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The Other Debt Crisis

by

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Much public attention has focused on higher education for the growing debt burdens that students are amassing, the steadily increasing tuition levels, and their impact that these debt burdens, on students' access to higher education and postgraduate educational, employment and lifestyle options. While students who have amassed six figure debt levels during college are publicized in the press, most graduating students' debt levels are much smaller

Because of Cornell's need-based financial aid policies, which for students from relatively modest family income backgrounds (as of the fall 2014 \$60,000 and previously \$75,000), most Cornell students graduate from Cornell with no or only modest loan burdens. For the class that graduated in 2012, the mean cumulative student debt at graduation for the 45% of the class that had ever borrowed was \$20,490 and the median was \$14,592. Similarly, for the roughly 30% of the entering class of 2016 that were awarded financial aid and had any loans in their first-year aid packages, the average loan was \$4,744. Cornell has worked very hard to keep its students loan burdens manageable and is committed to continuing to do so.²

There is, however, another debt crisis in higher education, and one from which Cornell has not been immune. While most people understand that colleges and universities hold stocks of financial assets, it is less well known that they also borrow funds and incur debt. The *New York Times* reported in a recent story that in the aggregate debt doubled in inflation adjusted terms between 2000 and 2011 and stood at over \$205 billion in 2011 at the more than 500 academic institutions whose debt was rated by Moody's.³

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² Cornell University *2013-2014 Operating and Capital Budget Plan* (May 2013), (available at <http://dpb.cornell.edu>), p 37 and 56. Information on the percentages of students was provided by Dan Robertson, Senior Research and Planning Associate in Cornell's Office of Institutional Research and Planning on July 30, 2013

³ Andrew Martin, "Building a Showcase Campus, Using An I.O.U.", *New York Times* (December 13, 2012)

At Cornell, the total (Ithaca and Medical College) external debt level was \$494.7 million on June 30, 2003; ten years later on June 30, 2013 it had risen to \$1.855 billion – a 375 percent increase in nominal terms.⁴

Why and How Do Academic Institutions Borrow Money?

Academic institutions borrow money for a number of reasons. They may finance partially, or entirely, building projects that have revenue streams associated with them that will cover the cost of debt service. Residence life projects, such as student housing or dining facilities fall in this category of projects, where debt service costs can be included in housing or dining rates. They may similarly borrow to finance infrastructure projects, such as IT networks, or utilities (heating, electric power, cooling) where debt service costs can be charged out to users (academic and nonacademic sectors of the university) and these costs recouped through tuition and other revenues that the units receive.

Many construction projects, especially academic and research building on campus are financed largely through gifts from individuals, corporations, foundations and government. Academic institutions, and Cornell was no exception, historically have gone through a process in which their development office makes feasibility assessments of the numbers and sizes of gifts that might be received for a project and the project is undertaken only if the projections of giving exceed the expected costs of the project. Debt financing may be “strategically” used for part of a project if otherwise the institution would fund part of the project with its endowment and the expected return on the endowment exceeds the institution’s cost of borrowing funds. It may also be “strategically” used for research buildings in which externally funded research is conducted because the interest payments on such debt can be at least partially recovered from indirect cost recoveries on external research grants.

Even if the projections are accurate, sometimes the gifts are received at a slower rate than anticipated and the institution must borrow “bridge funds” to finance the project until the anticipated volume of gifts is fully received. Sometimes the estimated cost of a project proves to be an underestimate and/or the actual value of gifts turns out to be lower than expected. When this occurs the institutions must borrow using long-term debt to help finance the project. The funds need to service the debt will come from the general operating budget of the university, which includes revenues from tuition, gifts, endowment spending, and for debt associated with research buildings from indirect cost recoveries on externally funded research grants. For institutions with medical college, revenues from physician practice plans that accrue to the medical college may also be included.

Academic institutions also use lines of credit, short-term borrowing, to help cover various operating expenses. The revenue sources that an academic institution receives do not necessarily generate a smooth flow of resources over the course of a year. For example, tuition payments flow to the university primarily at two points of time (the start

⁴ 2013-14 Cornell Operating and Capital Budget Plan (May 2013), table P and 2003-2004 Cornell University Financial Plan: Operating and Capital (May 2004), page 50

of the fall and spring semesters) but staff salaries and utility expenditures occur all year. Similarly funding from the federal or state governments may be delayed and not arrive until after expenditures have been made. If an institution has sufficient financial assets invested in very liquid form (short-term money market instruments) this reduces the need for lines of credit. However, if rates of return on longer-term assets such as stocks, bonds, and private equity are substantially higher than the money market rates, an institution's asset managers may focus their investments on these assets and seek to preserve liquidity through lines of credit. Prior to the financial collapse in 2008, many institutions, including Cornell, did not worry a lot about the liquidity in their asset portfolios and depended on lines of credit to assure they had funds to make needed payments. When fears that lines of credit might freeze arose during the financial collapse many large institutions, including Cornell, borrowed large sums (at Cornell \$500 million in 2009 split equally between 5- and 10-year maturity bonds) to generate liquidity and to avoid having to sell endowment assets during a depressed market.

Nonprofit academic institutions can borrow using tax exempt debt, which allows it to pay lower interest rates, for qualified capital projects (new buildings, renovations, and infrastructure) that are used for educational purposes, less any restricted gifts. These projects cannot be used for any taxable activities (such as rental to private companies or for business incubators). Borrowing that is done to support operating expenses or for private use purposes, either long-term or via lines of credit, is not eligible for tax-exemption and must be done at taxable rates.

Long-term borrowing can be done either at fixed or variable interest rates. Variable interest rate bonds have weekly or daily maturities and interest rates that are tied to a broad index rate and their interest rates may increase or decrease over the life of a bond. Decisions on whether to issue fixed or variable rate securities are based on the institution's expectations as to what will happen to interest rates over time.

To provide protection when an institution is unsure about the direction in which interest rates will move, it can buy "swaps" – contracts that require it to sell bonds in the future with a variable or specified interest rate. For example, if an institution is planning a construction project that will start three years in the future and it believes that interest rates will rise in the future, it can buy a "swap" that allows it to lock in a lower future interest rate for the bonds it will issue to finance the future project. But if instead, interest rates fall quickly, the value of the "swap" becomes negative because it will force the institution to borrow at a rate higher than the then prevailing market rate.

Under some circumstances, the institution can try to "unwind" the swap by paying market price at the time for the swap to get out of the contract. Unwinding swaps can be costly. However, some contracts do not provide for the ability to exit the contract and in that circumstance the institution is locked into borrowing the funds at a higher rate than is necessary. Bloomberg News reported last July, although Cornell has never confirmed the report's accuracy, that Cornell purchased more than \$1 billion of swaps before the financial collapse, that it had paid \$30 million in termination fees in 2010 to unwind

some of these swaps, and that it is continuing to pay interest on bonds that it has never issued because of the swap contracts that it could not unwind.⁵

Given the prevailing level of interest rates at a point in time, the actual interest rate that an academic institution must pay on a bond that it issues depends upon the institution's credit ratings. The major raters, Moody's and Standard & Poor's are two of the largest, come up with a rating for an institution based upon a large variety of financial and academic indicators that measure student demand, financial reserves, capital investment and debt, operating performance (including diversity of revenue sources), and the quality of management and governance.

Moody's highest ranking, Aaa, is given to institutions that demonstrate the strongest creditworthiness relative to other tax exempt issuers. The rankings then progressively decline to Aa, A, Baa, Ba, B, Caa, Ca and C, with rankings below Baa indicating below average credit worthiness. Within each of the rating category other than Aaa, Moody's adds a numerical modifier indicating that the institution is in the highest (1), midrange (2), or (3) lowest end of that category. As an institution's ranking declines, the interest rate it must pay to borrow funds increases and this limits the ability of the institution to borrow funds and undertake projects in the future. With interest rates at current historically low levels, the spread on rates between the top rating classes is very low: if Cornell's rating changed in either direction, the impact on its borrowing rate would probably be in the range of 10 to 15 basis points (0.10 to 0.15 percentage points).⁶

In May 2007, prior to the financial collapse, five Ivy Institutions (Columbia, Dartmouth, Harvard, Princeton, and Yale) were rated Aaa, Brown and Cornell were rated Aa1 and Penn was rated Aa2. In contrast, only 14.5% of the 276 institutions ranked by Moody's received at least an Aa2 rating in May 2007.⁷ In April 2010 Moody's warned of a possible downgrade of Cornell's debt by revising their "outlook" to negative. In response to the steps that the university was undertaking to restore its financial equilibrium this downgrade never occurred and in February 2012, Moody's returned Cornell's outlook to stable. (Standard & Poor's did reduce Cornell's rating after the financial collapse, downgrading it on its scale from AA+ to AA, which is equivalent on the Moody's scale of a move from Aa1 to Aa2). Five years later, in July 2012 after the institutions recovered from the worst of the financial crisis, the only Ivy whose Moody's rating was lower than in 2007 was Dartmouth, which had dropped to Aa1; in contrast approximately 20% of the institutions that Moody's ranked in both years had a lower rating in 2012.⁸

⁵ Michael McDonald, "Indebted Cornell Chases Donors in 'Pay as You go Expansion'" (<http://www.bloomberg.com/news/print/2013-07-02/cornell-awash-in-debt-chases-donors-in-pay-as-you-go-expansion.html>)

⁶ Email correspondence from Vice President Joanne Destefano (August 5, 2013)

⁷ Moody's Investor Services, Special Comment *Private College and University Medians 2007* (May 2007), (Google title and click on the link –ratings categories are found in appendix VI)

⁸ Moody's Investor Services, Special Comment *U.S Private College and University Medians Underscore Revenue Challenges and Mixed Outlook for the Sector* (July 2012), (Google title and click on the link – ratings categories are found in appendix VI)

Why Did Cornell's Debt Increase So Dramatically?

Cornell is not unique in having a high level of debt. Table 1 provides information for Cornell and a set of competitor private research universities on the institutions' total debt and endowment value as of 2011-2012. Cornell's debt level of \$1.897 billion was the sixth highest out of the 11 institutions and its ratio of debt to endowment, .384, was the highest of the group (It is important for us to note that the debt on construction projects undertaken at the Ithaca Campus Contract Colleges that are financed by bonds issued by New York State are not included in Cornell's debt totals and NYS rather than Cornell funds the interest payment on that debt).

While some might conclude from this ratio that Cornell has taken on too much debt, the story is actually much more complicated. The debt level an institution has at any point in time depends upon the history of the construction projects it has undertaken and the history of borrowing it has undertaken for other reasons. Cornell's debt balance for capital projects in June 2013 was approximately \$948 million on the Ithaca campus and \$449 million at the Weill Cornell Medical College campus. Over half of this debt came from three different sets of major projects and their different nature indicates how complicated the debt story actually is.

Debt balances from two major projects relating to infrastructure contributed to about 14% of the Ithaca campus total. The Lake Source Cooling project of the late 1990s expanded the capacity of the university to cool the campus in a way that was environmentally friendly at a lower operating cost than more conventional alternatives would have been. Similarly the Combined Heat and Power Plant project, which became operational in December 2009, was projected to lead to dramatically improved efficiency and thus lower operating costs and greenhouse gas emissions. Although not part of the initial plan, it also allowed the university to eliminate its use of coal and further reduce its greenhouse gas emissions.⁹ These two projects were planned to be funded with debt and their debt service is charged out to units in the rates they pay for utilities. Although the planned debt for both projects is still being paid off, if the projected savings for the latter project prove correct, both projects will have actually reduced the utility rates charged to units below what they otherwise would have been and thus both projects will have been economically beneficial to Cornell, as well as environmental friendly.

Decisions by Cornell in the mid-90s to provide a common living experience for all first-year students on North Campus led to the expansion of residence life on North Campus with improved housing and dining facilities in the late 1990s. The decision was also made to guarantee all sophomores the opportunity to live on campus and to build new living and learning houses on West Campus to improve the quality of housing available to upper class students and to integrate more fully the academic and residential life experience of students. Again, both projects were planned to be funded by debt and their debt service, which currently is about 18% of the Ithaca campus total, is charged to students living on campus in the rates they pay for housing and dining. Of course the

⁹ Email correspondence from Robert R. Bland, Senior Director Energy and Sustainability Department (August 5, 2013)

improved quality of residential life facilities came at a large cost and over time, Cornell's students' housing and dining costs have risen relative to our competitors'.¹⁰ So the Cornell students who benefitted from these improved residence life facilities as a group directly bore the costs of the improved housing and dining facilities. To the extent that higher resident life costs increase the grant aid that undergraduate financial aid recipients received, these increased financial aid costs also took funds away from the academic side of the university and put pressure on tuition levels.

A major research university is always looking to have the most modern and up to date scientific research facilities to enable frontier innovative research and to attract and retain high quality faculty. After the completion of Duffield Hall in the late 1990s which placed Cornell at the forefront of research in nanotechnology, the university understood at the start of the 21st century that to be a leader on the Ithaca campus in genomics and other emerging life sciences areas that a new facility would be needed. Similarly, in 2006 a decision was made to provide a new facility to enhance Cornell's research capabilities and ability to attract research funding in the physical sciences.

It was anticipated in both cases, after careful prospect analysis undertaken by Cornell's Development office that at best both projects could only marginally be funded through donations from public and private sources. However, initial budget projections for the two projects prepared by the Provost's office assumed that both would be fully funded from external gifts.¹¹

Given the pressure the university felt to remain at the frontier of scientific research, both projects began before substantial external funding was received. In addition, over time, the estimated costs of both projects increased. While a major \$50 million donation was received from Sandy and Joan Weill to support constructions costs for the life sciences building and funding for an institute to be housed within the building (and the university gratefully named the building after them) the flow of gifts that the university anticipated to fund the building never fully materialized,. Over time the annual budget and operating plan of the university began to assume that a "bridge loan" would be needed to complete the building. Shortly after the completion of the building in 2008, financial markets collapsed, the great recession began and prospects for large gifts to complete the funding of the building vanished. The "bridge loan" became much more long-term in nature.

Construction on the physical sciences building began in November 2007; however, no major gifts had been received for the building by that date. The 2008-09 budget plan of the university assumed that only a small portion of the building cost would be funded by long-term debt with the vast majority of the construction costs funded via a

¹⁰ In 1994-95, prior to Cornell North and West Campus residential life projects, our room and board costs were the 4th among our Ivy peers. In 2012-13 Cornell's costs were the highest.(Authors' calculations from data in the 95-96 and 13-13 annual budget reports)

¹¹ Cornell University 2002-03 Financial Plan: Operating and Capital (May 2002), p.36 (for the life science building) and Cornell University 2005-06 Financial Plan Operating and Capital (May 2005) , p.50 (for the physical science building)

“bridge loan”. After Cornell’s large projected structural deficit became apparent in 2009-10, the Physical Science building debt clearly became more long-term in nature. Debt from Weill Hall and the Physical Sciences building now represent over 20% of the Ithaca campus capital project debt balance.

President David Skorton instituted a temporary freeze on all new construction on campus in 2009-10 and that was followed the year by a stricter set of new capital project spending guidelines that required that no more than 50% of any capital project should be debt financed unless the project is a life-safety or major infrastructure priority and that “non-core” facilities (such as the Johnson Art Museum expansion) be constructed without the use of any debt finance. In addition, debt financing for any project should be undertaken only if the overall financial position of the university, as measured by key financial ratios, permitted it¹².

A major project now being constructed at the NYC Weill Cornell Medical College campus is the \$650 million Belfer Research Building. Over \$400 million dollars in gifts have been raised to support that building: it is being partially financed by debt in the range of \$218 million. This building was deemed by the university to be essential to the future of the Medical College. However, the debt it added to the university’s balance sheet brought Cornell to the point that the decision was made that at least temporarily no new debt finance will be permitted for any new building projects, including those undertaken at the new NYC Tech campus. Construction at Cornell has become in President Skorton’s words, “in a pay-as-you-go mode”¹³

These three buildings are all important contributors to the research mission of the university. Some, but not complete, support for their debt service comes from indirect cost recoveries on federally funded research that is conducted within the buildings. Because their debt service comes largely from the operating budgets of the university, its impact on Cornell’s operating budgets must be considered.

Table 2, show for the Ithaca campus, how debt service in the operating budget has varied between FY08 and FY14. The dramatic doubling in the Ithaca campus debt service in FY10 is largely due to another cause of debt; the \$500 million in taxable bonds that Cornell issued in 2009 after the financial meltdown to generate liquidity and to avoid having to sell off endowment assets at depressed prices. The gradual decline in debt service levels in the years after FY10 reflect that Cornell has not been taking on any new debt for construction and some of its existing debt is being retired.

Debt service was about 3% of operating expenditures in FY09 before the financial meltdown. By FY10 it had dramatically jumped to 7.3%; this reflects both the increased cost of debt service in that year and the reductions in operating expenditures that the university was undertaking to begin to solve its structural operating budget problem (including freezes on faculty and staff salaries for a year and reductions in employment).

¹² Cornell University, *2010-2011 Operating and Capital Budget Plan* (May 2010), Appendix R (Capital Project Spending Guidelines)

¹³ Michael McDonald (July 2, 2013)

Over time the ratio has fallen back to slightly more than 5% .This ratio will continue to decline in future years as more university debt is retired. A big reduction will occur in FY2014 when the university will retire the first half of its \$500 million taxable debt and then a second big reduction will occur in FY2019 when the remaining \$250 million of taxable debt will be retired.

The annual debt service payment on the \$500 million of taxable debt was \$24.5 million last year. After the first half of the debt is retired, the payment will fall to \$13.625 million and about \$10.875 million will be freed up from the FY2014 budget. Cornell can potentially use these funds for things such as new initiatives, faculty and staff salaries, undergraduate financial aid or limiting tuition increases. Then in FY2019, the ending of the remaining \$13.625 million in payments provides another set of choices for Cornell.

As Cornell's external debt declines, the university's financial picture will improve. It will have more freedom to borrow funds in the future without fear that doing so would reduce its bond rating, which would increase the cost of borrowing. Will Cornell ever return to using debt finance for building projects? We shall see.

Table 1

Total Debt and Endowment Values at Cornell and Other Selective Private Research Universities in 2011-2012 (FY2012)

	Total Debt (billions of dollars)	Total Endowment (billions of dollars)	Ratio of Debt to Endowment
Cornell	1.897	4.497	.384
Brown	0.660	2.460	.268
Columbia	1.650	7.654	.216
Dartmouth	1.125	3.486	.323
Duke	1.389	5.555	.250
Harvard	6.039	30.435	.198
MIT	2.460	10.150	.242
Princeton	2.883	16.594	.170
Stanford	2.709	17.036	.159
Pennsylvania	1.100	6.755	.163
Yale	4.508	19.345	.233

Sources: Debt data is at the end of FY2012 and was shared with us by the Yuba Group from FY12 financial statements and rating reports. Endowment data is from Cornell's *2013-2014 Operating and Capital Budget Plan* (May 2013), table L. All data have been rounded to the nearest million dollars. These data do not take into account the support Cornell received for operations and capital projects from New York State for its Ithaca Contract Colleges.

Table 2

Ithaca Campus Debt Service Level and Comparison
FY08 to FY14

	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Debt Service (DS) (millions of dollars)	59.9	56.1	128.9	117.3	112.2	101.3	100.4
DS relative to Operating Expenditures	.035	.031	.073	.064	.060	.053	.051

Source: Authors Computations from data presented in the 2009-2010 to 2013-14 issues of Cornell's Operating and Capital Budget Plan (Ithaca Campus – Summary Table) (available at <http://dpb.cornell.edu>) The figures for FY08 to FY12 are actual realized values, those for FY13 are forecasted final values, and those for FY13-14 are the budget plan values