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Borrowing during a time of crisis:
Examining institutional debt during the Great Recession and COVID-19

August 2022

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Executive summary

Institutional borrowing, or the debt a college takes on as an organization, is an understudied but important tool for colleges to meet strategic goals. Widespread crises, such as the Great Recession and COVID-19, can impact the financial health of institutions and create instability that may alter debt-related planning or how colleges plan to access debt markets. In this mixed methods study, we examine how colleges make borrowing decisions during times of crisis.

We descriptively identify trends in borrowing during the Great Recession including increases in debt by research universities and a growth in the leverage rate of Historically Black Colleges and Universities (HBCUs) and public institutions. Additionally, we found that HBCUs and public institutions were more likely than their peers to significantly increase debt during the Great Recession. While high-borrowing institutions generally increased educational expenditures in the long run, we find evidence that high-borrowing HBCUs may shift expenditures away from education and related expenses, suggesting these institutions may have been forced to borrow during the Great Recession to maintain operations. Our interviews with chief financial officers (CFOs) at HBCUs reinforce these findings and contextualize the financial troubles some colleges faced, in part due to being historically underfunded.

The qualitative portion of our study also unlocks the black box of institutional borrowing. Our findings demonstrate how CFOs think about and strategize with debt, including how they use and structure debt, how they learn and understand from others' experiences, and the role they play in educating other stakeholders to get debt approved. There is significant variation across institutions in the strategies and uses of debt as well as the responsibilities of the CFO.

This study underscores the importance and potential impacts of borrowing. Given this, we recommend more research on this topic and improved oversight mechanisms that appropriately monitor debt.

Introduction

The discourse surrounding higher education and debt largely focuses on student loans. However, students are not the only ones indebted–colleges and universities often need to borrow funds and are among the largest borrowers in the nonprofit sector,[1] with the level of outstanding institutional debt continuing to rise.[2] In a process called debt financing,[3] universities borrow money from investors, that they pay back at a later date with interest, to fund large capital (i.e., infrastructure) projects, take advantage of arbitrage opportunities, or to improve their competitive position as part of a long-term strategy.[4] Although debt is an important tool institutions use to meet strategic goals, many higher education stakeholders have a limited understanding of the process of institutional borrowing, and there is only a small set of empirical research on borrowing practices and the effects of debt.

In this study, we focus on institutional borrowing decisions during times of crisis. Large shocks to institutions' finances like the Great Recession and COVID-19 shape the way colleges and universities operate. These changes include shifts in borrowing strategies and practices. We use a mixed methods approach to better understand borrowing practices and the impacts the Great Recession and COVID-19 had on borrowing strategies at the postsecondary level.

We have two goals for this paper. First, we demystify the borrowing process to help a broad set of higher education stakeholders understand the history of borrowing and the process by which it is done. The current state of institutional debt is the culmination of changing market forces and regulations. We provide an extensive background that explains how the debt markets evolved and the general process of how colleges engage these markets. Our goal is to provide greater insights for a broad range of higher education stakeholders to understand this important facet of institutional finances.

Second, through our research findings, which provide additional nuance into how borrowing decisions are made during periods of crisis, we seek to contribute to the broader understanding of how financial pressure impacts all aspects of institutional management. The qualitative portion of this mixed methods study includes interviews with institutional CFOs where we asked about their approaches to debt, the process of borrowing, and how COVID-19 and the Great Recession impacted borrowing decisions. The quantitative portion of the study includes descriptively examining borrowing practices across institutions, an event study analysis of how the Great Recession impacted debt and leverage, an exploratory analysis of factors contributing to large increases in institutional debt during the Great Recession, and difference-in-differences estimates of how borrowing patterns during the Great Recession are related to educational spending. In our analysis, we explicitly examine patterns across institutional characteristics as different types of institutions operate within different contexts. The

1 Dwight Denison, Jacob Fowles, and Michael J. Moody, "Borrowing for College: A Comparison of Long-Term Debt Financing Between Public and Private, Nonprofit Institutions of Higher Education," *Public Budgeting & Finance* 34, no. 2 (2014): 84-104.

2 Jon Marcus, "Why Colleges are Borrowing Billions," *The Atlantic*, October 2017, https://www.theatlantic.com/education/archive/2017/10/why-colleges-are-borrowing-billions/542352/.

3 In this paper, we use the terms "debt financing" and "institutional borrowing" interchangeably to mean debts that colleges and universities take on as organizations.

4 Dean O. Smith, "University Finances: Accounting and Budgeting Principles for Higher Education," JHU Press, 2019.

methodological appendix provides an overview of our analytic approach and modeling techniques. Not only do our findings broaden the literature on institutional finance, but they have implications for regulatory oversight and shared governance. Although students are not directly involved in the borrowing process, they are eventually impacted by debt decisions. By improving borrowing practices and financial oversight, institutions will be better equipped to make financial decisions that serve students.

The evolution of institutional borrowing in the 20th century

Debt provides colleges and universities with financial resources that operating expenses cannot cover, and institutions may prefer to issue debt even when they have the financial resources to fund a project in order to reserve current funds for other expenses.[5] Debt creates an opportunity to pay for the project upfront while money raised or donated on behalf of the project can be invested and eventually used to pay the debt and interest back over time.[3] By planning strategically and spreading the cost of a project over time, institutions can maintain their cash reserves. Debt also helps institutions make investments into their campuses, including maintaining and updating existing facilities. These investments are sometimes spurred by an institution's interest in growth but can also be driven by budget shortfalls that prevented maintenance over time. The importance of debt to fill these financing gaps has evolved as the facilities on campuses have grown and institutional budgets and funding streams have changed. Moreover, debt impacts colleges' finances both today and in the future, so the borrowing that happened 20 years ago is likely still being managed by institutions today. The history of borrowing is important to understand because of the potential implications borrowing decisions can have on the future financial health of an institution. In this section, we provide a history of policy decisions and macro trends that led to increased borrowing in the 21st century. It is important to understand the evolution of debt markets and debt-related regulations when considering the present-day patterns in institutional debt.

Colleges and universities entered into the debt market in the early 20th century. Borrowing was legalized with the passing of the Revenue Act of 1913, specifically allowing educational organizations to benefit from the tax exemption of state and local government debt.[6] Debt was uncommon until the 1920s, and even then, the higher education debt market remained small as institutions could receive federal funding for infrastructure, and many construction efforts had been delayed due to World War I.[7]

Debt financing became more prominent in the 1940s when institutions began borrowing for income-generating projects.[8] However, colleges and universities faced resistance because debt was viewed negatively and there was skepticism that new buildings would generate enough income to repay the debt.[9] Institutions also ran into legal restrictions

5 William F. Massy, "Optimizing Capital Decisions," *Resource Allocation in Higher Education* (Ann Arbor: The University of Michigan Press, 1996), 115-140.

6 P. A. Libby, "Historical Perspectives on University Debt Financing: Creative Financing for Higher Education Facilities and Equipment," in *State Higher Education Executive Officers*, 1985, 1-16.

7 Alex Katsomitros, "The Emerging University Bonds Market," 20 April 2018, https://www.worldfinance.com/markets/the-emerging-university-bonds-market. John D. Millett, *Financing Higher Education in The United States* (New York: *Columbia University Press*, 1952), xix-503. R. B. Stewart and R. Lyon, *Debt Financing of Plant Additions for State Colleges and Universities* (West Lafayette, IN: Purdue Research Foundation, 1948). J. Taylor, "College Revenue Bonds to Finance Self-Supporting Projects," *Journal of Finance*, 4, no. 4 (1949): 328-341.

8 Alex Katsomitros, "The Emerging University Bonds Market," 20 April 2018, https://www.worldfinance.com/markets/the-emerging-university-bonds-market.

9 John Russell, *The Finance of Higher Education* (Chicago: *University of Chicago Press*, 1954), 2.

as many states prevented universities from incurring debt.[10] However, following the introduction of the GI bill in 1944, many colleges and universities began experiencing post-WWII enrollment growth that required increases in capital expenditures. This was followed by the federal government introducing the College Housing Loan Program in 1950 that allowed schools to issue government bonds to construct student and faculty housing.[11] Borrowing was further propelled by the Higher Education Facilities Act in 1963 that issued loans for schools to construct academic buildings.[12]

Debt financing continued to increase in the 1970s as colleges began project-specific financing that was fueled, in part, by the removal of statutory restrictions limiting general revenue bonds.[13] Although the Tax Reform Act of 1986 increased the cost of debt financing by nonprofits with high endowments (mainly affecting private schools) by imposing restrictions on accessing tax-exempt debt, these restrictions were lifted with the passing of the Taxpayer Relief Act of 1997, thus creating more opportunities for private nonprofit institutions to access the tax-exempt debt market.[14] All schools subsequently began borrowing more, with research institutions borrowing the most. Furthermore, schools began to shift their capital structure toward a greater reliance on tax-exempt debt and less on taxable debt and equity. During this time frame, Congress also passed the Historically Black Colleges and Universities (HBCUs) Capital Financing Project in 1992, which allowed HBCUs to repair and construct facilities.[15]

Current trends in institutional borrowing by institutional characteristics

Levels of debt vary across different types of institutions. Although previous research suggests that colleges and universities prefer using internal financing when possible and that leverage is negatively related to revenue expectations,[16] there is likely differentiation across institutional characteristics. Although literature regarding higher education finance is extensive, comparisons between institutional characteristics and the effects of these characteristics on debt financing have received less attention. Some research has revealed that schools with larger enrollments and community colleges use less debt, while private schools take on more debt per student.[17] In this section, we descriptively examine borrowing trends.[18] These descriptive analyses informed our sampling approach and the interview content for the qualitative portion of our study, as well as our quantitative estimates of the relationship between the Great Recession, borrowing patterns, and institutional outcomes.

10 J. D. Long and A. M Weimer, "Summary of A Research Report on Financing of College and University Student Permanent Housing," *American Council on Education*, 1957.

11 R. B. Stewart and R. Lyon, *Debt Financing of Plant Additions for State Colleges and Universities* (West Lafayette, IN: Purdue Research Foundation, 1948).

12 R. S. Moore and D. W Field, "A Status Report: The Higher Education Facilities Act," *The Phi Delta Kappan*, 46, no. 6 (1965): 277-279.

13 G. A. King, R. E. Anderson, D. M Cyganowski, and P. J. Hennigan, "NACUBO Guide to Issuing and Managing Debt," *National Association of College and University Business Officers*, 1994.

14 Thad D. Calabrese and Todd L. Ely, "Borrowing for the Public Good: The Growing Importance of Tax-Exempt Bonds for Public Charities," *Nonprofit and Voluntary Sector Quarterly* 45, no. 3 (April 2015): 1-20, https://doi.org/10.1177/0899764015584064.

15 A. E. Hoffman, Federal Funding Upheaval: "The Impact on Blacks," *The Journal of Blacks in Higher Educatio*n 2 (1993): 123-126.

16 Harvey Rosen and Alexander Sappington, "What Do University Endowment Managers Worry About? An Analysis of Alternative Asset Investments and Background Income," June 2015, *National Bureau of Economic Research Working Paper*, https://ssrn.com/abstract=2618659.

17 Dwight Denison, Jacob Fowles, Michael J. Moody, "Borrowing for College: A Comparison of Long-Term Debt Financing between Public and Private, Nonprofit Institutions of Higher Education," *Public Budgeting and Finance* 34, no. 2 (2014): 84-104.

18 Finance data is adjusted to 2018 dollars using the Consumer Price Index to ensure comparability.

First, we examine differences across public and private institutions. Figure 1 (bar graph) shows that total debt has been rising since 2006 in both sectors and that private institutions hold significantly more debt than public institutions, as seen in the broader literature. However, as captured by the line graphs, the trend in debt per full-time equivalent (FTE) student is not as stable at private institutions. Although private colleges and universities hold roughly four times as much debt per FTE as publics, the amount appears to be less stable over time. Not only do private institutions hold more debt, but they are also more highly leveraged than their public counterparts. Figure 2 shows us that leverage (the ration between debt and assets) peaked at private institutions in 2009 at 0.36, but slowly returned to pre-Great Recession levels by 2018. Given that there is not a corresponding spike in debt in 2009, the increase in leverage during the Great Recession is likely driven by decreased asset value, including land value and an institution's endowment.

Figure 1. Total debt (bar) and debt per FTE (line) by sector

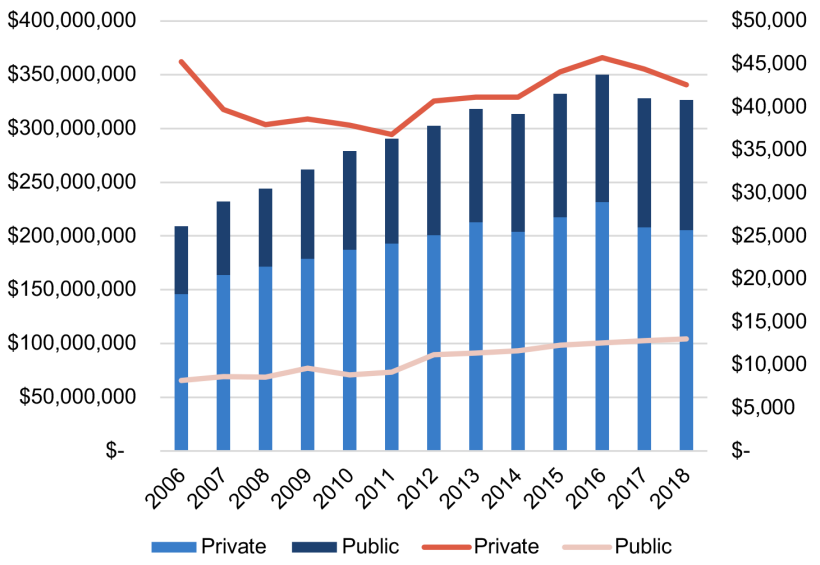
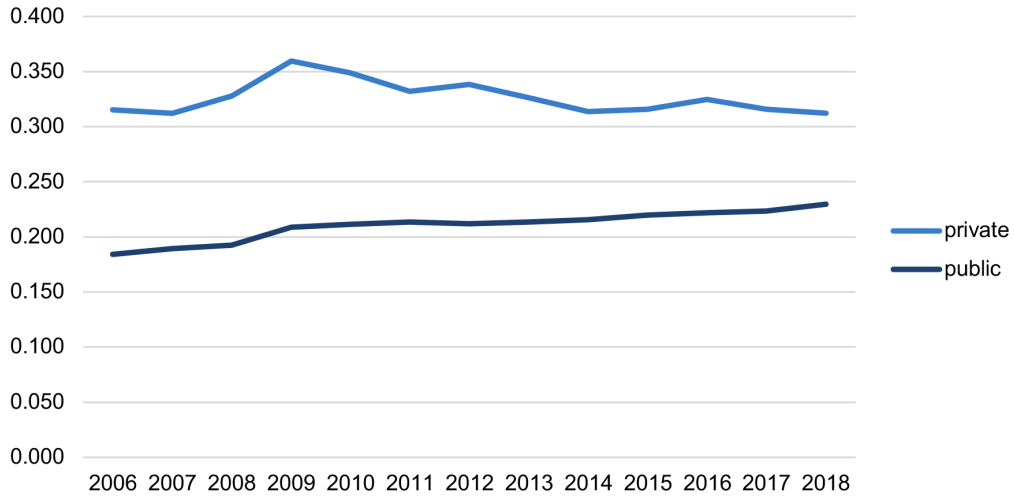


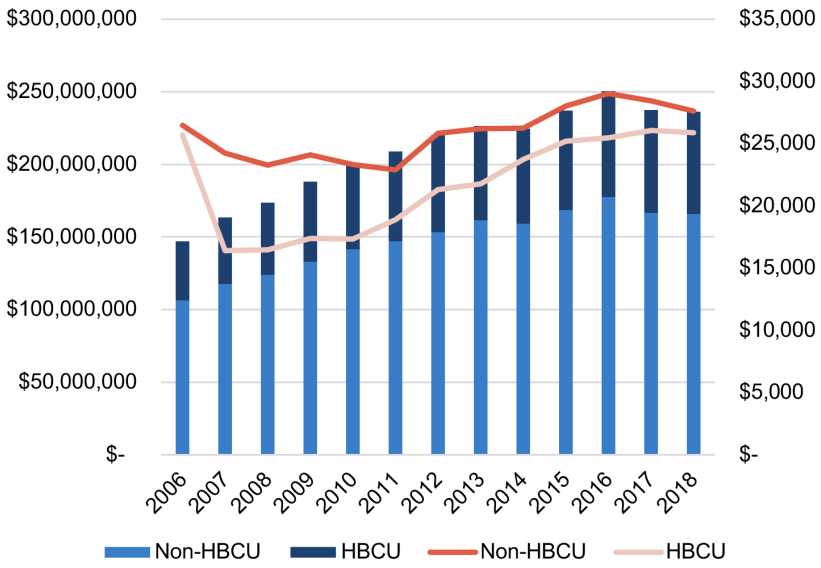
Figure 2. Leverage by sector



We know institutional characteristics play an important role in organizational behavior. For HBCUs, the population they serve and the historical inequalities in funding shape their current financial situation and their willingness and ability to access debt markets. The HBCU Capital Financing Program, which began in 1994, provides low-cost financing for capital structure spending. This federal financing program is how many HBCUs access debt markets as research suggests these institutions faced discrimination in lending markets.[19] One analysis of tax-exempt municipal bond issues revealed that underwriter fees are higher for HBCUs, and that these fees were worse for schools in the Deep South, particularly in Alabama, Mississippi, and Louisiana.[20] Additionally, HBCUs face higher transaction costs in secondary market trading. Taken together, this suggests that there is institutional discrimination happening in the bond market that disadvantages HBCUs.

We examine how total debt, debt per FTE, and leverage vary by HBCU status in figures 3 and 4. While HBCUs do not appear to deviate from their non-HBCU peers significantly in terms of debt per FTE outcomes, there is a large gap in total debt between the two groups that grows over time and a marked increase in the leverage ratio at HBCUs following 2009 which contributes to a persistently growing gap between the groups. This may reflect a use of debt that is unaccompanied by an increase in assets. For example, non-HBCUs may be strategically accessing debt markets to build new dorms, labs, or other physical assets on campus, while HBCUs may be borrowing in an effort to weather the financial hardships caused by the Great Recession, including covering operational needs. Alternatively, this divergence may reflect the higher costs to borrowing HBCUs face, which results in more debt costs per asset. This increase in leverage is concerning for the financial stability and health of HBCUs. The historical financial challenges that HBCUs faced have likely exacerbated the negative impacts of economic decline caused by the Great Recession and COVID-19.

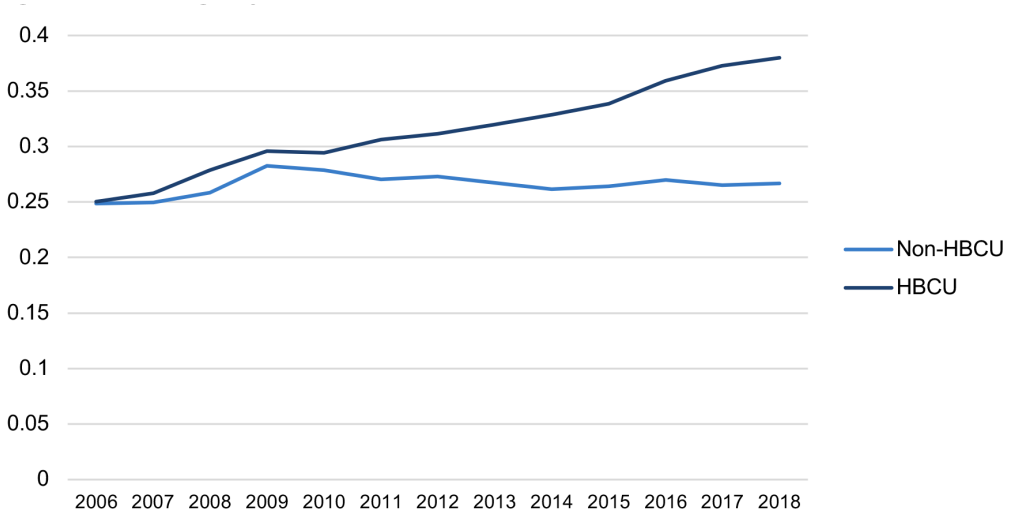
Figure 3. Total debt (bar) and debt per FTE (line) by HBCU status



19 Marybeth Gasman, "Comprehensive Funding Approaches for Historically Black Colleges and Universities," *Proceedings of HBCU Symposium: Setting the Agenda for Historically Black Colleges and Universities*, North Carolina Central University, Durham, NC, 2010. Autumn A. Arnett, "State of HBCUs," *Diverse Issues in Higher Education* 31, no. 23 (2014): 18.

20 Casey Dougal, Pengjie Gao, William J. Mayew, and Christopher A. Parsons, "What's in a (School) Name? Racial Discrimination in Higher Education Bond Markets," *Journal of Financial Economics* 134, no. 3 (2019): 570-590..

Figure 4. Leverage by HBCU status



Finally, we examine debt and leverage across Carnegie classification.[21] Figure 5 shows total debt across classifications as bars. It is clear that research universities hold the vast majority of debt, and this debt has increased substantially over time. There does not appear to be any relationship between the onset of the Great Recession and changes in borrowing at research universities. However, we see heterogeneity across the other six classifications both in their overall trajectory and the changes in debt during the Great Recession. Not only are master's and specialty institutions holding the most debt, they appear to have increased borrowing during the Great Recession. In the line graph, we see that research universities also hold the most debt per FTE, which has steadily increased over time. Specialty institutions vary considerably over time in this measure, which is likely due to the unique role they play in the postsecondary market. The decrease seen at specialty institutions during the Great Recession, followed by an increase in later years, may reflect a warehousing effect where individuals looking to upskill in workforce training enrolled during the economic downturn, thus decreasing the debt per FTE. Finally, leverage appears to peak in 2009 as expected and shown in Figure 6. However, colleges across classifications appear to have lowered their leverage following the Great Recession, except associate's colleges. These institutions, predominantly community colleges, appear to have increased leverage over time but are still less leveraged than four-year institutions.

21 We use the seven primary classifications which include "Associate's Colleges," where the highest degree awarded is an associate's, and "Primarily Associate's Colleges," where bachelor's degrees are awarded but the majority of degrees are at the associate's level. For additional information on the definitions of the seven groups see: https://carnegieclassifications.iu.edu/classification_descriptions/basic.php.

Figure 5. Total debt (bar) and debt per FTE (line) by Carnegie classification

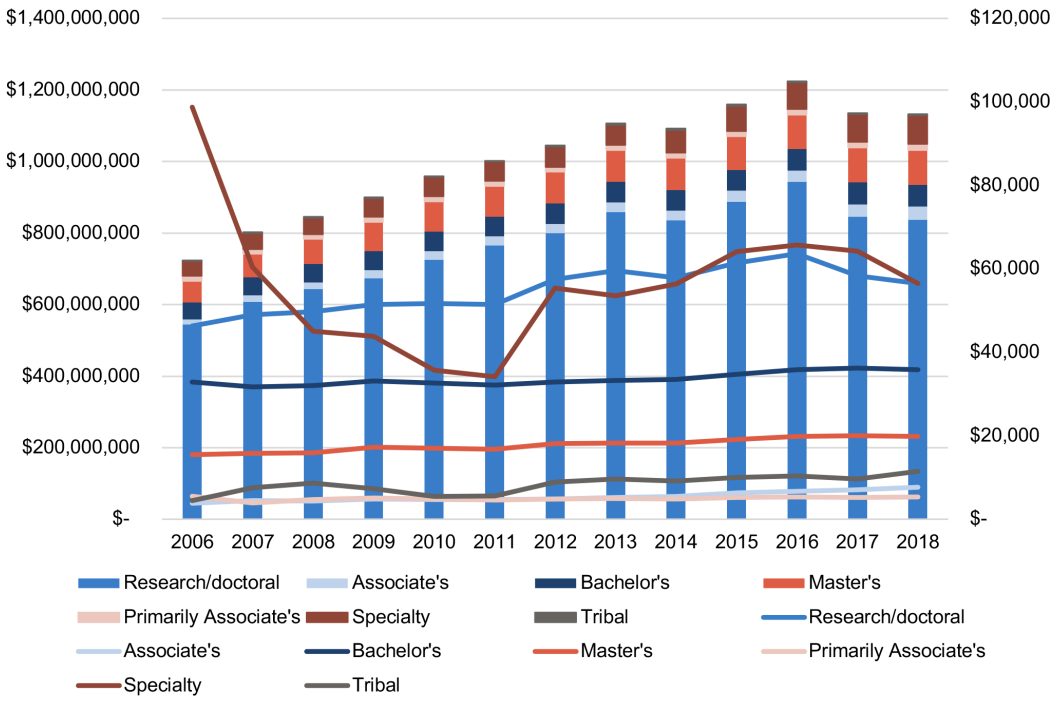
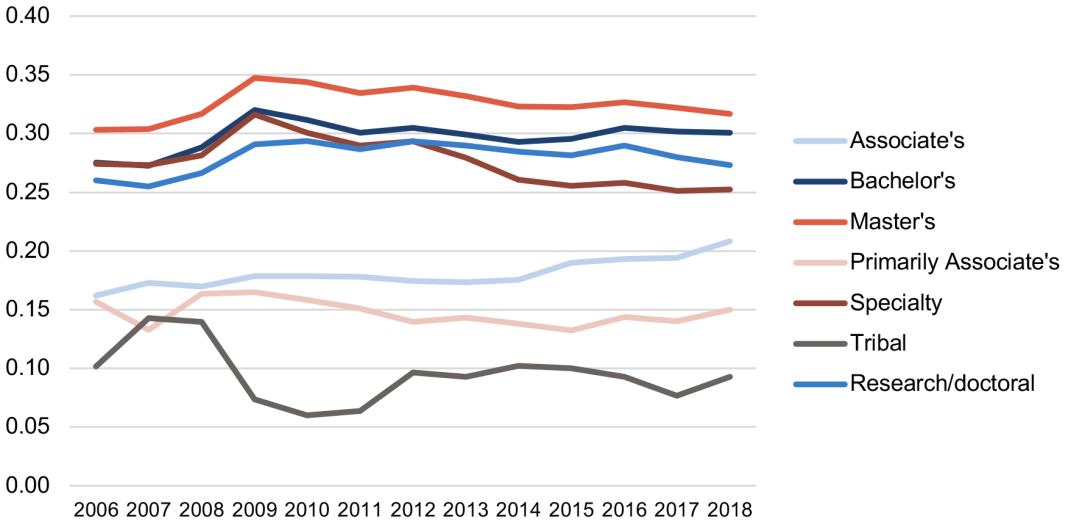


Figure 6. Leverage by Carnegie classification



Our event study estimates, presented in the appendix, largely confirm the overall increase in debt-related outcomes as well as an immediate increase in leverage in 2009, likely driven by the rapid fall in endowments and property values, and a stabilization after that. Observing these trends in debt and leverage across institutions was an important first step for informing our mixed methods analysis. We used these descriptive data for our qualitative sampling. Based on these findings, it was important to ensure we interviewed CFOs at HBCUs, public and private institutions, and across Carnegie classifications. We also sought to recruit CFOs from institutions with a range of debt levels and leverage ratios, as well as a mix of institutions that saw variable changes in these levels over time. In the next section, we present findings from our interviews that open up the black box of institutional borrowing and show how CFOs navigate the borrowing process.

These descriptive analyses also informed our quantitative analyses. In the final section of this paper, we examine patterns in borrowing during the Great Recession. First, we look at institutional factors related to large increases in borrowing during the economic downturn. We then examine the longitudinal relationship between institutional characteristics, high levels of borrowing, and key institutional outcomes. We provide additional context from interviews with CFOs that help understand how periods of crisis like the Great Recession and COVID-19 impact borrowing decisions.

The general approach to institutional borrowing

Debt is primarily a tool that fits within an institution's overall financial strategy. The decision to borrow is not made hastily, but rather engages a number of stakeholders to ensure borrowing aligns with the financial and strategic priorities of a college. Because the decision to borrow will stay with an institution for years to come as it repays the debt, leaders give careful consideration for how borrowing aligns with long-term goals and the financial outlook.[22] As such, many colleges create a debt strategy which explicitly documents how the college will approach debt-related decisions. Institutions should ideally work toward developing a formal debt policy that includes the institutional philosophy on debt, indications of who has authority to issue debt, who is responsible for debt management, criteria for how debt should be used, and types of debt that can be accessed. They should also create guidelines for determining circumstances in which debt will not be used. Debt policies should be flexible, changing as institutional circumstances require, and be revised every few years. Periods of crisis, such as COVID-19 and the Great Recession, can either highlight weaknesses in an institution's debt strategy or underscore the importance of having an explicit plan in place. In fact, as we show later in this paper, lessons learned from the Great Recession informed future debt policies that helped institutions during the early months of COVID-19. Here we outline the general borrowing process.

22 P. Tahey, R. Salluzzo, F. Prager, L. Mezzina, and C. Cowen, "Strategic Financial Analysis for Higher Education: Identifying, Measuring, & Reporting Financial Risks," *Sealy & Co., LLC; KPMG LLP; and Attain LLC*, 2010, 7.

The institution creates a debt strategy

In developing a debt strategy, the National Association of College and University Business Officers recommends that colleges and universities consider the following areas:

1. **Policies.** Schools should create policies that guide decision making, anticipate potential problems, and manage relations with internal and external parties.
2. **Debt capacity.** Higher education institutions must determine their limits for how much debt can be issued without negatively impacting their creditworthiness. Two common measures used to determine debt capacity include 1) percent of revenue to debt service and 2) ratio of debt to invest assets.
3. **Portfolio.** Colleges and universities should create a debt strategy that "lower[s] costs, mitigate[s] risk, optimize[s] credit ratings, and support[s] strategic priorities."[18] A debt strategy should thus consider different types of debt and their associated risks, when debt should be refunded or refinanced, and monitoring how projections match with reality (e.g., if generated revenue matches projections).
4. **Management.** Ensuring that business leaders have adequate resources to properly manage debt. The business or financial office should establish objective and key benchmarks to monitor their debt portfolio.

Once CFOs create a debt strategy, they bring their proposed ideas to stakeholders who are ultimately responsible for approving the CFO's finance decisions. When colleges and universities undertake debt, they are typically supported by several involved parties that help the institution from the planning to repayment stages.

Higher-education institutions use debt strategically to optimize their institutional objectives but vary widely in the level of financial risk they are willing to accept. In order to determine their debt policy and whether and how much to borrow, colleges and universities must carefully consider their preferences for the "capital structure" of their institution. Capital structure refers to an organization's financing methods, or the mix of revenue, assets, and debt that an organization holds.[23] Schools must determine how best to optimize their capital structure in a way that aligns with their strategic plan and best allows them to fund various campus projects. Schools can use a mixture of sources to fund their projects, but a school's goals and financial constraints will determine their preference for leverage—the ratio of debts to assets. Schools can choose to either fund projects using immediately available funds or by borrowing funds. Two main approaches have emerged in the nonprofit sector that dictate which combination of financing schools should use: static trade-off and pecking order. [24]

Option 1: Static trade-off approach

In the static trade-off approach, organizations aim toward an optimal level of debt by weighing the costs and benefits of taking on more or less debt. Institutions weigh the costs of borrowing or using internal funding (e.g., interest, fees) with the benefits of

23 Woods Bowman, "The Uniqueness of Nonprofit Finance and the Decision To Borrow," *Nonprofit Management & Leadership* 12, no. 3 (2003): 293-311, https://doi.org/10.1002/nml.12306.

24 T. D. Calabrese, "Testing Competing Capital Structure Theories of Nonprofit Organizations," *Public Budgeting & Finance* 31, no. 3 (2011): 119-143..

debt (e.g., greater liquidity). Debt allows schools to fund projects that are outside of their current financial restraints and can also lower the cost of projects. Schools can take advantage of lower interest rates on debt while simultaneously expecting higher investment returns from their endowment. Additionally, because debt is repaid over the lifetime of the project, the debt burden is reduced for the current generation of students while providing future benefits to students, faculty, and staff. Under this approach, increasing levels of revenue often lead to increasing the amount of debt an institution holds because high revenue allows the institution to maintain higher annual debt servicing costs. In other words, the more money an institution brings in from tuition, fees, auxiliary services (e.g., dorms), and other sources, the more the institution can afford in annual loan payments for capital projects.

The most severe cost of increased leverage is the potential for financial distress, especially if an institution cannot properly anticipate debt payback. In addition to the potential for institutional bankruptcy, financial distress could create reputation concerns. High leverage can also reduce financial flexibility, and budgets may need to be cut from other organizational areas (e.g., teaching) in order to make debt payments. Institutions must consider these risks when determining a debt strategy.

Option 2: Pecking order approach

In the pecking order approach, colleges and universities use internal financing to fund projects before turning to debt.[25] In contrast to the static-trade off approach, colleges and universities see increased revenue as reducing the need for debt, thus decreasing the schools' leverage. Internal funding can come from a wide array of sources including internal reserves and operating funds, fundraising campaigns, and state appropriations. This can occur for a variety of reasons including conservative boards needing convincing that debt is worth it and the costs of debt being too high. Universities may also prefer this approach when they can expect consistent or increased future income, making accessing debt less necessary.[26] Furthermore, using internal financing is often simpler than having to access the debt market, especially because there are no obligations to external funders. With all this in mind, colleges and universities may still prefer to access debt if internal funding is insufficient as debt financing is preferable to using endowment funds.

Although two distinct approaches have emerged, researchers have suggested a third intermediary approach is often common: a modified pecking order approach.[27] In this approach, nonprofit organizations prefer using internal funds, but they access debt markets in special cases for specific capital needs. This differs from a static trade-off approach in that optimizing leverage is not the goal. Instead, debt is used sparingly, and leverage is typically monitored to ensure it does not harm the financial health of an organization. Our qualitative findings, consisting of eight interviews, reveal that although institutions may claim to prefer one debt strategy over the other, institutions frequently employ a combination of both pecking order and static trade-off, resulting in a modified pecking order debt strategy.

25 M. Z. Frank & V. K. Goyal, "Trade-Off and Pecking Order Theories of Debt," in *Handbook of Empirical Corporate Finance, ed. B. E. Eckbo*, (2008): 135-202.
26 H. S. Rosen and A. J. Sappington, "To Borrow or Not To Borrow? An Analysis of University Leverage Decisions," *Research in Economics* 70, no. 1 (2016): 170-185.
27 Stewart C. Myers, "Capital Structure Puzzle," *NBER Working Paper Series*, 1984, https://www.nber.org/system/files/working_papers/w1393/w1393.pdf.

Issuing debt requires numerous stakeholders

To issue debt, an institution must get approval from an issuing authority. For public institutions, this is frequently the state. However, the process looks different across states. For example, some states may require legislative approval while others may grant broad sets of approvals that give individual state institutions flexibility in their debt decisions. Some private institutions may be required to seek approval from a state governing agency; however, most must find a third-party issuer. This issuing authority approves the debt and usually helps facilitate the sale of the bond. Institutions must also work with an underwriter, usually from an investment banking firm. The underwriter typically helps to create a financing plan, including the timing and method of sale, and prepares an official statement that describes the institution, its financial health, and how the debt will be used.

Prior to the sale of a bond, analysts, lenders, and banks must familiarize themselves with the institution before investments can be made. Of course, institutions are aware of these factors and their use in the lending markets, and thus they may influence the institutional decision to enter the debt market. To determine the institution's financial performance, creditworthiness, and the risks associated with investing, the following factors are often considered:[28]

1. **The institution.** Characteristics of the school, including its age, competition, degrees and program offerings, student demand (e.g., selectivity, matriculation ratio, and student profile), and size. This may also include consideration of whether the school is a minority serving institution, such as an HBCU, which can make borrowing more costly for institutions with fewer resources.[9]
2. **Use of bonds.** This involves assessing how the bonds will be used in accordance with the university's priorities and mission. This can include assessing the risk associated with construction and analyzing the condition of the institution's plants and facilities.
3. **Security.** Assessing if bonds will be appropriately secured (i.e., revenue pledges, mortgage pledges, and debt service funds) helps determine the risk associated with the debt burden.
4. **Management and governance.** School leadership, specifically the expertise and tenure of senior management and the board of trustees, is critical to evaluating whether debt will be managed appropriately.
5. **Faculty and staff.** Recruiting, retaining, and maintaining a fair and equitable climate for faculty and staff are important in determining an institution's success.
6. **Finances.** Analyzing the school's financial condition, including trends in tuition/fees, financial aid, and financial statements, can reveal a school's financial stability and flexibility, especially as they weather economic downturns. Particular attention should be paid to current assets, debt, and leverage, as well as trends in endowments and a school's ability to increase its endowment.

28 Bradley D. Mincke, "How to Analyze Higher Education Bonds," *The Handbook of Municipal Bonds* (2008): 1055-1076.

Qualitative analysis: CFOs explain their approaches to their debt strategy

The qualitative portion of our study provided insights into how CFOs approach debt on their campus. Several key topics from these conversations emerged, including how institutional debt is approved, the functions of the debt, the role of students in debt decisions, the unique issues HBCUs face, barriers to borrowing, and the importance of knowledge sharing. In the sections below, we discuss each of these topics and the importance of institutional context for understanding approaches to debt. We specifically asked about how COVID-19 and the Great Recession impacted borrowing decisions; we note the relevance of these crises throughout our findings but describe these periods of crisis in more detail in the final section of the paper.

Debt approval

CFOs are responsible for seeking approval from the appropriate parties before taking on debt. Because all but one of the participants interviewed for this study work at public institutions, we developed stronger insights on the approval process at public institutions. When seeking approval internally, CFOs turn to the board or cabinet members. However, nearly half of the participants at publics discussed the process of gaining external approval from state legislators, with a few also stressing the importance of public votes. Below are examples of CFOs who described the involvement of state legislators in debt approval. Here, a public HBCU describes that the state itself has a debt limit, and the institution has to issue a bill that must be passed by legislation to receive an increase in funding:

> *The state has a statutory debt limit. So, as long as you are within that, you're fine. Secondly…the state of [redacted] has a statutory debt limit and, in fact, we are…going to ask for an increase…someone has to issue a bill. The bill has to go through the legislative process and get approved to change that level [of debt].*
>
> –CFO, Public HBCU

Once the bill is passed, the institution presents their capital debt structure to a state committee that is ultimately responsible for granting the institution permission to borrow funds.

The following CFO described the need for legislative approval in addition to public approval:

> *Obviously, this last bond issue and last year involved partnership with the state of [redacted]...We had had discussions with our governor and our legislature and appropriations, senate chairs, and all those things and so…that would probably be about a 12-month process before we actually went to, like, a public vote of the board of regents to approve those votes*.
>
> –CFO, Public Institution

The single public two-year college interviewed for this study mentioned both the board and public as the decision makers. For instance, the institution received a 70% vote from the public in favor of increasing the expenditure limit to create new facilities on campus. The participant described that this public vote was not only useful for the initial funding to start the project on campus, but would also help the institution build a stronger case if it needed to issue additional debt at a later point through a general

obligations bond.[29] In this instance, the public support created present and future opportunities for the institution to obtain additional funding. The CFO at a private institution did not explicitly describe the process of debt approval at the institution, but alluded to having more autonomy given the institution's trust in his expertise when making borrowing decisions.

It is not uncommon for chief financial officers to educate their colleagues on financial matters at the institution as part of getting debt approved. Half of our participants, including the CFO at a private institution, described educating board and cabinet members on institutional finance. For some CFOs, this process of educating stakeholders can be used as a tool to receive backing on financial decisions, especially if those individuals are the ultimate decision makers on borrowing. At least two CFOs described educating colleagues so they have an understanding of what is taking place at the institution financially. One participant even briefly mentioned educating union faculty members at their institution:

> *We have a unionized faculty, so they think that…we're telling them that there isn't enough money to give them a bigger raise that they want. Meanwhile, there's a capital project going on. Then that group will raise issues. They're not consulted about the decision, but I do spend a fair amount of time trying to inform them. They have a finance and facilities committee that I go before and kind of get grilled and try to get them to understand that we're building a STEM center so that students will keep coming here and so they won't be in laboratories that are as old as I am, and that's a necessity. Therefore, that's an advantage for you. And the faculty…they don't always get that connection…*
>
> –CFO, Public Institution

Here, educating faculty on an issue seems to be one way of alleviating tension. Even though the union is not directly responsible for making debt decisions, the CFO recognizes the disconnect between staff involved in financial matters and faculty members, who are often directly or indirectly affected by debt decisions and the purposes they serve. By educating broader institutional stakeholders such as faculty, this CFO aims to reduce potential pushback on financial decisions. However, despite their efforts, the CFOs are not always successful in garnering support.

Functions of debt

Higher education institutions continually struggle to receive adequate financing for facilities funding and thus typically issue debt in order to fund various capital initiatives.[30] Funding these projects with debt allows schools to maintain first-class facilities and remain attractive to students and faculty.

Debt is mostly used to aid in capital projects, such as new academic buildings, athletic facilities, or recreational facilities.[31] These new projects help schools improve their institutional value by maintaining and expanding the quality of programs they offer

29 A general obligations bond is a type of municipal bond that is issued based on an institution's ability to raise money through taxation.

30 D. Harris, D. Manns, and S. Katsinas, "A Study of State Tax Appropriations for Capital Needs In U.S. Public Higher Education," *Facilities Manager*, (2012): 25-29.

31 D. Hornfischer, "The Strategic Use of Debt Financing," *Planning for Higher Education* 25 (1997): 16-21. G. A. King, R. E. Anderson, D. M. Cyganowski, and P. J. Hennigan, "NACUBO Guide to Issuing and Managing Debt," *National Association of College and University Business Officers*, 1994.

and appealing to faculty and students. Debt can also allow for the purchase of new equipment, allowing schools access to the latest technology. However, this tends to be less common due to the shorter lifespan of technological equipment.[32] In some cases, land may also be acquired with debt financing and later used to build new facilities.[33]

Debt may also be used to fund renovations and deferred maintenance. Renovation projects include modernizing buildings so that they meet new building codes, retrofitting buildings with new technology, and changing how the space is used.[34] Deferred maintenance, or work that has been postponed usually due to budgetary constrictions, can be funded with debt in order to ensure safe building conditions. Maintenance may often be deferred due to the significant costs associated with such maintenance, but postponing this maintenance for too long may be associated with increasing costs.[35]

Throughout our interviews, participants shared that debt at their institutions serves two main purposes: to finance new projects and to create long-term strategies to address campus challenges while considering future implications. These long-term strategies were often centered around the financial health of the institution, or at a minimum considered the fact that financial resources are necessary to execute on long-term strategies. Here, a CFO at a large public institution shares their thought process on strategic financial decision making:

> *When we use internal funds to make loans for projects or to fund projects, we have to think about what our opportunity cost is for investing those funds. It's compared to what we might be receiving from the internal borrower on the project. So, we put all that together, and I would say that we don't think of that as a last priority, we think about it in the context of one, debt capacity, but two, how are we going to generate the lowest opportunity cost to either investment returns or external borrowed rates.*
>
> –CFO, Public Institution

Although using debt to cover operating expenses may be a consideration for some institutions, one CFO in particular discussed their hesitancy to use debt for such purposes, citing an experience at a prior institution:

> *Now we have a lot more cash. But we have stuck to borrowing for capital projects. Not for any sort of operational need. Well, when I was in [redacted], the state of [redacted] issued about $35 billion bonds long before I got there to meet operational needs and that sort of thing, and they were continuing having to roll over the debt of the year and that sort of thing. I never wanted to be in such a circumstance.*
>
> –CFO, Public Institution

32 T. D. Calabrese, "Testing Competing Capital Structure Theories of Nonprofit Organizations," *Public Budgeting & Finance* 31, no. 3 (2011): 119-143.

33 M. Z. Frank and V. K. Goyal, "Trade-off and Pecking Order Theories of Debt," in *Handbook of Empirical Corporate Finance*, ed. B. E. Eckbo, (2008): 135-202.

34 NACUBO, "College and University Business Administration: Strategic Debt Management," NACUBO, 2015.

35 Ibid.

Interestingly, two institutions described using debt to build or remodel arenas. Here, a private institution reflects on how the institution used state funds to build a new hockey arena:

> *It's not a financial decision, you know. It's hard to justify that kind of an expenditure. So, we started with interest in essentially a metal shell—very affordable. You know, one level, etc. We now have a club level, we have windows around three sides of the arena. We have gathering spaces, we have patios. It became quite a top of the line, and part of what drove it is we got involved with the city, who had a program where they could have access to state tourism tax dollars…We have pledged that for 55 days a year, the arena would be available for city athletic events, primarily geared toward all the Olympic teams and programs that are headquartered here. That they could bring people in mainly in the summer…We'd never had public money and anything we've done before that had this kind of odd twist and that kind of pushed it over the line…If you count the state money, we're over 60% being paid for external to the college.*
>
> –CFO, Private Institution

Borrowing from the state is not a norm for this institution. However, by borrowing local dollars to build the arena, the institution created an opportunity to not only increase revenue and presence on campus property, but to also cultivate a relationship with the mayor. Here, we gain insight on unique opportunities that borrowing can be used for beyond increasing opportunities for educational and student outcomes. In addition to using borrowed funds to build new dorms or renovate academic centers that can increase student interest and enrollment, institutions can also use debt to build sustainable relationships with the local community outside of the institution.

Student-focused borrowing

Throughout our interviews, CFOs referenced new facilities, dorms, and resources for students. Although students were referenced implicitly throughout our conversations, some CFOs described how their institution's commitment to serving students showed up as it related to institutional finance. In particular, these CFOs described how their institutions took on debt after observing the needs of students on campus. To elaborate on this, one CFO from a private institution said the following:

> *I do think it's important when you borrow that you figure out a way that the student who pays for day one is benefiting from it, right? So you don't want students paying for debt and after they graduate, you begin to really make the change. That wouldn't be impactful. Especially in the small liberal arts, right? Yeah, you want to be able to say, see, you're paying for it, but this happened. Right?*
>
> –CFO, Private Institution

Here, the CFO recognizes the financial toll that paying for college has on students. Because of this, the institution is invested in ensuring their students feel like their financial investment in attending the institution is worth it. This CFO was not the only individual that mentioned student-focused borrowing—HBCU and community college participants described similar views. Although CFOs and other stakeholders involved in the borrowing process do not interact with students directly, this evidence shows that they are still concerned with student needs and recognize how their decisions may

impact them. Importantly, institutional context appears directly related to whether or not students are centered in debt-related conversations.

The unique case of HBCUs

Because two interview participants are from HBCUs, we were able to gather insights to expand on our current understanding of borrowing at HBCUs specifically. In comparison to predominately white institutions (PWIs), HBCUs are historically underfunded, and the unique challenges HBCUs face were emphasized in our discussions. Generally, debt at HBCUs is used to serve many of the same purposes as debt at PWIs—to support new projects or initiatives on campus, often taking into consideration the needs of students. However, while CFOs at PWIs discussed addressing students' needs as they related to increasing enrollment, community belonging, and athletics development, one HBCU expanded on these functions by explicitly tying debt usage to support goals for student success. The CFO referenced the institution's strategic plan, which includes a goal centered around improving graduation rates. Specifically, this institution used debt to fund a long-term project that would ultimately provide additional housing for students. According to the CFO, research shows a positive relationship between students who live in university housing and degree attainment.

Earlier, we mentioned that policy barriers that prevent schools from using debt to pay for operating costs could be of benefit to some institutions. However, for institutions who are historically underfunded due to lower contributions from the state and other sources, using debt to pay for these operational costs may be the only way an institution remains open. One CFO described having to borrow out of necessity just to "get through things" when they first became employed at the institution, taking on the ultimate task of bringing the institution financial stability. In fact, one HBCU described their engagement in external debt markets to reserve funds for emergency purposes. This can offset low liquidity when funds are still needed to cover institutional costs. Financial circumstances at HBCUs can make CFOs and presidents even more fiscally conservative.

In April 2021, the Biden administration announced widespread debt forgiveness for colleges that borrowed through the HBCU Capital Financing Program. In total, 45 institutions received $1.6 billion in forgiveness.[36] These institutions, which had borrowed through the program to fund capital projects on campus, secured this financial windfall during a period of relative uncertainty. We discuss this in more detail below.

Potential barriers to borrowing

There are several factors that can complicate how institutions borrow and utilize debt. Throughout these interviews, CFOs shed light on factors such as politics, differences in views on debt, competing or conflicting priorities, and more. Earlier in this section, we described the relationship between CFOs and stakeholders involved throughout the process of initiating and approving debt. Oftentimes, these stakeholders are the same individuals that may create challenges with borrowing practices, specifically when and for what purpose the institution should borrow. One CFO reflects on how a change in leadership created an opportunity for new projects on campus to take place, years after the need was first discussed:

36 U.S. Department of Education, "Department of Education Discharges Over $1.6 billion in HBCU Capital Finance Debt," 2021, https://www.ed.gov/news/press-releases/department-education-discharges-over-16-billion-hbcu-capital-finance-debt.

> *I've been here for a long time, 17 years. So I was here for the old regime and had the chancellor back then say we want to build the same buildings we're building now. We would have found tools to do that, but it may have been slower. He didn't prioritize it. We didn't identify the need, so the bigger failure was the college wasn't looking forward. It was not that we didn't tap into [revenue bonds]. We weren't effectively managing the financial tools that we had. I'm not saying that to say that we couldn't have done some things better—we could have.*
>
> --CFO, Public 2-Year Institution

This CFO's response reveals that it is not the cost of debt that limited the institution's ability to borrow funds and invest in new projects and opportunities. Instead, it is the degree to which these projects are deemed important. Because institutional presidents ultimately manage campus operations and are the executive decision makers, their priorities are more salient than what other members of the institution may deem relevant, including the CFO. Buildings that are currently being built at this institution were first explored years prior, but it was not until a new executive member came to the institution that these plans came to fruition. The needs of members such as presidents or chancellors often take precedence, and thoughts around priority investments are subject to the individual in office.

In addition to differences in prioritization, opposing stances on borrowing more broadly can also create obstacles for the CFO in the borrowing process. Below, a CFO at an HBCU recounts his relationship with his president and the governing board, whom he refers to as debt-adverse:

> *Yeah, that's an understatement. No, I have to use my greatest…I was in a meeting yesterday with the president [and I had to use] my greatest sales pitch to get them to understand. I mean, I come from a philosophy of there's good debt and there's bad debt. You never want bad debt. Bad debt is borrowing money to pay the light bill. Good debt is borrowing money to buy an asset or increase an asset. And that asset is going to give you a return which will enable you, one, to pay off the debt. And also, if the return is large enough, you will get additional benefits.*
>
> –CFO, Public HBCU

In this instance, the CFO describes the opposing views that he, the president, and the governing board have on debt. This CFO goes on to stress the importance of reviewing all options at hand to make an informed decision. However, even though the CFO is meant to be the expert on financial matters at the institution, they can still receive pushback from the people they report to. Participants who described differing opinions with colleagues on campus discussed the importance of educating these individuals as a way to help them understand the reasoning behind decisions to take on additional debt. For them, a "sales pitch" in the form of educating decision makers can yield positive results. Although relationships between CFOs and executive officers were discussed most in depth, evidence also shows that the board, faculty, and even the broader public are actors that can contribute to barriers to borrowing.

Not only can leadership contribute to challenges with borrowing, but broader policies can also pose risks to the borrowing process. Some CFOs described policies that limit institutional borrowing:

> *We did the RFP, and there's certain policy constraints that we have within the* system. *You can only issue so much debt. You know, [the system office] keeps a close watch on our credit ratings. We have to go to them for approval, so I can't do it on my own. I have to get approval from the system office that they have to sign off on, and then I have to get approval from the board of governors of the system. So, it is a more elongated process.*
>
> –CFO, Public Institution

In addition to policies that limit how much debt an institution can borrow, institutions may be limited on what borrowed money can be used for. In particular, one institution shared that they cannot use debt to cover operational costs. While this may appear to be a limitation upon first glance, these constraints can actually help institutions by preventing them from taking on too much debt. Additional barriers worth noting include capacity and following ethical standards. Some CFOs stressed the importance of taking these factors into consideration, as they can dictate whether or not a certain project should be initiated, as well as the costs and benefits as they relate to other ongoing projects and maintaining the institution's ethical standards of serving students and fulfilling its organizational mission.

Knowledge sharing

In the higher education sector, it is not uncommon for CFOs to seek support and guidance from their colleagues at other institutions. Conversations across institutions can take place both formally and informally. Two institutions mentioned going as far as having regular convenings with a group of schools to discuss financial matters, which became increasingly relevant during the pandemic. By talking to colleagues at other institutions, CFOs are able to receive personal support from CFOs at peer institutions. These individuals may have more knowledge and expertise as a result of working at a postsecondary institution for a longer period of time, or even having firsthand experiences and lessons learned from the Great Recession. By engaging in knowledge sharing across campuses, CFOs can collaborate, share ideas for strategic planning, and learn from one another's experiences to make an informed decision and apply strategies to their own institution.

In addition to the knowledge sharing that takes place between colleagues across institutions, CFOs may seek guidance from other external experts. One participant interviewed for this study shared that they have a financial firm at the system level and each system school selects their financial advisor to consult on how to proceed with financial decision making. Systems are also unique because they are a group of institutions that operate under the same executive team. Participants at these system institutions shared that because there are CFOs at each institution, they can share ideas, collaborate, and receive feedback prior to bringing final proposals to the system CFO, who is often ultimately involved in the debt approval process. When financial decisions that impact the entire university system are at stake, CFOs may collaborate with one another to build a strong case that is backed by multiple colleagues. Not only can knowledge sharing be used throughout the planning process, but it can also be used to receive the best possible outcome in the approval process, as well.[37]

37 All of our participants worked at institutions that control their own borrowing and did not have a central system office making the borrowing decisions on their behalf.

Key takeaways

Our interviews provided an opportunity to unlock the black box that has cloaked institutional borrowing. The process and drivers of borrowing vary across institutional contexts. For example, at some colleges CFOs proactively bring debt solutions to the president and board to meet strategic goals, while at others the CFO plays a more reactionary role, responding to requests to provide debt solutions. Frequently, the CFO is tasked with educating other stakeholders on campus to help build support for debt-funded projects or deter pushback on the projects. When stakeholders—including other institutional administrators, faculty, boards, and political actors—prevent debt access, colleges can miss opportunities for strategic investments. This complex relationship between the CFO and other internal and external stakeholders underscores the importance of all potential decision makers having a baseline understanding of institutional debt. A more informed set of stakeholders would likely improve shared governance within an institution as well as external oversight from governing boards, elected officials, government agencies, and accreditors.

CFOs universally said debt should only be used for strategic goals. In the rare case that debt is used to fund operating costs, CFOs noted the financial precarity of an institution. While debt can be a strategic tool for meeting goals, the misuse of debt can harm the financial health of a college. Moreover, institutional type appears directly related to how CFOs factor in student needs. In our sample, CFOs at a community college, regional public, HBCU, and private liberal arts college explicitly noted the importance of serving students' interests when making debt-related decisions. Institutional mission is likely directly related to borrowing decisions in that it informs the types of capital projects campus leaders pursue.

Although we do not have substantial data from HBCUs, the information we gathered from our two interview participants provide some insight on how HBCUs access the debt market, as well as the unique challenges they face. Historical inequalities in funding between HBCUs and PWIs provide context to explain why HBCUs borrow for different purposes that non-HBCUs use debt for, such as to fund operational needs. Because HBCUs are underfunded and therefore take on more debt, they are more likely to be especially conservative with their borrowing practices and focus on borrowing to enhance the student experience and increase student success. Although not explicitly mentioned in our interviews, it is possible that HBCUs' interest in students can have a positive impact on the likelihood of additional students coming to the institution, which could potentially increase revenue. Despite this, HBCUs continue to be overlooked by the state and federal government, with the exception of the recent debt forgiveness program, which will be discussed later in this paper. Additional evidence is needed to better understand how HBCUs and other minority serving institutions operate within the debt market, as well as policies and programs that help and hinder the institutions' financial health.

Quantitative analysis: Financial crises and debt

Financial crises have played a critical role in shaping debt financing due to their power to disrupt debt markets and change higher education institutions' borrowing decisions. For example, the financial crisis in the 1980s resulted in a reluctance to invest in new infrastructure and maintenance of facilities as schools scrambled to cut costs.[38]

As colleges and universities began to borrow more in the early 2000s, the Great Recession changed the general financial situation of colleges, states, and students, while also altering the debt landscape in particular. The Great Recession precipitated several financial challenges for higher education institutions as bond insurers defaulted, banks and brokerages closed, fewer people were investing, and banks stopped lending.[39] Many colleges stopped accessing the debt market, and those that continued had to do so with higher interest rates. Leverage increased dramatically in both 2008 and 2009 due to increased debt and declining asset values.[40] Following 2009, average leverage declined and stabilized from 2011 to 2013, although it remained higher than pre-2008 levels for a number of years.

In the years following the Great Recession, institutions faced declining state and local appropriations, poor investment returns, and a decrease in private gift giving.[41] Colleges and universities became increasingly concerned about fluctuations in their revenue, which resulted in less borrowing and thus reductions in leverage. Furthermore, schools became less sensitive to the expected value of their revenues, meaning that their income projections did not influence their leverage choices.[42]

Several economic recovery efforts aimed at colleges (e.g., American Reinvestment and Recovery Act (ARRA)) allowed colleges to borrow at low interest rates.[43] Regardless, the Great Recession changed the landscape for the types of debt that were available and the preferences schools had.[44] Debt markets began returning to normal by 2014, although the current COVID-19 crisis has resulted in revenue declines that are likely to have affected debt financing patterns.[45]

Impacts of the Great Recession

In this study, we are specifically concerned with large increases in debt and the potential deleterious effects of these increases. We conducted two sets of analyses related to this: identifying the antecedents of large debt increases and identifying the potential effects of large debt increases. Table 1 presents our findings regarding the antecedents

38 Walter Brown and Cayo Gamber, "Cost Containment in Higher Education: Issues and Recommendations," *ASHE-ERIC Higher Education Report* 28, no. 5 (2002).

39 NACUBO, "College and University Business Administration: Strategic Debt Management," *NACUBO*, 2015.

40 Harvey S. Rosen and Alexander JW Sappington, "To Borrow or Not to Borrow? An Analysis of University Leverage Decisions," *Research in Economics* 70, no. 1 (2016): 170-185.

41 Michael Mitchell, Michael Leachman, and Kathleen Masterson, "A Lost Decade in Higher Education Funding State Cuts Have Driven Up Tuition and Reduced Quality," *Center on Budget Policy and Priorities*, 2017.

42 Harvey S. Rosen and Alexander JW Sappington, "To Borrow or Not to Borrow? An Analysis of University Leverage Decisions," *Research in Economics* 70, no. 1 (2016): 170-185.

43 M. D. Robbins and B. Simonsen, "Build America Bonds," *Municipal Finance Journal* 30, no. 4 (2010): 53-77.

44 NACUBO, "College and University Business Administration: Strategic Debt Management," *NACUBO*, 2015.

45 Klaus S. Beckmann and Srinivasan Ragothaman, "Impact of Coronavirus on Cash Flows in University Budgets: Exploratory Study," *International Journal of Business, Accounting, & Finance* 14, no. 2 (2020).

of increases in debt during the Great Recession. We examine the increase from the average amount of debt in 2006 through 2008 to the average amount of debt in 2009 through 2011 to capture debt increases occurring throughout the recession. We identified schools with a 50% increase in total long-term debt as our primary outcome of interest and tested more extreme increases in debt (90 and 125 percent increases) for robustness. The outcome is a binary indicator equal to one if an institution had a large debt increase. Additional details on our approach can be found in our methodological appendix.

Private institutions were roughly six to ten percentage points less likely to incur a large increase in debt than their public counterparts, and HBCUs were roughly seven to 11 percentage points more likely to rapidly increase debt than their non-HBCU counterparts, controlling for other institutional characteristics. Master's granting institutions were also more likely to increase debt, with research institutions as the reference Carnegie category. Colleges with higher pre-recession leverage ratios were less likely to incur large increases in debt, with every one-tenth of a leverage ratio associated with a decrease of one to two percentage points in the likelihood of large increases in borrowing from 2009 through 2011. Because high levels of leverage likely produced more financial stress during the economic downturn, this finding suggests, generally, a prudent approach to debt during the Great Recession and matches what CFOs told us during interviews. Taken together, these findings largely mirror those of the general debt trends we discussed above but bring more clarity to which institutions borrowed at high rates during the Great Recession.

Table 1. Antecedents of changes in debt during Great Recession

	50% Inc.	90% Inc.	150% inc.
Private	-0.0996**	-0.0585*	-0.0383
	(0.0448)	(0.0346)	(0.0269)
HBCU	0.113**	0.0701*	0.0484
	(0.0493)	(0.0381)	(0.0296)
Associate	0.00223	0.0366	0.0363
	(0.0393)	(0.0304)	(0.0236)
Primarily Associate	-0.0344	0.0539	0.0435
	(0.0687)	(0.0531)	(0.0412)
Master's	0.0697**	0.0701***	0.0430**
	(0.0329)	(0.0254)	(0.0197)
Bachelor's	0.0370	0.0426	0.0329
	(0.0375)	(0.0289)	(0.0225)
Specialty	0.132***	0.0982**	0.0394
	(0.0503)	(0.0388)	(0.0302)
Tribal	-0.0477	0.0365	0.0621
	(0.127)	(0.0980)	(0.0761)
2010 Endowment per FTE	4.62e-08	-4.33e-08	-1.77e-08
	(6.90e-08)	(5.33e-08)	(4.14e-08)
Log 2010 FTE Enrollment	0.00708	-0.00355	-0.00456
	(0.0115)	(0.00888)	(0.00690)
2010 Share of Revenue from Tuition	0.000341	0.000690	0.000738*
	(0.000707)	(0.000546)	(0.000425)
2010 Share of Revenue from State	0.0290	0.0845	0.0547
	(0.125)	(0.0968)	(0.0752)
2008 Leverage Ratio	-0.105**	-0.166***	-0.177***
	(0.0506)	(0.0391)	(0.0304)
Constant	0.133	0.103	0.0804
	(0.120)	(0.0928)	(0.0721)
Observations	1,950	1,950	1,950
R-squared	0.025	0.037	0.040

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

After identifying high-borrowing institutions, we estimated the relationship between those borrowing patterns and an institution's ability to spend money on educational expenditures. To understand the relationship between large increases in borrowing and an institution's ability to serve students, we use a difference-in-differences (DD) approach. Although DD is typically used to derive causal estimates, institutions actively increase their debt totals, and thus the treatment is endogenous. Instead, we are using the DD approach to measure the longitudinal relationship between this increase in debt and educational expenditures. As a proxy for serving students, and to account for an institutions' relative ability to spend on education given their larger debt totals, our outcomes of interest are the percent of total expenditures used for education and related expenses, total education and related expenditures, and per FTE education and related expenditures. In Table 2, columns one through three present the DD estimates. We describe this approach in more detail in our methodological appendix.

High-borrowing institutions, or those that increased debt by at least 50% during the Great Recession, appear to increase the share spent on education in the long run, with an average increase of one to two percentage points. These institutions also increase total and per FTE education and related expenditures, suggesting that colleges that substantially increased debt during the Great Recession did so strategically and likely to the benefit of students by investing in capital projects that allowed them to better serve their students. If colleges that increased debt by 50% or more were engaging in reactionary borrowing due to revenue losses, we would expect educational expenditures to remain flat. Although reactionary borrowing that was filling revenue gaps would likely result in stagnant educational spending, an increase in educational spending suggests a potential link between borrowed funds and investments in educational pursuits. Of course, it is possible that colleges borrowed both reactionary and strategic ways. That is, a college may increase its debt to cover revenue shortfalls but also incur more debt beyond the operational needs to make strategic investments that result in higher educational spending.

Table 2. DD estimates of the relationship between large debt increases and education and related (E&R) expenses

	Percent of Expenditures on E&R			Total Expenditures on E&R			E&R Expenditures per FTE		
	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.
Treatment	0.00879*	0.0105*	0.0161**	2.031e+07***	2.194e+07***	1.416e+07***	3,463***	3,539***	2,933***
	(0.00465)	(0.00599)	(0.00766)	(2.447e+06)	(3.141e+06)	(4.020e+06)	(350.5)	(449.8)	(575.0)
Constant	0.712***	0.711***	0.711***	-1.056e+07*	-1.225e+07**	-1.336e+07**	79,264***	79,155***	79,087***
	(0.0103)	(0.0103)	(0.0102)	(6.085e+06)	(6.077e+06)	(6.073e+06)	(928.7)	(927.5)	(926.4)
Obs	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350
Number of Institutions	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Because we know HBCUs and public institutions were more likely to borrow at high rates and that these institutions may have faced unique revenue shortages during the Great Recession that caused them to access debt markets, we examined how the effect size varies across institutional characteristics using a difference-in-difference-in-differences (DDD) approach. The DDD design enables researchers to understand how multiple groups within treated and control groups differ in outcomes over time. Because the DDD approach differences out trends among high-borrowers and trends among the subgroup (e.g., HBCUs or public institution), the point estimates are compared to the population of all non-high borrowing institutions. The methodological appendix provides more detail of our DDD model specification. Again, these are not causal estimates of the effects of high borrowing but provide an estimate of how educational spending differed across institutional characteristics at high-borrowing institutions. Table 3 suggests that high-borrowing HBCUs decrease the share of expenditures used for education-related expenses by roughly six percentage points compared to non-high-borrowing institutions. Given that the increase for all high-borrowing institutions was slightly positive, as shown in Table 2, this negative relationship among HBCUs suggests non-HBCUs are increasing educational spending, which points to a divergence in outcomes. Additionally, the point estimates on the total amount of E&R are negative, although not statistically significant. Perhaps counterintuitively, the per FTE spending shows positive coefficients. One potential contributing factor is the decline in FTE enrollment over time at HBCUs that increased borrowing significantly during the Great Recession.

Table 3. DDD estimates of the relationship between large debt increases and education and related (E&R) expenses at HBCUs

	Percent of Expenditures on E&R			Total Expenditures on E&R			E&R Expenditures per FTE		
	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.
Treatment	-0.0648***	-0.0645***	-0.0625**	-2.229e+06	-41,281	-6.531e+06	872.2	3,112*	1,882
X HBCU	(0.0184)	(0.0246)	(0.0317)	(9.653e+06)	(1.288e+07)	(1.663e+07)	(1,379)	(1,842)	(2,376)
Constant	0.711***	0.710***	0.711***	-9.411e+06	-1.119e+07*	-1.254e+07**	79,317***	79,228***	79,139***
	(0.0103)	(0.0103)	(0.0102)	(6.082e+06)	(6.077e+06)	(6.072e+06)	(928.8)	(927.7)	(926.6)
Obs	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350
Number of Institutions	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4 suggests that high-borrowing public institutions spent approximately seven percentage points less on education and related expenses as a share of total expenditures than institutions that did not substantially increase borrowing during the Great Recession. However, the total and per FTE E&R spending at high-borrowing public institutions increased. Importantly, these effects are in the long run and inclusive of 2018 data, and total and per FTE expenditures increased from 2008 through 2018. If educational expenses are growing at these high-borrowing colleges but the share of expenditures is falling, other expenditure categories must be increasing at faster rates. It is encouraging to see that high-borrowing publics appear to have borrowed in a way that resulted in more educational expenditures; however, the increasing share of

non-educational expenditures suggests investments may have also occurred in other areas such as research or auxiliary enterprises (e.g., dorms or athletics facilities). Additional research into the general expenditure patterns of these institutions would be helpful to fully understand institutional strategy.

Table 4. DDD estimates of the relationship between large debt increases and education and related (E&R) expenses at public institutions

	Percent of Expenditures on E&R			Total Expenditures on E&R			E&R Expenditures per FTE		
	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.	50% Inc.	90% Inc.	150% inc.
Treatment	-0.0757***	-0.0714***	-0.0645***	3.263e+07***	3.334e+07***	2.234e+07***	3,539***	3,946***	3,028***
X Public	(0.00652)	(0.00772)	(0.00937)	(3.443e+06)	(4.063e+06)	(4.930e+06)	(494.3)	(583.1)	(706.2)
Constant	0.799***	0.798***	0.798***	-1.098e+07*	-1.254e+07**	-1.269e+07**	80,191***	80,123***	79,833***
	(0.00984)	(0.00982)	(0.00979)	(5.706e+06)	(5.700e+06)	(5.684e+06)	(876.9)	(876.2)	(873.5)
Obs	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350	25,350
Number of Institutions	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Contextualizing these results with qualitative insights: Comparing the Great Recession and COVID-19

Despite the reality that the Great Recession occurred over a decade ago, its impacts and lessons learned within the context of postsecondary education continue to be relevant today. Reflections from the period of the Great Recession are even more relevant now as CFOs grapple with the immediate and long-term effects of COVID-19. Although quantitative data cannot yet determine the long-term effects of COVID-19 on colleges and universities, interviews provide us with some insight on how both the Great Recession and COVID-19 affected institutions. CFOs stressed the importance of shifting strategies during times of crisis to boost revenue. At postsecondary institutions, this means recruiting students to enroll at the institution. Because classes at universities across the nation were temporarily virtual, institutions lost revenue, especially related to room-and-board costs. CFOs at PWIs and HBCUs alike shared that both events led institutional leaders to take a more conservative financial strategy moving forward. Liquidity was especially important for CFOs so they could avoid taking on additional debt, which would ultimately place them at a greater disadvantage due to the loss of funds to maintain repayments.

The Great Recession and COVID-19 both significantly changed the ways postsecondary institutions operated. CFOs and other institutional leaders who worked at the institution during the period of the Great Recession were at an advantage due to their familiarity with how major economic events shifted operations at the institutional level. However, the immediate impacts of COVID-19 were foreign to all. Institutional responses in both scenarios resulted in paused construction and other major projects on campus to grapple with the great unknown of how these events would affect campuses. Our

interviews with CFOs suggested these pauses were relatively short lived and linked to the institution's immediate need to assess the implications of the crisis,[46] thus they did not impede the overall and ongoing increase in institutional debt. Those who had greater financial stability at the time of the onset of both events were more equipped due to their available liquidity. However, for institutions that were already at a financial disadvantage, the challenges CFOs faced were only exacerbated by the Great Recession and COVID-19.

In March 2020, colleges and universities throughout the nation went from traditional in-person instruction to quickly shifting to a virtual format, giving students just a few days to pack their belongings and evacuate campus. According to the National Student Clearinghouse, undergraduate enrollment has declined by 7.8% since fall 2019, with public two-year institutions experiencing the largest declines.[47] The current financial crisis caused by the COVID-19 pandemic has likely influenced colleges' preferences for or reliance on debt. As supported by our qualitative evidence, the COVID-related financial strain on colleges was driven by a combination of decreased revenues and increased costs.[48] COVID-19 is directly impacting revenue from room, board, and other auxiliary enterprises, and the economic impact of the pandemic may limit students' ability to afford tuition. These negative revenue shocks will affect institutions' ability to service debt and may impact the decision to engage in debt markets.

During the early stages of COVID-19, CFOs grappled with uncertainty in different ways. Many advocated for pausing capital projects and focusing on ensuring short-term expenditures, such as payroll, would be met during the spring and summer of 2020. Additionally, in response to the period of crisis, CFOs projected how enrollment declines would impact the financial health of institutions. Part of these projections included consulting with peer CFOs. This cross-institutional learning, discussed above, became particularly important when responding to the sudden changes caused by COVID-19. As it became clearer that the revenue shock associated with the pandemic would not bankrupt large numbers of institutions, partly due to the influx of federal dollars, CFOs shifted strategies to slowly restart capital projects. Moreover, the low interest rates provided an opportunity for CFOs to strategically restructure debt during 2020 to lower servicing costs and free up additional funds for internal spending. One CFO noted that even a small decrease in debt service costs could free up funds for an additional student affairs employee to better serve students.

To navigate the effects of the pandemic, participants relied heavily on internal and external support. Nearly all participants referenced the federal funding they received, with one participant sharing the following:

> *…if not for the federal aid, you would have seen even more crises happening, and I suspect that that would›ve triggered all kinds of additional thoughts about debt.*
>
> –CFO, Public 2-Year

46 James Dean Ward and Mya Haynes, "Facing a Crisis Head-on: Institutional Borrowing Decisions during Times of Uncertainty," *New Directions for Higher Education*, (2022).

47 National Student Clearinghouse Research Center, "COVID-19: Stay Informed with the Latest Enrollment Information," 2021, https://nscresearchcenter.org/stay-informed/#:~:text=Roughly%20two%20months%20into%20the,7.8%20percent%20from%20fall%202019.

48 Robert Kelchen, "Some Thoughts on the Coronavirus Crisis and Higher Education," *Kelchen on Education*, 2020.

In discussing external sources of support institutions received, two main sources of federal funding were frequently referenced. The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) provided institutions with emergency relief funds. This prevented institutions from having to access the debt market. In addition to the CARES Act, the U.S. Department of Education discharged 1.6 billion in HBCU capital finance debt for 45 schools in April 2021, citing an "uneven financial playing field" and need for HBCUs to focus on providing support for their students, faculty and staff.[49] HBCU CFOs interviewed in this study shared the significant impact the capital financing program had on their institution. HBCUs struggled significantly during the onset of the pandemic, having to consider using their debt and reserves to pay for operational costs such as payroll for institutional employees. The influx of funds institutions received had a significant impact on their financial stability, allowing institutions to continue to serve their purpose even in the midst of the loss of revenue that resulted from the shift to a virtual format for many.

Key takeaways

Our research suggests that periods of crisis, specifically the Great Recession and COVID-19, have differentiated impacts across institutions. For example, HBCUs and public institutions were more likely to increase total debt during the Great Recession. The patterns we observe reflect the different contexts in which these colleges operate. For example, HBCUs have historically been underfunded and the financial strain of the recession likely forced these colleges to access debt markets to ensure they continued to operate. Public institutions faced declining state support during the Great Recession, which may have impacted their need for debt to fund certain projects that had been cut from state budgets.

Overall, institutions that increased debt during the Great Recession appeared to strategically invest in opportunities that allowed them to better serve students. Following this borrowing, high-borrowing colleges, generally, increased expenditures on education and related expenses. While this pattern held true for public institutions, the share of total expenditures used for E&R expenses decreased at both public institutions and HBCUs. This shift in spending may indicate other financial pressures and issues at these colleges and ought to be further examined.

Conclusion

In this study, we examine institutional borrowing practices across different types of colleges and universities, and specifically look at how periods of crisis impact these practices and the potential spillover effects onto institutions' ability to serve students. The issue of institutional debt is important for a broad set of higher education stakeholders to understand as debt both enables colleges to meet strategic goals but, when mismanaged, can hinder an institution's ability to serve students and potentially contribute to insolvency.[50]

49 U.S. Department of Education, "Department of Education Discharges Over $1.6 billion in HBCU Capital Finance Debt," 2021, https://www.ed.gov/news/press-releases/department-education-discharges-over-16-billion-hbcu-capital-finance-debt.

50 James Dean Ward, "Troubling Changes in Capital Structures at Small Private Colleges," *Journal of Higher Education Management* 31, no. 1 (2016): 57-74.

At the institution level, it is critical that faculty, board members, administrators, and students understand the issue broadly and their institution's debt decisions in order to improve shared governance on campus. As some of the CFOs noted, they engage in efforts to educate their communities on debt-related issues. We hope this report can help in this educational process by demystifying the process of obtaining debt and sharing the perspectives of CFOs.

At an oversight level, it is important for regulatory actors to understand debt to improve their oversight practices. We know that the financial metrics used by the federal Department of Education to monitor an institution's financial health have little predictive power over institutional closure or serious financial hardship.[51] A better understanding of debt and the potential benefits and detriments can help inform more useful oversight metrics. Similarly, accreditors frequently examine an institution's finances as part of their review and approval process. Given that accreditation review frequently includes an institutional peer review process, it is important for actors in the process to understand institutional borrowing. Moreover, we believe accreditors are well positioned, given their in-depth contextual knowledge of an institution's operations, to monitor institutional borrowing to identify overly risky propositions that may negatively impact students.

Finally, our study provides a new understanding of borrowing patterns and the decision-making process. In addition to helping to unlock the black box of institutional debt for a broad audience, we believe the findings point to important patterns in institutional behavior. First, colleges appear well positioned to weather financial storms and make sound financial decisions. Leverage rates mostly returned to pre-Great Recession levels after an initial spike, and much of the borrowing is driven by research universities that have deeper coffers and more reliable revenue sources. Additionally, our findings suggest colleges that were highly leveraged before the Great Recession did not engage in debt markets as much as their peers, which provides evidence of prudent borrowing behavior. At schools that did increase borrowing significantly during the Great Recession, subsequent spending on educational and related expenses increased, suggesting these increases in debt were likely strategic efforts to better serve students. Second, the disproportionate impact the Great Recession had on borrowing practices at HBCUs and public institutions suggests more attention needs to be paid to the financial wellbeing of these institutions, and policymakers should ensure these colleges receive adequate resources that prevent borrowing out of necessity. The declining share of expenditures that were used on education and related expenses at high-borrowing HBCUs and public institutions point to a concerning trend that cash-strapped colleges accessed debt markets out of necessity rather than strategy. Because this approach to borrowing can have deleterious effects for students, it is important to closely monitor and better understand these practices.

51 Robert Kelchen, *Higher Education Accountability* (Baltimore: JHU Press, 2018).

These research findings also point to additional avenues for future research:

- It is important to understand what financial indicators could be used to better monitor borrowing and clearly identify risky borrowing behaviors. This line of research would better inform oversight and give institutional stakeholders better data to improve shared governance.
- Additional case studies on troublesome borrowing at institutions would help clearly identify the processes that lead to these behaviors. In our study, CFOs spoke to us about various aspects of the borrowing process which we distilled into common themes. However, interviews, document analysis, and synthetic control estimation strategies with a sample of institutions that borrowed irresponsibly could provide important insights into the patterns of decision making that contributed to irresponsible behavior. These findings would help inform oversight and shared governance.
- The wholesale forgiveness of HBCU Capital Financing Program borrowers provides an important opportunity to examine the effects of debt elimination on institutional finances and colleges' ability to serve students. Given the historical inequities in HBCU funding, a critical quantitative approach to understanding the effects of this forgiveness program can provide important insights into additional financial programs that may potentially benefit HBCUs or other minority serving institutions.
- Our study provides some insights into the relationship between large increases in borrowing and educational expenditures. Future research should more closely examine the relationship between borrowing and student outcomes.

Appendix A. Methodology and sample

We took a mixed methods approach to understand how colleges and universities respond to periods of crisis and the effects of these crises on capital structure decisions. First, we focus on debt-related decisions during the Great Recession. Using an event study approach, we examined how institutions' capital structure changed after the exogenous shock of the recession. We leveraged institution-level data from the Integrated Postsecondary Education Data System to collect information on each school's enrollment, assets, tuition revenue, endowment, long-term debt, and institutional characteristics. We modeled event studies for public and private nonprofit institutions which are included in Appendix B. We also descriptively analyze changes in debt and leverage across institutional characteristics including control (i.e., public or private), Carnegie classification, and HBCU status given the historic resource and credit market constraints these institutions faced.

Because there is considerable heterogeneity across institutions and their behaviors, we narrowed our analysis on institutions with large increases in debt during the Great Recession in order to better understand the characteristics of institutions engaging in this behavior as well as their potential impacts. As discussed below, we also purposefully sampled institutions across key characteristics for our qualitative portion of this study to better understand borrowing decisions.

Quantitative methodology

To understand the types of institutions increasing debt, we first identify colleges and universities that had large increases in their average total debt from 2006 through 2008 and from 2009 through 2011. This pooled average allows us to identify schools that increased total debt over 50% during the Great Recession. We identify further extremes using a 90% and 150% increase, as well. After identifying these high increase institutions, we restrict our sample to a single year of data and use the following linear regression approach:

$$y = a + \beta_1 X_i + \varepsilon$$

Where y is a binary indicator equal to one if an institution increased its debt by 50% from a rolling average of 2006 through 2008 and a rolling average of 2009 through 2011 (and 90 and 150 percent in our additional specifications), X_i is a vector of institutional characteristics including Carnegie classification, HBCU status, control (e.g., public or private), 2010 endowment per FTE, 2010 enrollment, 2010 share of revenue coming from tuition, 2010 share of revenue from the state, and the 2008 pre-recession leverage ratio. Our findings are included in Table 1 and discussed in the main body of the report.

To understand the relationship between large increases in borrowing and an institution's ability to serve students, we use a difference-in-differences (DD) approach. Although DD is typically used to derive causal estimates, institutions actively increase their debt totals, and thus the treatment is endogenous. Instead, we are using the DD approach to measure the longitudinal relationship between this increase in debt and educational expenditures. As a proxy for serving students, and to account for an institutions' relative ability to spend on education given their larger debt totals, our outcomes of interest are the percent of total expenditures used for education and related expenses, total education and related expenditures, and per FTE education and related expenditures.

We estimate the following equation:

$$y_{it} = a + \beta_1 X_{it} + Treat_i + Post_t + (Treat\ x\ Post)_{it} + \varepsilon$$

Where the vector of covariates mimic year-by-institution versions of the aforementioned vector, $Treat_i$ is an indicator if the college increased debt by at least 50%, $Post_t$ is a binary indicator equal to one for years 2009 forward, and the interaction is our coefficient of interest. Our findings are included in Table 2 and discussed in the main body of the report.

Because we know certain institutions, including HBCUs, have historically been less resourced than their predominantly white counterparts, periods of financial duress, such as the Great Recession, may have forced these institutions to access debt markets in order to sustain operations. Similarly, public institutions faced decreases in state revenue during the recession, which may have prompted a need to access debt markets. In both of these cases, the decision to borrow may have been less planned and more borne from a moment of crisis. As such, the increased debt and future debt servicing costs may negatively impact these institutions' ability to adequately spend money serving the needs of students. To test this hypothesis, we conduct a difference-in-difference-in-differences (DDD) using the following equation:

$$y_{ijt} = a + \beta_1 X_{it} + Treat_i + Post_t + Char_j + (Treat\ x\ Post)_{it} + (Treat\ x\ Char)_{ij} + (Post\ x\ Char)_{jt} + (Treat\ x\ Post\ x\ Char)_{ijt} + \varepsilon$$

Where $Char$ is a binary indicator if the college is an HBCU or public institution, modeled separately. Our findings are included in tables 3 and 4, respectively, and discussed in the main body of the report.

Qualitative methodology

Using our descriptive statistical findings, we purposefully sampled institutions for the qualitative portion of our analysis. A broad range of over 2,000 postsecondary, nonprofit institutions were included in our overall sample and segmented by institutional characteristics. CFOs from these segments were randomly selected and contacted via email to request participation in video conference interviews. The eight CFOs that agreed to participate represent a range of institutional characteristics of interest, such as: geographic diversity, institution control (public/private), Carnegie classification, as well as variations in endowment size and debt and leverage changes. Of our eight participants, six CFOs work at public four-year institutions, one CFO works at a private institution, and one CFO works at a public community college.

We conducted 45-60 minute interviews with CFOs, focusing our conversations on three primary areas: institutional debt strategies, factors influencing the decision-making process, and the impacts of institutional debt. The interviews sought to obtain general information on the borrowing decision as well as how these decisions are made during periods of crisis, including COVID-19 and the Great Recession. While the interviews were semi-structured, we loosely based our questions off the interview protocol included in Appendix C. Both deductive and inductive coding were used to identify and reveal patterns and themes previously unknown to the research team.

Appendix B: Event study estimates

Years from 2009	debt	debt_fte	leverage
-3	-8.452e+07*	-4,993	0.0156
	(4.908e+07)	(6,099)	(0.0112)
-2	-6.641e+07	-6,440	0.0161
	(5.179e+07)	(4,270)	(0.0112)
0	9.274e+06**	1,535***	0.0219***
	(4.531e+06)	(482.9)	(0.00190)
1	3.480e+07***	4,019***	0.0141***
	(6.189e+06)	(643.9)	(0.00238)
2	3.534e+07***	3,509***	0.00599**
	(7.312e+06)	(671.5)	(0.00265)
3	3.450e+07***	5,041***	0.00939***
	(5.714e+06)	(784.3)	(0.00299)
4	4.706e+07***	5,737***	0.00417
	(9.233e+06)	(815.2)	(0.00313)
5	3.823e+07***	4,984***	-0.000205
	(5.428e+06)	(739.5)	(0.00317)
6	3.528e+07***	5,164***	0.00407
	(6.222e+06)	(904.6)	(0.00342)
7	4.187e+07***	5,858***	0.0101***
	(6.898e+06)	(951.8)	(0.00362)
8	3.691e+07***	6,032***	0.00607
	(1.218e+07)	(1,102)	(0.00384)
9	2.866e+07**	4,340***	0.00820*
	(1.368e+07)	(869.2)	(0.00431)
Controls	Yes	Yes	Yes
Constant	-1.259e+08**	7,320*	0.164***
	(5.928e+07)	(3,740)	(0.0113)
Observations	25,350	25,350	25,350
R-squared	0.331	0.354	0.116

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix C: Interview protocol

Understanding institutional borrowing during a time of crisis interview protocol

Thank you for agreeing to participate in our study on institutional borrowing. We are excited to engage in conversation to better understand the process and impact of debt at your institution, including how debt strategies are devised, the decision-making process around debt, and the effects of debt. In an effort to provide more structure and clarity to the conversation, below are some definitions of theories guiding our research, in addition to an outline of questions and topics we are interested in discussing. These questions are coalesced into three broad categories: debt strategies, the decision-making process, and the effects of debt. We hope to have an open dialogue about these topics, so we will not necessarily ask all the questions or follow the order below. However, we hope this outline provides helpful context ahead of our call. We look forward to learning about your experience and expertise.

Definitions

Pecking Order Theory (PO): Institutions rely on internal financing mechanisms prior to turning to debt. With this strategy, as institutions' revenue increases, the need for debt decreases.

Static Trade-Off Theory (STO): Institutions weigh the cost and benefits prior to making debt-related decisions by weighing the costs of using internal funding and the benefits of taking on debt.

Debt strategies

1. Do you have a formal or written capital structure policy/debt policy?
2. Briefly describe the policy. When were they put in place and how frequently are they revised?
3. Does the university have a preference for a type of debt financing strategy, such as pecking order (Pecking Order) or static trade-off (STO)?
    a. How, if at all, have debt preferences shifted during the COVID-19 pandemic (C19P)?
    b. Would you say there are differences to the approach you personally prefer compared to that of the other university leadership?
4. (Following up from the pre-interview questionnaire response, if applicable) Does the university have a target range for your debt ratio? Why or why not?
    a. What is your preferred leverage ratio? Why?
    b. Is this a flexible target or a strict target? Why?
    c. How would you describe the amount of debt your university has? For example, too much, an appropriate amount, or not enough? Why?
5. What has your debt financing strategy looked like over the past 18 months?
    a. How, if at all, have your institution's preferences shifted during C19P?
    b. Thinking back, what impact did the Great Recession have on your current capital structure decisions during C19P?

6. Can you tell us a little about the types of debt that the university prefers?
   a. Did these preferences shift during C19P?

Factors influencing the decision-making process

1. How is the conversation to access debt markets typically initiated? Can you walk us through the process?
   a. How do you seek input from others on borrowing decisions? Who do you consult with regarding borrowing decisions? What information do you provide to these individuals?
   b. How did C19P shape this process and the people involved?
2. As the pandemic began, what were (the things/metrics) you kept a close eye on related to borrowing decisions?
   a. Are these things/metrics you regularly track?
   b. What types of shifts were you looking for?
   c. Were these similar to the Great Recession or did the Great Recession inform what to watch out for in any way?
3. How aware are other cabinet-level leaders about borrowing decisions?
   a. Do you feel that institutional leadership understands the debt-related financial challenges facing the university?
   b. Did C19P impact the awareness, interest, or involvement in debt-related decisions of other institutional actors?
4. What role do outside funders play in the university's debt decision making?
5. How does the reputation of the university affect the university's debt decision making?
6. How do you approach disagreement surrounding borrowing decisions? Can you provide us with an example?
7. What impact does the university's strategic plan have on debt decisions during economic downturns?

Impacts of debt

1. Can you provide an example of when taking on debt helped your institution meet its goals?
2. Do you have an example of when taking on debt hindered the institution's ability to meet its goals?
3. How did the effects of borrowing decisions during the Great Recession impact decisions during C19P?

Concluding questions

1. What type of knowledge do you wish others had about accessing debt markets?
2. What additional data do you feel would be necessary to make more informed decisions?
3. Based on your expertise, is there anything that we're missing or should be trying to understand regarding university decisions about debt?

About the authors

James Dean Ward is a senior researcher at Ithaka S+R on the Educational Transformation team. His work focuses on federal and state higher education regulatory, funding, and financial aid policies. James earned a BA in economics and history from Cornell University and a PhD in higher education policy from the University of Southern California. James has published and presented work on state financial aid programs, performance-based funding policies, for-profit college regulation, institutional finance, and equity in postsecondary opportunities. In addition to serving as a research assistant in the Pullias Center for Higher Education, James was a postdoc research fellow at the University of Southern California. Prior to graduate school, James conducted research on postsecondary finance at the National Association of College and University Business Officers and served as an institutional researcher at Harvard University. As a higher education consultant for ASR Analytics and Hanover Research, he worked on projects related to institutional aid policies, program development, admissions and recruitment practices, and institutional economic and community impact.

Mya Haynes is an analyst on Ithaka S+R's Educational Transformation team, where her research predominantly focuses on college access and success for lower-income students. Prior to joining Ithaka S+R, Mya interned at the American Civil Liberties Union, where she co-authored a policy research brief and evaluated the National Advocacy Institute—a summer program engaging youth in advocacy and activism. Mya holds a master's degree in higher education with a concentration in public policy and a bachelor's degree in sociology, both from the University of Michigan. Her research experiences as an undergraduate and graduate student centered around student success for Black and first-generation college students through mixed methods studies.

Staci Gusakova is former Ithaka S+R intern who researched institutional borrowing alongside James Ward. Currently, Staci works as a User Experience Research Associate at Google and conducts mixed methods research to make Google Search Ads more useful and trustworthy. Staci holds a PhD from the University of Michigan in Psychology and Women's and Gender Studies. During her PhD, she researched what factors help people maintain high quality relationships over time, with a specific focus on issues that disproportionately affect gender, racial, and sexual minorities.

We thank the TIAA Institute for their support of this research.

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(08/22)