

Introduction

All of this work on college and university capital structures and it's come down to this: It's all about the operating budget! Whether we knew it or not when these Master Classes began, that's where we have been heading. From multiple sessions on endowment asset allocations and payout (smoothing) rules, to bringing the liability statement into play and considering how to manage risk by relating debt on the balance sheet to asset classes, to the current papers from Bill Massy and John Core, we have moved squarely into the world of variability and correlations among operating revenues and expenses—and into a much expanded world of financial risk management as hedging volatility. How did we get here, and why is it important?

Our early focus in this Master Class series on asset allocation and endowment spending rules was prompted by the realization during the dot-com meltdown that most endowment payout smoothing rules were not all that smooth when broad markets drop as precipitously as they did in 2000 and the following years. Further, sometimes asset diversification is not as protective as we somehow thought. We reprised old and classic territory: Having selected a set of investment assets that maximized return constrained by our institutions' accepted levels of risk, did we miss something? Or did our chosen payout rules insufficiently damp investment volatility? We understood anew that historically uncorrelated assets can move in the same direction and that payouts based on a few years' averages of market values are less smooth than rules that blend investment returns with inflation-related adjustments. That's today. But in hindsight, I recall that we failed to note that payout rules weighted toward inflation adjustments would have bankrupted many endowments during the stagflation era of the 1970s, when market returns were flat and inflation was measured in two digits! Today is beginning to look more like then.

Two issues are worthy of note in this unjustly short reprise. Finance as risk management is in full flower in the asset allocation discussion—think Sharpe ratios, for a summary statistic. Investment committees review probability distributions governing asset class performance, and correlations among asset classes. They choose an acceptable level of investment risk, and the right asset allocation follows. Note that I referred to investment *risk*—the protection of the asset. Rarely have I heard investment committees talk about the volatility of operating budget revenues and how the endowment investment risk choice relates to that! I know of trustee investment committees whose meetings are not attended by budget directors.

Next comes the determination of the

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endowment payout rates, and here the argument is often about *payout as residue*: expected return minus operating inflation equals payout for budget use. The payout formula is based on protection of future purchasing power of the endowment with respect to budgets. This is a hugely important concept but, again, not deployed in light of knowledge of the variability of operating revenues and expenses overall. One goes on to smooth payouts by basing them on multiyear averages of endowment market values, on estimated budget inflation, or on a weighted average of both. Smoothing is an attempt to protect the operating budget from volatility in investment returns, which is to say, volatility in one particular revenue stream. It's in this sense that our discussions of financial assets (capital) ultimately lead to the hedging of operating budget volatility: It's about the operating budget! But not all of it: The directionality of the logic is from one asset toward a derived revenue stream supporting operations, not vice versa.

Having worked over the financial asset side of the balance sheet, we next needed to analyze the other side of the balance sheet—liabilities, primarily debt—to understand our capital structure comprehensively. That was our topic in the Master Class of 2006. Our class then focused not so much on volatility as on the simple notion that, from the standpoint of the paper presented, to keep risk constant as debt is issued, one needed to match dollar for dollar the debt profile with identical investments in quasi endowment. This appeared to be the perfect hedge. For example, if the debt is variable rate, the endowment would hold the mirror image as an asset. Interest rates go up on debt, interest rate returns match them (although investment value falls for both bond holders and the endowment). One is also prepared to pay the debt off with earmarked assets. A similar scenario applies to fixed-rate debt.

But two issues arose in subsequent discussions. If risk is measured in volatility, then taking on fixed-rate debt adds exactly zero volatility to the mix at hand. So why alter the endowment investment mix at all? On the other hand, if marginal net revenues attending the debt acquisition are zero—i.e., there is no effect on the total budget operating margin, typically a best case—or negative (more typical), then there is added risk at least as measured by an increased fixed cost with a constant or reduced operating margin. Note once again that we are translating a balance sheet issue directly into an operating budget one. Which brings us to Bill Massy's and John Core's papers herein.

Whereas earlier papers focused on either side of the balance sheet and eventually connected with the operating budget, Massy turns this totally around. He dons operating budget “conceptual lenses” to look at the balance sheet from that perspective. Why is that important? Well, for one reason, it's through the operating budget that the real business of colleges and universities gets done. We pay for teaching through the operating budget; we pay

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for faculty research; we pay for support services and buy materials and supplies; we help students to pay tuition and to live in an environment that supports learning and maturation. The list is long. The job of the operating budget is to support our core activities. The job of the balance sheet is to enhance and protect that. (Note that from an earlier perspective, the job of the operating budget was not to consume too much of the financial assets.) Although Massy does not say it this way, he fundamentally asks: *Since operating budgets are core, why haven't we been looking at volatilities and correlations among all revenues and expenses in the same ways we've worried about just two: endowment performance and payouts, and interest on debt?* And he makes the key point that the operating budget links financial assets and liabilities through investment earnings and interest payments on debt. So focus on the operating budget can subsume focus on financial assets and liabilities.

Think about the possibilities: Financial market returns and economic growth are positively correlated; gifts to endowment and to capital projects (which one can flow through operations and subsequently transfer to the balance sheet) are positively correlated with both. But when markets and GDP flag, these correlations combine to shock our typically deterministic forward plans based on expected values of each variable. Expected operating margins may turn quite negative. And more, a weak economy may reduce the abilities of many of our students to pay tuition, thus driving up our need-based financial aid budgets and driving down net tuition revenues. We may have to finance larger portions of buildings as gifts fall

short, even as revenues to support debt service drop.

But with Massy's approach, and its enhancements as described in John Core's paper, we can now think of all of these simultaneously from the perspective of portfolio management: probability distributions governing key revenues and expenses (and by extension endowment performance and interest rates on debt), correlations among classes of revenues and expenses, risk tolerances as defined by how much we want to protect positive budget operating margins, efficient frontiers! In addition to diversifying financial assets to enhance return for a given risk tolerance, why not do the same with revenues and expenses? Developing operating budgets across time as building hedge funds—why didn't we think of something that simple sooner?

Massy's and Core's papers focus on using the endowment to hedge operating budget volatility, an elegant reversal of perspective from that of the typical investment committee. They ask and answer the following question, for example: If one assumes additional variable-rate debt,

how would the endowment asset mix change given a university's specified tolerance for variability around budgeted operating margins? But this is just one of many examples that flow from the global perspectives developed herein. In the simplest terms, one can say that Massy and Core approach development of the optimal capital structure from the need to grow operating budgets and to protect them from excess cumulative volatility. Which is to say, to protect and enhance the core activities of a college or university. That was not the outcome we expected when the Forum and COFHE set out to explore college and university capital structures by launching this series of Master Classes.

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