# “Worth It?”: An Analysis of Tuition Prices for Institutions of Higher Education

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## Abstract

The purpose of this research paper is to explore the factors that drive the rising prices of higher education and to further break down the various market forces and strategic considerations that contribute to tuition pricing. The rise in tuition prices and amplifying concerns with college affordability motivated our interests in understanding the ways that institutions of higher education are allocating their students’ tuition fees. This paper aims to use the case study method to understand how tuition prices are governed by higher education institutions by delving into the decision-making process of pricing academic services under pressure from competitive markets and in light of institutions' strategic positioning. Harvard University, an elite, private non-profit four-year research university, serves as the case institution of this investigative paper. By conducting expert interviews and carrying out qualitative research methods, this empirical-conceptual paper will explore how the pricing mechanisms of higher education institutions are established. Using the unique case study interview data, existing literature, and archival financial records, the collected evidence advances research on how tuition prices are governed. The paper puts forth explanations for how tuition costs are determined in the context of academic markets and the varying revenue sources of Harvard University.

## The Harvard College Honor Code

*Members of the Harvard College community commit themselves to producing academic work of integrity – that is, work that adheres to the scholarly and intellectual standards of accurate attribution of sources, appropriate collection and use of data, and transparent acknowledgment of the contribution of others to their ideas, discoveries, interpretations, and conclusions. Cheating on exams or problem sets, plagiarizing or misrepresenting the ideas or language of someone else as one's own, falsifying data, or any other instance of academic dishonesty violates the standards of our community, as well as the standards of the wider world of learning and affairs.*

***We affirm our awareness of the standards of the Harvard College Honor Code and ensure the integrity of the work presented in this project***.

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## Introduction

With the start of the 2020-2021 academic year, there has been growing debate over continuously high tuition costs sustained throughout American colleges amidst the COVID-19 pandemic. However, many colleges and universities have frozen their tuition for the 2020-21 academic year; the pandemic in fact appears to have brought a halt to a steady thirty-year rise in average tuition prices in both public and private four-year institutions (The College Board, 2020). While much attention has been brought to the debate over whether or not tuition should be lowered, this controversy also raises other pressing questions: what determines the sticker price of higher education and why has it risen so sharply? To understand current debates about tuition costs, we must first examine the dynamics involved in the pricing of higher education institutions from an economic framework.

The US Department of Education recognizes the growing demand for a college education, as seen through the escalating value of a college degree in the job market. Compared to those with only a high school diploma, graduating with a bachelor's degree is associated with an increase of 66 percent in lifetime earnings (U.S. Department of Education, 2020). Even so, there is the looming concern of higher college prices rising even more rapidly than inflation rates. A variety of scholars have attributed these rising tuition prices to changes in market structures for American higher education since the 1940s. Caroline Hoxby, for instance, has found that the geographic integration of formerly isolated markets for higher education over the past century has generated greater intra-market competition, explaining over 50% of price increases in real terms since the 1950s for private colleges and about 15% for public colleges (Hoxby, 1997). These findings prompt further investigation into the interaction between market forces and higher education institutions, which can have impacts not only on college affordability, but also on future prospects of young students hoping to complete a bachelor's degree.

However, while market forces and competition provide a useful framework to understanding rising tuition costs, differences in revenue generation can also have a profound impact on the pricing of higher education. In fact, tuition only accounts for a comparatively small share of the revenues of both public and private non-profit four-year universities in the United States, which also comprises state funds, endowments, gifts, in addition to a variety of other sources (Teixeira & Shin, 2020). Still, a study conducted by Patton demonstrates that students are prone to believe that tuition prices are the primary source of revenue for their education (Teixeira & Shin, 2020). What this illustrates is that while students are acutely aware of the price for their education, they might not fully be aware of its costs—despite the exorbitantly high prices, students are still only paying for a share of their education (Archibald & Feldman, 2014). Thus, analyzing the governance of tuition prices must also take into account the availability of alternative sources of revenue that effectively pay for the cost of education, as well as strategies that institutions may employ to gather them.

Therefore, while both of these approaches provide insights into the mechanisms guiding tuition prices, there appears to be a gap in present scholarship regarding the relationship between the effect of market forces and existing revenue streams in the administrative approaches to pricing for each institution. Within a context of great complexities regarding the mechanics of higher education markets and the differences in cost and value for their proposed services, we found little qualitative research on the administrative decision-making process that entails the determination of tuition prices. Therefore, we intend to bridge the gap between existing scholarship on market forces and sources of revenue for higher education with the governance of tuition costs from the perspectives and considerations of administrators. To do so, this investigation will focus on the case of Harvard University, an elite, private non-profit 4-year research university, to explain the governance of pricing decisions within the institution's fiscal and financial structure. The purpose of this study is to navigate the relationship between market forces and their impact on the determination of tuition pricing by administrators. Through empirical research, the overarching research question is *how do market forces and positioning approaches affect the governance of the pricing of higher education institutions?* Furthermore, the key sub-questions are: (1) How much power do administrators have in governing their own tuition prices? (2) What has driven tuition prices within institutions in the past years? (3) How has COVID-19 impacted the governance of tuition costs?

## Literature Review

Over the past century, a broad range of literature has been produced to explain the pricing mechanisms of higher education. Simply put, "higher education is a business": it sustains itself by using inputs to produce educational services and knowledge to be consumed by students and society alike (Winston, 1999). As in other economic markets, universities are subject to competition, considerations in costs and revenues for long-term viability, and face constraints in their production. For this reason, both for-profit and non-profit institutions alike must make strategic considerations in their pricing and the allocation of available resources in order to best compete within their market structure and fulfill their respective missions (Winston, 1999). In the following sections, we evaluate how tuition pricing is affected by the competition within higher education markets, revenue generation through alternative sources, and also through academic positioning approaches. In this manner, we aim to evaluate how tuition pricing is governed according to this range of variables.

1. Competition in higher education markets

The higher education market has distinct characteristics that distinguish its institutions from regular businesses, which in turn affects their pricing mechanisms. First, the diverse nature of higher education services accounts for differences in levels of competition between institutions and the internal structures of markets. The market for higher education is highly fragmented due to great diversity in the characteristics of the services offered by higher education institutions—for this reason, they face greater competition for students, faculty, and funding among their niche markets (Teixeira & Shin, 2020). As a result, institutional success may depend on the degree to which universities are able to garner the greatest number of high-quality inputs.

Primarily, higher education competes over students as customers, thus encouraging higher expenditures. With schools needing to compete with each other, one major contribution to the growth in student enrollment comes from the luxurious amenities that many campuses have invested in as described in “Lazy Rivers and Student Debt” (Woodhouse, 2015). The “student services” such as athletic fields, climbing walls, and other recreational upgrades are eye-catching for prospective students and influence their decision to enroll. When we have institutions that compete for increased enrollment and revenue through the addition of recreational amenities, a problem in higher education arises — the principal-agent theory. In the case of the lazy rivers and amenities built on these campuses, the agent (the institution) makes this decision for their own self-interest which is not the same as the interest of the principal (tuition payers) (Martin & Gillen, 2009). The budget of the institution is poorly allocated, wherein the people that are paying the tuition are not the ones choosing where the funds are being spent. The new facilities are exquisite but contribute greatly to an increase in the students' tuition, as the price tags for these expenses are high. Therefore, competition over students as customers is prone to increase institutional costs, and consequently the price that students must pay for their services.

Furthermore, higher education institutions' competition over a variety of non-monetary inputs also induces considerations in pricing. As discussed in Rothschild and White's framework, colleges rely on students as consumer-inputs, meaning that the quality of an institution's education is heavily dependent on the quality of its students (Rothschild & White, 1995). Therefore, in order to raise their competitiveness, institutions are encouraged to increase their selectivity, generating excess demand in order to have greater control over the quality of admitted students. To this end, Winston argues that it is favorable to increase sticker prices in order to increase discrimination and subsidization strategies—by keeping net prices low for high achieving students, universities are able to buy the attendance of higher-quality students and hence increase the value of their services (Winston, 1999).

Similarly, as institutions compete over faculty, they are encouraged to set efficiency wages above the market-clearing rate in order to generate longer queues of candidates from which they can select (Winston, 1999). This, coupled with increasing costs of highly-educated labor, implies that in order to effectively compete in markets, costs incurred to institutions increase (Winston, 1999). Therefore, evidence suggests that competition for inputs and market dominance drives institutions to pursue higher sticker prices as a strategy to compete over student inputs and dominance over their respective markets.

Thus, existing literature implies that the situation of higher education institutions within their respective markets induces strategic considerations in the governance of tuition prices. Under a market-led framework, a rise in tuition fees can be explained by the greater demand for institutional revenues to put universities in a better position for competing within their market segments, while also giving rise to principal-agent dilemmas which may limit individual's accessibility to higher education.

2. Revenue generation and monetary inputs

However, tuition is only one of a wide range of revenue sources that universities rely on in order to provide their services. Through institutional subsidies, state appropriations, and student-specific subsidies, universities are able to charge students a price that only covers a fraction of the cost of their education. As found by Archibald, on average students tend to cover less than half of the cost of their education (Archibald & Feldman, 2014). In fact, he considers higher education to be "one of the most heavily subsidized economic activities in the nation" (Archibald & Feldman, 2014). Thus, the difference between the cost of higher education and the sticker price of tuition prompts the question of (1) how universities are granted access to alternative sources of revenue, and (2) what is taken into consideration in the tuition setting in their light.

First, differences in the mechanics of revenue generations by different institutions must be considered. In *Budgets and Financial Management in Higher Education*, Barr argues that dependence on particular sources of revenue varies significantly between institutions, even those of the same type (Barr & McClellan, 2017). However, she acknowledges that public and private institutions exhibit the greatest variance of support due to a different degree of state-appropriated funds. Furthermore, the findings of the Almanac of Higher Education also suggest that the share of revenue comprising tuition prices varies between public and private institutions. In particular, their 2011 study demonstrated that there is a gap between public 4-year institutions to private non-profit 4-year institutions, in which tuition accounted for 19.6% against 29% of total revenues, respectively (Teixeira & Shin, 2020). Thus, despite competing in the same share of the market, this variation implies that four-year public and non-profit private institutions of the same type may exhibit a different degree of dependence on state funds, prompting the investigation of different strategies for revenue generation and tuition setting in these different institutional contexts.

Finally, it is necessary to comprehend the mechanics of tuition setting within the context of alternative revenue sources. As previously noted, Barr recognizes that the makeup of university cash-flows varies significantly from institution to institution, but the sources of revenue tend to be similar. In addition to tuition, state-appropriated funds, endowment funds, gifts, grants, and other student fees comprise a large part of universities' operating costs. While state-appropriated funds have generally been the primary revenue source of public universities, they still play a role in private universities, where they may be restricted to serving state priorities or may come in the form of financial grants to students. Endowment funds, on the other hand, are currently more significant as a revenue source for private institutions, although it has increased in importance for public institutions where state support has been decreasing. Student fees are another revenue source determined by the university, and they are often used to fund specific programs or activities. Similarly, grants and contracts are restricted funds that provide direct support for the operating costs of their respective research activities. Alumni gifts have also become an increasingly important source of revenue, consisting mostly of annual giving, gifts directed at specific projects, and long-term campaigns for broad institutional priorities and projects. There is a wide variety of other miscellaneous sources of revenue, but this accounts for smaller shares of school budgets (Barr & McClellan, 2017). Therefore, differences in state support between institutions and the availability of offering state-sponsored programs for grants may be considerations in the public and private sector alike.

Therefore, it appears that mechanisms for tuition setting differ according to the context of revenue cash flows at particular schools. However, Barr's acknowledgment of the variation across institutions into how exactly budgets are made up prompts the questioning of how accessibility to funds may differ between different types of institutions, particularly between the public and private sector. Furthermore, this diversification in revenue sources also entices the question of how the administrators of higher education institutions choose to tap into different sources of revenue. Thus, in addition to considerations regarding the competition within markets, literature on higher education budgets indicates that revenue sources can also guide, or even constrain the tuition setting process.

3. Academic positioning, administrative strategies, and governance of tuition prices

Analyzing market forces and revenue streams thus places into consideration the influences and constraints that universities face in determining tuition prices. However, the decision-making process behind the effective setting of tuition prices remains unanswered. Through the study of governance of higher education institutions, the interaction between the management of university endeavors and their institutional mission is explicated. As defined by Hirsch and Weber, governance of higher education institutions entails the formal and informal arrangements that determine the distribution of power and authority over decision-making (Hirsch & Weber, 2001). As research universities engage in strategic planning, a variety of actors including departments, faculty, president, and board overseers, share governance over vision and exercise varying degrees of authority over the decision-making process. To this end, the administration of funds is essential to both strategic budgets for project implementation, and to annual operating budgets that fund ongoing operations (Hirsch & Weber, 2001). Therefore, budgeting highlights the importance of revenue streams in financing both routine and strategic endeavors in higher education institutions and fulfilling institutional missions over the long term.

Furthermore, the governance structures of higher education institutions and the interaction between revenue generation and strategic planning also prompt the question of which actors within institutions can effectively determine tuition prices. With a wide variety of members sharing governance over decision-making, academic positioning also plays an important role in determining strategic and operational budgets. In fact, empirical findings by Hemelt suggest that even the extent of academic offerings can add financial costs to universities, as instruction in pre-professional programs and in fields where graduates have higher expected earnings proves more expensive than fields in English and Mathematics (Hemelt, Stange, Furquim, Simon, & Sawyer, 2018). Thus, governance over academic positioning demonstrating that universities' academic decisions may also influence budgetary decisions, and consequently garners implications for tuition costs.

Yet, the question remains over with whom rests the ultimate authority to manage tuition prices. While various institutional actors may govern strategic decisions and thus alter the demand for funds, the decision-making process over the role of tuition prices in revenue streams is still undetermined. While Barr states that the role of a budget manager is one of gathering fiscal resources to meet the educational mission of an institution, considerations over how tuition fits into these calculations are often left out of the literature (Barr & McClellan, 2017). The degree and manner in which institutions are able to effectively govern these tuition prices are thus not yet qualitatively explained by the existing scholarship on the matter.

Thus, the existing literature illustrates the countless complexities involved in financing higher education and the mechanics of setting tuition prices. While considering isolated frameworks provides insight as to how competition within markets, revenue generation, and institutional mission may influence budgetary considerations, there appears to be little discourse regarding the actual strategic considerations of administrators of higher education institutions. Quantitative models and research give insight into the financial role of tuition within higher education institutions, but there is little qualitative research on how that fits into institutional missions.

This leads us to the research question of *how do market forces and positioning approaches affect the governance of the pricing of higher education institutions?* Through an empirical research project to collect qualitative data on the pricing mechanisms of higher education institutions, this paper seeks to evaluate existing economic models and empirical findings regarding pricing mechanisms in institutions, weighing them against the perspectives of those making these decisions in real life.

We expect that by approximating discourse to current conceptual theories of higher education pricing, this paper will demonstrate the significance of various pricing mechanisms in determining the sticker price of individual institutions, additionally pinpointing different strategies for resource allocation. We hope our findings will help guide further research in this field, seeking to ameliorate the decisions and practices of both administrators and policymakers alike. Finally, we seek to evaluate whether or not the high price for college is truly justified, and if better guidance in pricing can promote greater access to higher education.

## Methods

The case study method, a qualitative research approach within the social sciences, is the chosen research method for this study as it allows for a close examination of a single institution within a particular contextual setting. Harvard University, an elite, private non-profit four-year research university, was carefully researched and investigated in-depth. To address the key factors influencing the pricing decisions made by higher education institutions, we believed it was most appropriate to use a mix of methods of both analyzing publications and conducting expert interviews. The two-part research methodology that we have chosen to engage in includes (1) utilizing existing literature and financial records to understand the theories, practices, and forces in the field of higher education affecting actual pricing decisions made today and (2) conducting expert interviews with Harvard University administrators that directly deal with the decision-making process of tuition pricing.

In the beginning stages of the research process, we explored important scholarships surrounding the topic to establish a detailed understanding of the existing literature. Initially, the overwhelming number of articles and publications available on the topic complicated the framework of the paper. However, only the most relevant arguments and theories were teased out from the large pool of literature, which narrowed the scope of the factors that are explored through this research paper. The contributions from the publications guided us towards the overarching topic of the governance of pricing of educational services at higher education institutions, and the major focuses of the research are the trends in pricing and value of higher tuition costs in the competitive market, revenue-generating sources of higher education institutions, and the governance of the revenue sources that lead to the decisions on pricing mechanisms.

In particular, the literature regarding the structure of higher education markets also provided a framework for the development of our research design and choice of a case study model. As previously noted, higher education institutions have different institutional missions, accessibility to alternative sources of revenue, and degrees of market competitiveness. However, the gap in the literature addresses the governance of tuition prices. Thus, by using a case study methodology, we plan to situate the fiscal and financial context of our university of choice and use expert interviews to illustrate the gaps between its context and the existing literature. Under this framework, we plan to identify how mechanisms highlighted in the literature influence the pricing decisions of our chosen university. While these results may not be generalizable, the segmentation of higher education markets suggests that they might be indicative of similar mechanisms among peer institutions.

In the pursuit of bridging the gap between the existing theories and information gathered in the literature with the pricing decisions of administrators at the case institution of Harvard, we plan to conduct semi-structured interviews with university administrators that serve in roles as contributors to the pricing decisions of the educational services of their respective institution. Participants of the interviews must serve a departmental role that is relevant to aiding the pricing decisions being made in the institution they represent. The sampling scheme that we aim to conduct the interviews through is snowball sampling, which would rely on initial participants providing referrals for additional participants. This method of sampling is most suitable for getting connected to additional administrators and building connections through referrals.

The expert interviews that we aim to conduct revolve around the case study of an elite four-year college, in particular Harvard University. The interviews with administrators will uncover useful insights about Harvard's governance structures over their revenue sources and pricing of educational services. We do realize that the information they choose to disclose may be limited due to the sensitivity and privacy of the topic. Since the interviews are conducted through virtual Zoom meetings, recording the interview under the interviewees' consent is possible.

Using a semi-structured interview, the questions prepared in the appendix below present open-ended questions that will guide the discussion of the interview. Any background information about the interviewee will first be uncovered; these pieces of context include their administrative position, responsibilities, and years of experience in the position or field. The essential themes addressed by the interview questions include revenue sources of the university, market forces from competition or rankings, determination of tuition costs, operating costs, COVID-19 considerations, and yearly price adjustments. These general questions will steer the interview in the direction of variables addressed in our research question and sub-research questions. During the interviews, it will be crucial to ask clarifying questions to ensure our understanding of the information being communicated. The purpose of conducting the interview is two-fold: (1) to establish the areas of exploratory research given the themes that are unveiled and (2) establish links between practical pricing decisions and the existing grounded theories. The expert interviews serve to provide qualitative data in which typological analysis can be further carried out.

Following the conclusion of all interviews, the themes and findings that emerge will be further explored and analyzed. The interview responses, if recorded using the Zoom transcript, can be grouped by themes. With NVivo, a qualitative data analysis software, the responses could be coded to find similarities in the responses and be grouped by observed comparisons. If no interview recordings are created, the responses to each specific question will be grouped based on connections we observe clearly. After distinguishing between the various themes addressed through the interview questions, we will draw the ties and inspect how the current literature and newly collected qualitative data compare. The related information found between the interview responses of administrators from Harvard University will be particularly useful to investigate further.

## Limitations and Positionality

There may be some potential limitations in the chosen research methodology. For any case study research, the two main caveats are credibility and generalizability. In order to boost the validity and reliability of the study at hand, we will rely on triangulation wherein we will strive to identify evidence from different sources that point to the same findings, thus increasing credibility. Next, the analytic generalization of case study findings is notoriously challenging. Given that this is a single-case study, the shortcoming of the research is in the transferability to institutions of different contextual backgrounds. Using the method of the single-case study only allows us to intensively study one institution which has its own characteristics. However, even when no generalizations can be made, there are potential overlaps with Harvard and its peer institutions, like those in the Ivy League. This indicates that the same findings could extend to other institutions if similar case studies were conducted again.

Furthermore, since we are conducting expert interviews with Harvard administrators, the findings of this study will ultimately be drawn from the recorded qualitative interview data which are subject to biases. Stemming from the interactions between undergraduate students and the university administrator, one potential bias is the halo effect which is a type of cognitive bias. Our overall impression of the interview may be skewed by our relationship with the interviewee or our evaluations of the interviewee's status. The best way to minimize the influence of the halo effect is to slow down our reasoning process and not let impressions affect the conclusions drawn.

The other researcher bias that would likely apply is confirmation bias, one of the most pervasive forms of bias in research. Due to the extensive research we have done with the literature surrounding the topic, we are susceptible to confirmation bias which suggests that we may hypothesize the answers that the interviewee gives. The interview should not be used to directly confirm an existing theory unless that is what the interview response truly indicates. During the interviewing process, we should not make assumptions that would lead the interviewee towards confirming a proposed hypothesis, but rather, we can ask open-ended questions and listen intently to their responses.

Our paper does not attempt to prove causality as it is not apt in determining causal results. Within the wide variety of explanations that could fall within our given research topic, there could not be a direct causal relationship in which the variation in one factor causes variation in another factor. Furthermore, the qualitative data collected from a few expert interviews is insufficient to determine any causal findings. The findings are not generalizable, but there is no harm in this since every institution, no matter public or private, differs in its governance of pricing and administrative actions. The purpose of the paper is to identify some of the possible explanations of the research question given the interviews that are conducted. Since the paper is not causal, the findings will just shed light on any connections that can be drawn from the literature and interviews.

To address the ethical standards in the conduct of research, we understand that the informed consent process is one of the most important parts of doing research with human subjects. We must ensure that the objective of the research is made clear to our interviewees, and we must evaluate the ethical considerations of respect of confidentiality, anonymity, privacy, beneficence (do no harm), and voluntary participation. Being careful and responsible will help us as researchers conduct our study in accordance with all ethical principles.

Regarding the positionality of the research, we should stress our identities as students, and the implications that tuition prices have in our lives. As one of the largest expenses that we currently have, it could be the case that greater emphasis is placed on studying tuition costs rather than other potential costs of the institution, such as operating expenses of the institution's infrastructure. The rise in tuition costs makes it difficult for us to not take into account the difficulties that friends and classmates face with affording tuition costs. We are aware of the possibilities of biases at every phase of research, including the research design, data collection, data analysis, and plan to combat these biases with careful thought and reflection at every step. We will attempt to conduct interviews, record key information, and analyze the data without letting biases affect the study of the topic.

## Context

Given the distinctive characteristics of the case institution, an overview of the background information on Harvard University's finances and operating model is necessary. Firstly, Harvard University is a very large organization comprising twelve different schools. From an outsider's perspective, hearing Harvard would immediately remind them of the College, which suggests that Harvard College is very much at the core of Harvard University. The Harvard Faculty of Arts and Sciences includes Harvard College and only serves around 6,800 students at the undergraduate level. The scope of Harvard's finances is much larger than the College alone. At the graduate level, Harvard Medical School, Harvard Business School, Harvard Law School, and many other schools also serve thousands of degree candidates every year.

The annual budget of Harvard University can be broken down into operating revenues and operating expenses. The operating revenue sources for the 2020 fiscal year comprised 17% net tuition, 17% research, 46% philanthropy, and 20% non-academic sources (Harvard University, 2020). Overall, the operating revenue decreased by 3% due to significant revenue declines from the cancellation of executive education programs, room and board refunds, and slowdowns to campus activities like research (Harvard University, 2020). Due to these substantial financial effects from the COVID-19 pandemic, the support of funding from other revenue sources like donors became ever more important.

As seen in the report, the endowment distribution increased by 5% this year as a result of new gifts, but the endowment payout rate was kept at 5.2%, which is within the 5.0%-5.5% target range set by the University (Harvard University, 2020). The payout rate of the endowment must remain in accordance with the long-term plan as well as abide by the restrictions specifying the purpose of the fund (Harvard University, 2020). While some funds are unrestrictive in use, the majority of how the endowment funds are to be used is agreed upon by the donor. Each year, donations towards financial aid for students consist of one of the largest percentages for the specific use of a gift, further enabling the University to carry out its missions and generously distribute aid.

Looking at the other end of the budget, the main components of the fiscal year 2020 operating expenses were 52% people and 17% space, and overall there was a 3% increase in expenses (Harvard University, 2020). Harvard University hires thousands upon thousands of employees and manages an immense amount of space, consisting of hundreds of buildings and libraries, so it is no wonder that the expenses are high. This year, in particular, the compensation expense increased by $158 million from the previous year due to the Voluntary Early Retirement Incentive Program (Harvard University, 2020).

The COVID-19 pandemic had a heavy impact on the University's finances. The decisions to move students off-campus, refund room and board, move all teaching and research to virtual settings, and discontinue in-person events and programs have all resulted in immense operational losses. The University incurred a $10 million loss from operations in this fiscal year, showing a sharp year-to-year decline when compared to a $308 million surplus of 2019 (Harvard University, 2020). Even so, the University was secure in handling the financial losses. The various schools were positioned well in terms of sufficient liquidity, especially after years of replenished reserves since the Great Recession of 2008-09 (Harvard University, 2020). Harvard holds a strong financial capacity to cover the sudden losses. Not only that, the robust endowment and record number of gifts from donors have allowed the continued pursuit of Harvard's mission. In the midst of the pandemic, philanthropic support aided the granting of financial aid scholarships to students and continued to uplift academic excellence in research and teaching throughout the University.

## Findings

From our analysis of the qualitative data from expert interviews using the NVivo software, we were able to identify a variety of themes that were recurring in our discussion of tuition prices. Together, they not only help bridge the gap in the existing literature, but they also resonate with common motifs and theories in the literature. In sum, our findings emphasize the highly subsidized nature of higher education through Harvard's financial aid model, and that the price charged to students is not directly related to institutional expenses. Our interviewees highlighted how inflation influences pricing decisions from a year-to-year basis, but that as a whole, higher education institutions are tied to an inflexible, historic cost structure that heavily influences the base price of their services. In this section, we will explore in-depth responses for the overarching themes that recurred throughout the interviews, enhancing the evidence collected during our literature review and within Harvard's financial context.

1. Process for pricing decisions

The setting of tuition prices occurs in a decentralized manner within the university and occurs through individual schools' Tuition, Enrollment, Financial Aid (TEFA) process. Harvard College sits within the Faculty of Arts and Sciences (FAS), which is the entity responsible for setting tuition rates for undergraduate education for a given academic year. Together with the Financial Offices for the FAS, the Dean of the FAS is responsible for identifying and determining expected levels of Tuition, Enrollment, and Financial Aid for a given academic year. While they cannot be perfectly accurate, the role of the FAS is to provide a set of recommendations to target TEFA levels for the following academic year, to be approved by Harvard Corporation. Proposals are then pooled together towards the central level at the university. First, the proposal is sent to the Finance Committee within the Harvard Corporation, to later be approved by the Corporation Board. Both interviewees have emphasized how tuition setting involves one of the highest fiduciary responsibilities within the university, thus justifying the thoroughness of the tuition setting process. School recommendations are almost always approved by the Corporation, but having a thorough evaluation is necessary in order to ensure that the University is following a sustainable fiduciary path forward and that it is simultaneously acting in the best interests of its students.

2. Governance structures

The case of Harvard poses a very decentralized operating model with hierarchical governance structures. Officials of schools are responsible for their individual financial decisions, and they are the primary influencing body over their school's tuition, as is the case for Harvard College. However, in key financial decisions such as tuition pricing, governance is set quite high by requiring Corporation Board level approval. In this model, the Chief Financial Officers' primary responsibility becomes one of oversight, to ensure that schools are acting in a wise fashion, and also to help schools out of trouble.

3. Motivations for pricing

Tuition prices in modern times are highly constrained by historic pricing. Interviewees have reported that while educational costs are passed onto tuition, the cost structure of higher education, in particular at Harvard, makes the tuition price not exactly reflective of the costs of delivering instruction. While the gross sticker price at the moment is still at roughly $70,000, compared to peer institutions, Harvard's approximate cost per student is estimated to be over $100,000, which is made possible by its vast endowment. Unlike ordinary businesses, the costs of student experiences include a variety of other costs that are not directly related to students' participation. One interviewee has illustrated, for instance, how the expenses related to faculty go far beyond salaries, as institutions must heavily invest in labs and funding to provide adequate research opportunities, thus increasing institutional costs. Over time, this has led Harvard and other peer institutions to consolidate their cost structures based on this subsidiary model, and interviewees have reported that increases in one schools' price may motivate similar arrangements in peer institutions.

Within the framework of historic pricing, there are still variable costs that motivate yearly adjustments of tuition fees. The primary factor motivating rising tuition prices is inflation, which raises universities' operating costs and is thus passed onto students. Within higher education, this is usually measured by the Higher Education Price Index, which is typically higher than the ordinary Consumer Price Index and is motivated by rises in labor, foods, and services. However, there are other variable costs that may also increase institutional expenses, which may motivate a rise in tuition prices. Among them are new regulations, such as Title IV which demanded the building of compliance infrastructure, variations in the stock market which can cause fluctuations in the endowment, and also changes in institutional strategy or opting for more expensive fields of study that require vast infrastructure, such as engineering. However, interviewees have highlighted how Harvard may choose to tap into its endowment for such expenses, thus there is a varying degree over how much of these costs are passed onto students. Thus, it appears that institutions have been locked into an operating model that is only marginally affected by changes in institutional mission.

4. Influence of market forces

Competitiveness within the higher education market and the College's position within the market have shown to influence tuition prices. In particular, as the College faces a more competitive market than other graduate schools within the University, Harvard College has less autonomy in determining its rates and must be more mindful of market rates. However, it is important to note that this process is not discussed with peer institutions. Harvard belongs to the Ivy Plus Group, and officials meet regularly to discuss financial matters, but they are explicitly not allowed to disclose tuition rates or set any pricing deals as it would be unfair to students. However, when rates are announced, Harvard pays close attention to track records in pricing to try to better position itself in the upcoming year. In this manner, the school must consider not only its long-term sustainability, but also ensure they are being responsive to the market and keeping their competitive advantage.

Furthermore, one of our interviewees highlighted a unique aspect of Harvard's financial structure that makes it more resistant to market influences, which is the robustness of the University's endowment. While it is still impacted by changes in the stock market, the endowment helps make the university less tuition-dependent and thus allows it to maintain a more traditional relationship with its students. On the other hand, more tuition-dependent schools such as NYU must be more mindful of emerging or changing student needs to ensure that students, the consumers, are willing to pay the full price the institutions are looking to charge. This is often translated into a greater focus on student experiences and recreational infrastructure, thus demonstrating how market influences not only influence tuition prices, but also schools' strategic positioning and investment decisions to retain a competitive edge in the market. Thus, dependence on tuition revenues for operational expenses appears to be a motivating factor not only for pricing but also in investment strategies.

5. Discounting

When considering families' response to tuition fees, it is also important to distinguish between the sticker price which is advertised by the university and the discounted price that students are expected to pay. Our interviewees emphasized that families have become increasingly sensitive to discounted fees, and have become more invested in optimizing for the best quality school at the lowest price. In Harvard's case, the university is committed to ensuring that all accepted students can attend, which is reflected by the fact that 58% of students are on financial aid, and the average student pays only roughly 40% of the full price of attendance.

This social compact grants students access to a highly exclusive product that they could not ordinarily afford, but it also reflects a decrease in revenues for the University. Essentially, the Faculty of Arts and Sciences is operating at a budget deficit, and this discounting model makes it that on average, taking on an additional student is costly and is not always financially sustainable. Luckily, the university is able to tap into alternative sources of revenue to cover these expenses, such as by decapping endowment funds, but it must be mindful of its decisions in order to avoid compromising the longevity of the endowment. Still, Harvard's highly subsidized model demonstrates that, unlike other universities, increasing enrollment may lead to a decline in revenues rather than an increase.

Finally, our findings reveal that this discounted model of operation impacts the sticker price for tuition as Harvard competes for top students. In particular, the revenue generated by students paying the full tuition price helps subsidize students that are on financial aid. While Harvard is not on the margin trying to compete with other universities, over time, increases in tuition and consequently other schools' greater capacity to offer financial aid also motivate increases in Harvard's tuition price in order to continue to attract higher achieving students. As a consequence, the difference between the full price and the discounted price of attendance increases. This finding is consistent with the framework of students as consumer-inputs highlighted in the primary literature (Rothschild & White, 1995). Thus, it appears that even most competitive schools take advantage of the heavily subsidized higher education cost structure to attract more qualified students, thus placing a greater burden on the sticker prices for tuition.

6. Competition and changes in the market

Our research revealed that when pricing for tuition, institutions must develop a sense of their competitive landscape and who their peers are. In their responses, our interviewees mentioned that to gain market share, schools often attempt to improve recreational infrastructure or offer better financial aid packages than their competitors. Furthermore, they have reported that they expect this competition to become more fierce in the coming years, as demographic changes will result in a smaller number of students attending college, leaving many institutions vulnerable to going out of business. While for Harvard that is not a possibility, the smaller number of college-aged students indicates that there will be a more fierce competition for the best students, particularly among elite institutions. This has already been reflected in recent tendencies for universities to position themselves as more competitive, and even position themselves in new markets by attracting international students.

7. Alternative sources of revenue

At Harvard, the main source of revenue comprises the University's endowment, which allows the institution to offer robust financial aid programs that ensure the survival of its subsidiary cost structure. However, interviewees reported that the institution has become overly dependent on the endowment funds, and they highlighted how Harvard and other institutions have sought to diversify their revenue sources, particularly after the 2008 recession. Harvard has sought to boost its revenues by expanding online education, which is offered worldwide for a fee, and executive education. In particular, executive education has grown significantly as a revenue source and has even led the Business School to build an additional building just to manage its funding two years ago. Other institutions, on the other hand, have opted to open additional campuses around the world to tap into new markets or run different business models. Therefore, Harvard and peer institutions alike have sought to diversify their revenue streams in order to prevent economic shortfalls and ensure the continuity of operations.

8. COVID–19

Finally, our research shows that the decision to increase tuition prices in light of the COVID-19 was not a direct reflection of the university's decline in revenues and increased costs. While the rate did increase at the margins, the raise was comparable to the 2-4% annual increases expected from inflation. However, this increase is not at all material compared to the overall change in operational costs. While the report for the Fiscal Year 2021 has not yet been published, interviewees reported that the university experienced declining revenues as a result of the decline in enrollments, decline in room and board payments, and its effort to maintain all staff. It also experienced an increase in costs, as the university has had to invest in its electronic capability and in training for faculty. Furthermore, the university's cost structure did not change, therefore it would be difficult to decrease tuition prices. In fact, interviewees emphasized how the small increase in tuition is in fact indicative that most costs caused by the pandemic were absorbed by the university rather than passed onto students.

## Conclusion

In evaluating how market forces and positioning approaches affect the governance of tuition prices, the evidence from expert interviews in the case of Harvard University points out that competition among institutions and changes in institutional strategy have a marginal effect on tuition prices, but that the historical cost structure of higher education institutions makes it difficult to significantly alter tuition rates. As an institution, Harvard must be wary of rates set by its competitors to ensure that it retains its market share, providing evidence of the importance of economic markets within higher education. In order to continue to compete for the most qualified students and ensure accessibility to the university, Harvard must be able to offer substantial financial aid packages, which are in part subsidized by students paying full tuition. Thus, changes in other universities' capabilities of offering a better package motivate similar increases at Harvard, illustrating the impact of students as consumer-inputs.

Furthermore, the hierarchical governance structure involved in setting tuition rates emphasizes the importance of this fiduciary responsibility, but the decentralized nature of the TEFA process highlights how individual schools have the primary role of determining tuition, enrollment, and financial aid rates for the best interests of its students and the institution. Therefore, changes in the institutional mission would need to be undertaken at the school level to affect the calculations made within the TEFA process and must be financially responsible to be approved by the Harvard Corporation. The process for tuition-setting at Harvard illustrates an important gap in the primary literature, which is the minucius nature in which tuition is considered in light of expected enrollments and financial aid commitments, and must be approved by a variety of bodies within the institution before being set within the market.

In addition, the case of Harvard also illustrates how the presence of alternative sources of revenue may influence the extent to which market influences impact an institutions' pricing decisions. Harvard's reliance on a historically robust endowment allows the university to run its highly subsidized model while minimizing variable costs that are passed on to students. In this manner, substantial increases in expenditure such as the COVID-19 pandemic are not reflected on tuition beyond the increase expected from inflation. Furthermore, the availability of vast endowment funds also decreases the university's dependence on tuition revenues for it to continue its operation. Other universities, on the other hand, must incur additional expenses in order to meet consumers' needs and be able to charge their rates. Thus, the case of Harvard also prompts the investigation of the extent to which tuition leaves institutions more vulnerable to market influences and competition.

Of course, Harvard's unique financial structure and its heavy dependence on endowment funds also create a challenge of generalizing its operating model beyond its case. While these findings may be generalizable to peer institutions among the Ivy Plus group, as cited by our interviewees, it is likely that institutions with different revenue sources may experience varying degrees of influence by market competition, and also varying approaches to student subsidization. In particular, this challenge prompts a direction for future research that would include evaluating differences between public and non-profit private four-year institutions. As revealed by the primary literature, public institutions count on a significantly larger proportion of funds from state appropriations, and thus have a different revenue profile from private universities. By investigating differences between these two different institutional profiles, it would be possible to better evaluate the effect of competition in determining tuition prices and the limitations of different sources of revenue generation.

Finally, our findings on the effect of the impending demographic cliff on college competition prompt the expansion of the literature on the development of alternative sources of revenue generation and diversification in the 21st century. While Harvard's initial shift towards online and executive education was prompted by the financial crisis of 2008 and its effect on the endowment, the current COVID-19 pandemic is likely to lead to changing operating models and the pursuit of new revenue sources to cover the added costs of online learning. However, together with the crisis, comes a new opportunity—as universities have struggled and succeeded in adapting to an online model, it is possible that finally, their underlying cost structures may be subject to change. While our research reveals that tuition has been constrained by rigid historical cost structures, this sudden change to an online environment may finally help institutions break free from high infrastructural costs and expand the reach of their services to increase revenue generation. Therefore, changing demographics and the paradigm shift caused by the COVID-19 pandemic suggest that there is interesting research to be done on changes in operational models for the future and that there is room for recommendations that will help schools to build new sustainable cost structures with greater accessibility. Still, only time will tell the direction that higher education institutions will take, but research made today may have a lasting impact on the American education system of the future.

## Appendix

### A. Interview Protocol

Block 1: Opening questions

- How long have you been working at Harvard University? What is your position and main responsibilities in your department?
- What degree of authority do you/or your department have over determining tuition prices for a specific school year? Which other authorities within the university also influence the pricing of tuition in a particular year?
- What percentage of your revenue comes from tuition, and which other sources account for the rest of your revenue?

Block 2: Influence of market forces and competition

- Do tuition discounting and financial aid affect your calculations for tuition fees? If so, how?
- Do considerations regarding the school's ranking and competitiveness within the market come into pricing decisions?

Block 3: Revenue generation strategies and budgeting considerations

- What factors motivate adjustments in tuition price from year to year?
- How do changes in institutional mission, investment considerations, and strategic planning affect strategies for revenue generation and tuition changes?
- Does the availability of alternative revenue sources or institutional guidelines place any constraints on the determination of tuition prices?

Block 4: Tuition considerations within the COVID pandemic

- What considerations were made when determining the tuition price for the 2021-academic year, in light of the COVID Pandemic?

<u>Block 5: Probing for influential frameworks for decision-making and possible follow-ups</u>

- What principles or framework guides your institution in determining the pricing of tuition costs?
- Has there been any literature or authorities, either within or outside your institution, that have influenced these principles?
- Are there any colleagues within your institution who you believe also exercise control over the pricing of tuition?

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