.

These clubs acquired an air of exclusivity. For students, the challenge was not getting into a given school, but rather getting into certain clubs once at the school. This reflected that the clubs did not usually accept students immediately upon enrollment. In many cases, admission came only in the second or third year. To illustrate, when he arrived at Harvard, Franklin Delano Roosevelt could “buy” admission into a private dormitory—that was just a matter of money. As a sophomore, however, he failed to gain admission to Harvard’s most exclusive final club; this he later described as the greatest disappointment of his life. Eleanor Roosevelt added that it was this experience that made FDR “identify with life’s outcasts.”¹⁴

Initially, many university leaders saw no problem in the clubs’ emergence and role. After all, the clubs saved the schools money by providing costly services, and operated in realms authorities had usually viewed outside their ambit.

But eventually, many leaders realized that the clubs posed three types of challenges. First, graduates’ loyalty and generosity might go to the clubs rather than the school, as indeed started to happen. Second, the clubs could introduce controversial elements into campus culture. Some were openly anti-intellectual; e.g., some fraternities excluded men with good grades. In other cases, the clubs sponsored activities the authorities thought had undesirable elements (e.g., violence in sports, unsuitable topics in the theater). Third, by affecting the atmosphere at some schools, the clubs exerted influence over who chose to apply there. For example, the Yale secret societies were hard to get into and rarely admitted Jewish students. As a result, Yale lost applicants from wealthy Protestant and from Jewish backgrounds. At the time, many at the school might have been fine with the latter but not the former.

In response, the schools involved took two actions: capping the size of their entering classes and introducing selectivity. Rather than only administer a low-stakes admissions test, the schools began to collect extensive information on applicants: grades, socioeconomic background, parents’ occupation, etc. This information was used to reach a decision that was then simply communicated (rather than explained) to the candidate. Thus the schools not only became selective but gained tools to control their student body composition. Columbia and Harvard led in these measures, but they were soon emulated by peer schools. These schools shared many goals and were wary of not having the tools to be selective when key competitors were going in this direction.

¹³ See Synnott (1979) and Karabel (2006).

¹⁴ Karabel (2006), page 17.

While selectivity first appeared at schools turning into leading research universities, it also emerged at some older and/or wealthier colleges (e.g., Amherst, Swarthmore, Wellesley, Williams) that had opted to remain focused on undergraduate instruction. Although these schools did not follow others in becoming full-blown universities, they also gradually became highly selective. In addition, even though they did not offer graduate/professional instruction, they did introduce innovations like majors and recruited specialized faculty.

Differentiation: growth in non-selective teaching-oriented institutions

The fact that selectivity appeared in the U.S. is not surprising from the point of view of economic theory. Economic models fully predict this in a *laissez-faire* educational market.

These models emphasize two types of mechanisms. First, suppose there is a “peer effect,” that is, students learn from each other, and being exposed to high-ability peers enhances learning. Second, suppose that going to school with high-ability peers conveys information. That is, suppose that it is hard for employers to quickly infer whether one is of high ability, but that they can use the school one attended to gather information (e.g., inferring that someone who went to M.I.T., the University of Tokyo, or Yale Law School is smart). Beyond these mechanisms, one might think that associating with wealthy or well-connected people confers “network” effects.

The models suggest that in these cases, high-ability (or well-networked) individuals will want to congregate with each other, and that competitive markets will generally respond by sustaining sorting/stratification. In particular, models like Epple and Romano (1998) and MacLeod and Urquiola (2015) predict that a *laissez-faire* school market will feature:

- A segment of selective schools, with the ones with the highest prestige being small and in strict hierarchy. For example, Harvard College will be small (relative to the market) and slightly more selective than Yale College, which will also be small and slightly more selective than Columbia College, and so on.
- A larger segment of non-selective schools; that is, after some cutoff of selectivity, schools will be much more or completely open in admissions.

Qualitatively, this is the direction in which things moved in the U.S. The schools that became selective chose to restrict their enrollments—indeed it is frequently observed that in the U.S. top schools choose to remain small (Chetty et al. 2017, Blair and Smetters 2021).

Despite this restriction on enrollments at an important set of schools, overall enrollment grew rapidly. Indeed, after these reforms, there followed a long period of sustained growth in American higher education enrollments (Goldin and Katz 1999), one that continued for essentially the entire 20th century, with only temporary declines in the 1950s.

Much of the resulting growth happened at public (and more recently for-profit private) non-selective schools. By 1950 public institutions accounted for about 50 percent of higher education enrollments; by 1980, for about 75 percent, although that share declined somewhat after that (National Center for Education Statistics, 1993). A crucial factor in this growth was the emergence of two-year schools, initially largely public. Historical data on their enrollment is not easily available, but by 1930 these two-year schools accounted for about 8 percent of enrollments (NCES). At present, they account for close to 40 percent (of which about 35 percent in the public sector).

This implies that in the U.S., the public higher education sector is itself highly differentiated. It includes a large number of non-selective institutions as well as a handful of top research universities such as Berkeley, Michigan, UCLA, Virginia, Wisconsin, etc.

The introduction of standardized exams like the SAT and GRE helped to promote and to measure such differentiation. Hoxby (2009) shows that over the past fifty years, American higher education institutions have diverged in terms of their students' average SAT scores. In 1962, the most selective schools had average scores at about the 90th percentile; the least selective schools at about the 50th. As Hoxby (2009) notes, if one extrapolates, the difference in 1940 would have been about twenty percentage points. Consistent with this in the 1900s observers stated that in the early 1900s the differences in ability between, say, Harvard and City College might have been hard to notice. Over the following decades the schools at the top became more selective, and those at the bottom less so. By 2007 the schools at the 99th percent of selectivity had average scores close to the 99th percentile. By contrast, the average ability at the least selective schools had declined, such that the gap between the top and the bottom line increased to more than seventy percentile points.

Differentiation: resources

The rise of selectivity and public institutions set in motion a complementary type of differentiation process, one involving resources. American higher education institutions rely on six main sources of revenue.¹⁵ One way differentiation is evident is that the importance of these sources varies substantially across schools. The sources are:

- 1) tuition paid by students/families,
- 2) direct state-government transfers that partially fund instruction,
- 3) indirect federal support for instruction, channeled through student loans and loan guarantees,
- 4) federal research funding,
- 5) endowment income (mainly the return on past donations or other assets), and
- 6) current donations.

At public schools—particularly at non-selective ones—sources 1), 2), and 3) are salient, with little to nothing coming from the other three. In particular, these schools (e.g., community colleges and many state universities) charge relatively low tuition by American standards. For example, price tags of 2-10 thousand dollars per year for in-state students are common, with higher costs for out-of-state students. In order to cover direct and indirect costs, many of these schools' students rely on loans, in some cases directly provided by the Federal government. In addition, many of these schools receive direct allocations of state funding. These help to keep tuition levels accessible. A challenge for many public schools is that the real value of source 2) has declined over the past two or three decades, adversely affecting educational quality (Kane and Orzag 2003, Bound et al. 2019).¹⁶ This has led public schools to raise tuition for in-state students.

The more one goes up the selectivity ladder, the more public schools can enroll out-of-state and foreign students who pay higher tuition. In addition, once one reaches the top public and private schools, sources 4)-6) are increasingly important.

Finally, there are the leading research universities (e.g., Yale, Northwestern) and, as stated, some wealthier liberal arts colleges (e.g., Swarthmore, Williams). Selectivity allowed these schools to develop a student body composition that became increasingly attractive over time. This allowed them to enroll students with high academic ability, students with valuable family connections, students with outstanding athletic/artistic/social skills, etc. This, along with investments into faculty and facilities, allowed them to produce satisfied graduates.

¹⁵ This list covers only revenue. State and federal tax concessions are also significant sources of support.

¹⁶ This has resulted in a decline in state funding from about 9,000 dollars per student on average to about 7,500.

These individuals were grateful for the networks and training they received, and were invested in their school's reputation. Not surprisingly, they also tended to have good and often lucrative careers. This put them in a position to aid their *alma maters* financially. Some of the largest donors ended up on boards of trustees, advisory councils, etc. All of this resulted in a virtuous circle—it helped those schools become even more attractive, receive more donations, become more selective etc. (Bulman 2022). The income from endowments eventually became a major category of income.

In addition, these schools raised real tuition steadily over decades. The resulting income, supplemented by the return on endowments, allowed them to have generous financial aid policies. These, in turn, made them highly attractive to high-ability, low-income students. Indeed, to help attract such students, the wealthiest schools explicitly try to rule out much revenue from source 3), by calculating financial aid such that students are not expected to borrow.

Among the selective schools, the research universities also get substantial resources through channel 4), federal research support. This funding grew substantially in the years surrounding World War II, partly via expenditures by the Department of Defense. This growth continued after the War with the creation of agencies like the National Institutes of Health and the National Science Foundation. Over the years, these have distributed a large amount of research-related funding, despite a secular decline in recent years (which may be reversed by ongoing legislative initiatives).

A notable aspect of the federal research funding is that in a sense, it amplifies differentiation—there is relatively little effort to distribute resources to generate equality along dimensions like region or prestige. This reflects that the main criterion in grant awards is scientific merit, which naturally advantages the leading research universities.

The bottom line is that the U.S. higher education system displays enormous differentiation in schools' access to resources. The U.S. spends more on higher education, per student, than any large industrialized country. But differentiation implies that access to resources at the very top stands out. This is partially why schools like Harvard, Princeton, and Stanford are attractive to top faculty and students from around the world.

Conclusion: An Assessment

The American higher education system is peculiar relative to many in the developed world. It stands out in part because of its *laissez-faire* orientation and its high degree of differentiation. In addition, it accounts for a large share of the top research universities. This chapter made the case that these features are related. For example, the origin of the clear differentiation lies in the market orientation. Both of these features contributed to the rise of strong research universities.

A natural question is if the U.S. configuration is, on balance, desirable. It is impossible to give this question a definitive answer—there are many unknown counterfactuals involved. Nevertheless, one can make some assessments.

First, there is no question that the system features a substantial degree of inequality. Not only is there a lot of institutional differentiation, but there is a correlation between a student's socioeconomic background and her school's resources. This could contribute to the intergenerational transmission of inequality (e.g., Chetty et al. 2017).

Second, in many senses public policy is less powerful to shape the system. For example, in many countries, the U.S. included, there is a concern that students attending lower-quality institutions receive a low financial return on their investment. This causes problems down the line, including with student debt. In countries with highly centralized, government controlled institutions, that can be addressed directly by regulators, including by closing schools. In the U.S.,

by contrast, the options are more limited. The government can identify schools that underperform and try to disseminate information, but there are fewer direct levers. Of course, this issue cuts both ways, as it might avoid counterproductive policy.

Among the positives of the U.S. setup, the excellent research output—and the fact that it attracts talent from around the world—is salient. University research contributes to innovation, and the idea that innovation drives economic growth is central to growth theory.¹⁷ Entrepreneurs with first-hand knowledge have argued that Silicon Valley would not exist without Stanford, and biotechnology clusters around Cambridge, Massachusetts, for a reason. Top universities can also contribute to innovation by training highly skilled human capital.¹⁸ Research is also consistent with these channels—innovation and training—being simultaneously active. For instance, Valero and Van Reenen (2016) suggest that increases in the number of universities at the country level accelerate GDP growth, and Toivanen and Vaananen (2016) that expanding engineering training can enhance innovation.¹⁹

Beyond this, once one has a large country producing a substantial amount of research there is of course an externality component. For example, the recent covid-mRNA vaccines benefitted from research done at universities. As with all innovation, there is a public good component, and the entire world benefits from U.S. university research output.

¹⁷ See Solow (1956), Romer (1986), Aghion and Howitt (1997), and Lucas (2009). For some recent empirical evidence, see Dittmar (2011).

¹⁸ see Mokyr (2002) and Squicciarini and Voigtlander (2015).

¹⁹ See Cantoni and Yuchtman (2014) for contributions of universities to institutional quality.

References

- Acton, Riley. 2022. “Is a name change a game change? The impact of college-to-university conversions,” *Economics of Education Review*, 88, 1-15.
- Aghion, Philippe and Peter W. Howitt. 1997. *Endogenous Growth Theory*. Cambridge, MA: MIT Press.
- Lucas, Robert E. 2009. Ideas and growth. *Economica* 76 (301): 1–19.
- Blair, Peter Q. and Kent Smetters (2021) Why don't elite colleges expand supply? National Bureau of Economic Research Working Paper No. 29309.
- Bound, John, Breno Braga, Gaurav Khanna, and Sarah Turner (2019) Public Universities: The Supply Side of Building a Skilled Workforce. National Bureau of Economic Research Working Paper No. 25945.
- _____. 2019. The Globalization of Postsecondary Education: The Role of International Students the U.S. Higher Education System. National Bureau of Economic Research Working Paper No. 28342.
- Bulman, George. 2022. The Effect of College and University Endowments on Financial Aid, Admissions, and Student Composition. National Bureau of Economic Research Working Paper No. 30404.
- Burke, Colin B. 1982. *American Collegiate Populations: A Test of the Traditional View*. New York: New York University Press.
- Cantoni, Davide and Noam Yuchtman. 2014. Medieval universities, legal institutions, and the commercial revolution. *The Quarterly Journal of Economics* 129 (2): 823–887.
- Chetty, Raj, John N. Friedman, Emmanuel Saez, Nicholas Turner, Danny Yagan (2017) Mobility Report Cards: The Role of Colleges in Intergenerational Mobility, mimeo, Harvard University.
- Clotfelter, Charles T. 2010. Introduction. In *American Universities in a Global Market*. Edited by Charles T. Clotfelter. Chicago: The University of Chicago Press.
- Cole, Jonathan R. 2009. *The Great American University: Its Rise to Preeminence, Its Indispensable National Role, Why It Must Be Protected*. New York: Public Affairs.
- Dittmar, Jeremiah E. 2011. Information technology and economic change: the impact of the printing press. *The Quarterly Journal of Economics* 126 (3): 1133–1172.
- Eble, Alex and Feng Hu. 2022. Signals, information, and the value of college names. *Review of Economics and Statistics*, forthcoming.
- Epple, Dennis and Richard E. Romano. 1998. Competition between private and public schools, vouchers, and peer-group effects. *American Economic Review* 88 (1): 33–62.
- Geiger, Roger L. 1986. *To Advance Knowledge: The Growth of American Research Universities, 1900–1940*. New Brunswick, NJ: Transaction Publishers.
- Goldin, Claudia and Lawrence F. Katz. 1998. The shaping of higher education: the formative years in the United States, 1890–1940. National Bureau of Economic Research Working Paper No. 6537.
- Graham, Hugh Davis and Nancy Diamond. 1997. *The Rise of American Research Universities: Elites and Challenges in the Postwar Era*. Baltimore, MD: The Johns Hopkins University Press.
- Gruber, Jonathan and Simon Johnson. 2019. *Jump-Starting America: How Breakthrough Science Can Revive Economic Growth and the American Dream*. New York: Public Affairs.

- Herbst, Jurgen. 1982. *From Crisis to Crisis: American College Government, 1636–1819*. Cambridge, MA: Harvard University Press.
- Hoxby, Caroline. 2009. The Changing Selectivity of American Colleges. *Journal of Economic Perspectives* 23 (4): 95–118.
- Hoxby, Caroline and Christopher Avery. 2013. The missing “one-offs”: the hidden supply of high-achieving, low income students. *Brookings Papers on Economic Activity* Spring: 1-65.
- Kane, Thomas J. and Peter R. Orzag. 2003. Funding Restrictions at Public Universities: Effects and Policy Implications.
- Karabel, Jerome. 2006. *The Chosen: The Hidden History of Admission and Exclusion at Harvard, Yale, and Princeton*. Boston, MA: Mariner Books, Houghton Mifflin Company.
- MacLeod, W. Bentley and Miguel Urquiola. 2015. Reputation and school competition. *American Economic Review* 105 (11): 3471–3488.
- MacLeod, W. Bentley and Miguel Urquiola. 2021. Why Does The U.S. Have The Best Research Universities? *Journal of Economic Perspectives*, 35(1), 185-206.
- Metzger, Walter P. 1955. *Academic Freedom in the Age of the University*. New York: Columbia University Press, 1961.
- Mokyr, Joel. 2002. *The Gifts of Athena: Historical Origins of the Knowledge Economy*. Princeton, NJ: Princeton University Press.
- National Center for Education Statistics. 1993. *120 Years of American Education: A Statistical Portrait*. Unpublished paper. U.S. Department of Education Office of Educational Research and Improvement.
- Romer, Paul M. 1986. Increasing returns and long-run growth. *Journal of Political Economy* 94 (5): 10002–10037.
- Rudolph, Frederick. 1962. *The American College and University: A History*. Athens: The University of Georgia Press, 1990.
- Slosson, Edwin E. 1910. *Great American Universities*. New York: The MacMillan Company.
- Smith, Thomas E. V. 1889. *The City of New York in the Year of Washington’s Inauguration, 1789*. New York: Anson D. F. Randolph & Co.
- Squicciarini, Mara P. and Nico Voigtlander. 2015. Human capital and industrialization: evidence from the age of enlightenment. *The Quarterly Journal of Economics* 130 (4): 1825–1883.
- Synnott, Marcia Graham. 1979. *The Half-Opened Door: Discrimination and Admissions at Harvard, Yale, and Princeton, 1900–1970*. New Brunswick, NJ: Transaction Publishers, 2010.
- Tewksbury, Donald G. 1932. *The Founding of American Colleges and Universities Before the Civil War: With Particular Reference to the Religious Influences Bearing Upon the College Movement*. Mansfield Centre, CT: Martino Publishing, 2011.
- Urquiola, Miguel. 2020. Markets, Minds, and Money: Why America Leads the World in University Research. Harvard University Press.
- Veysey, Laurence R. 1965. *The Emergence of the American University*. Chicago: The University of Chicago Press.
- Whitehead, John S. 1986. How to think about the Dartmouth College case. *History of Education Quarterly* 26 (3): 333–349.