Financial planning

- **Making financial decisions** Kirt

  How will things change if I take this action?

- **Financial Planning – An Annual View** Sam

  Aligning budgets with decisions

  Using budgets to make decisions

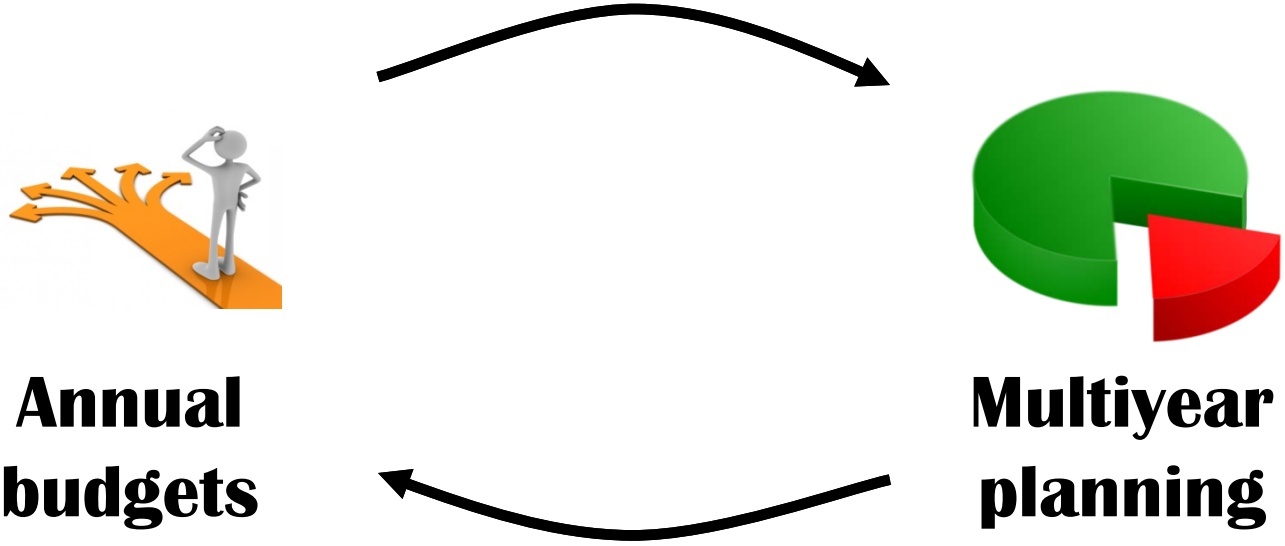
- **Financial Planning – A Multi Year View** Kirt

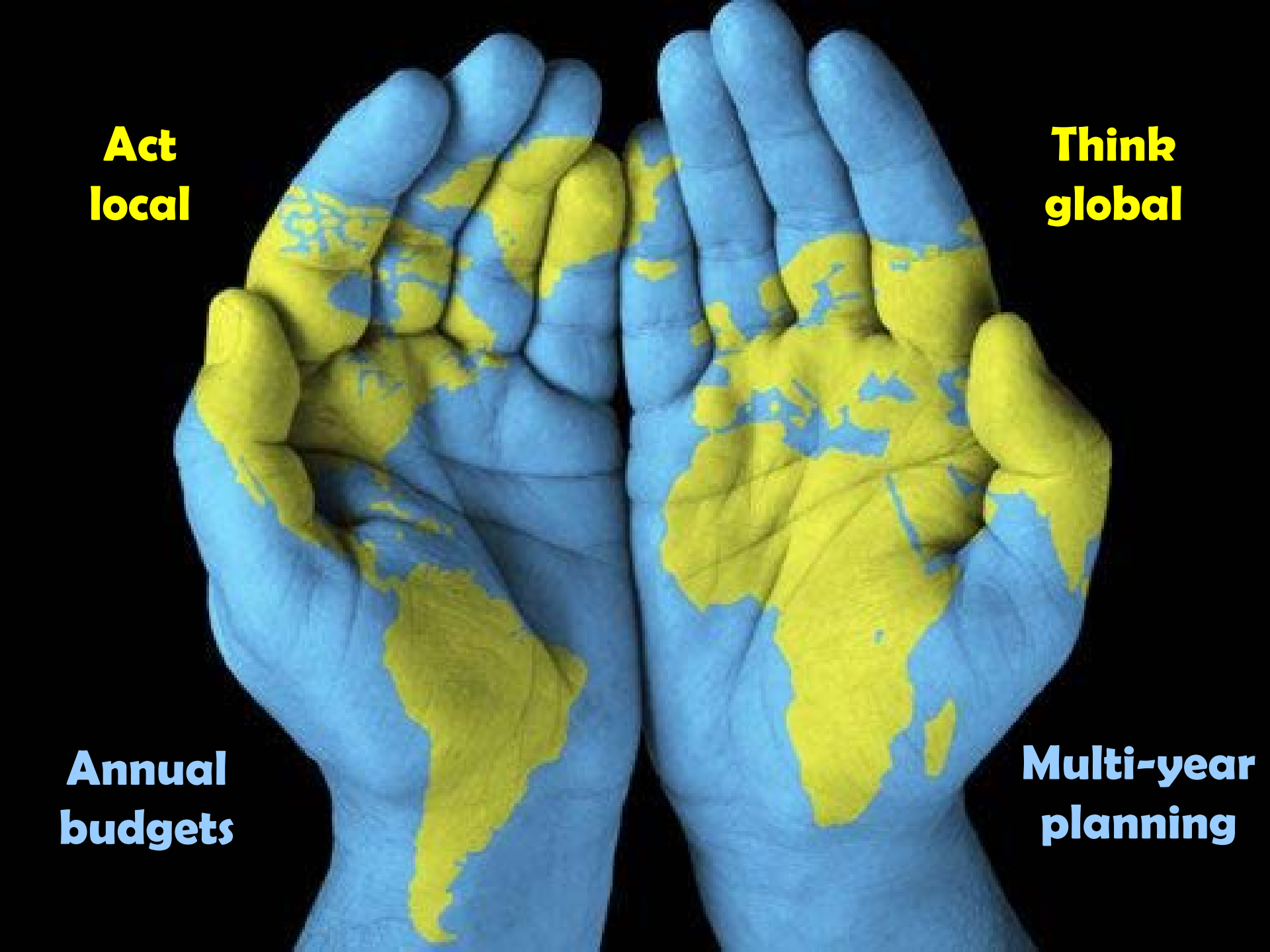
February 25, 2016

Kirt C. Butler
Department of Finance
Broad College of Business

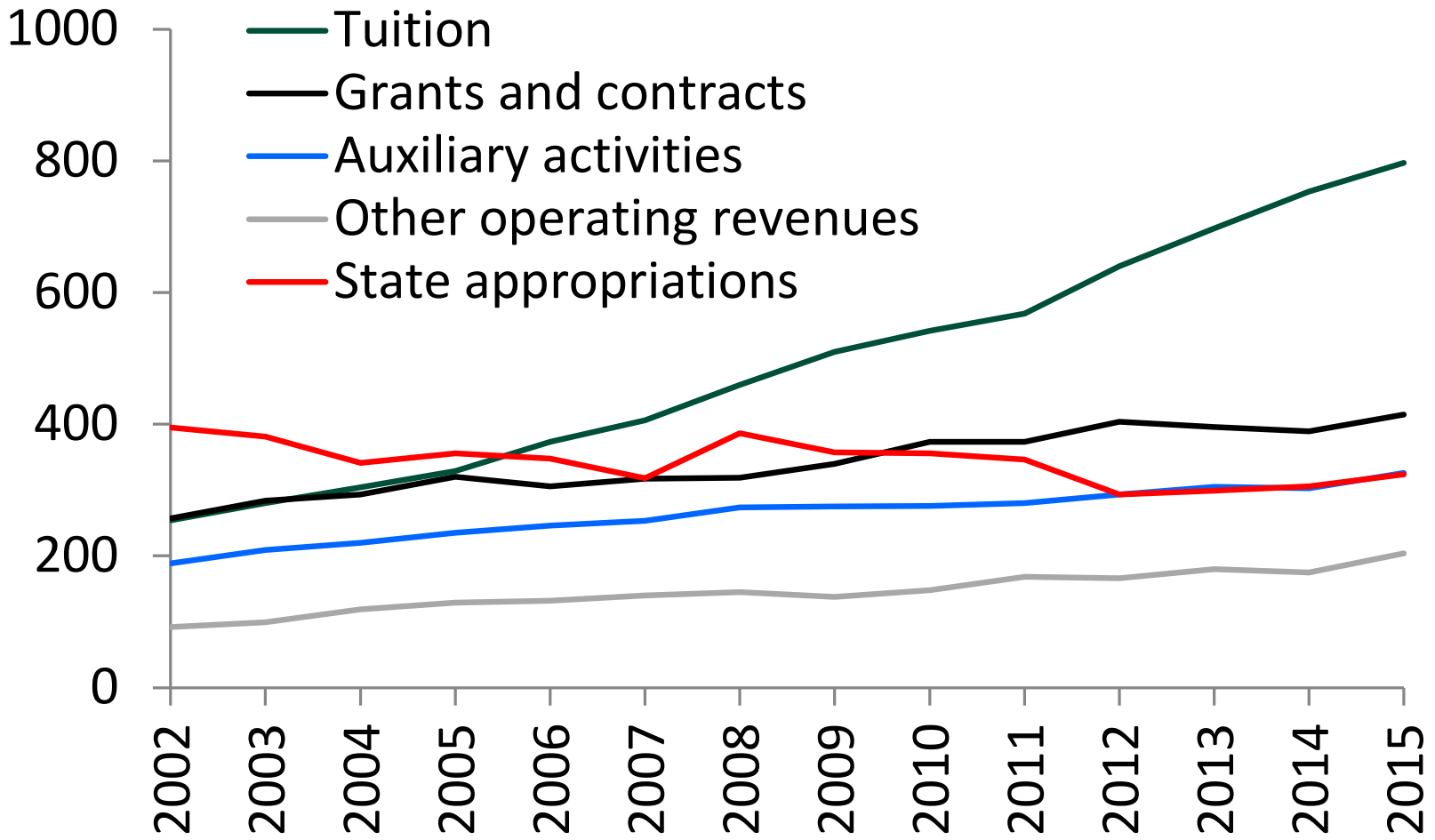
R. Sam Larson
Assistant Dean
Operations and Finance
College of Education

- **Financial planning** provides a framework for evaluating the opportunities, costs & risks of our financial decisions




Act
local
Think
global
Annual
budgets
Multi-year
planning

MSU's new funding paradigm



An increasing reliance on tuition revenue

MSU's new funding paradigm

- **Funds from the State are in short supply**
  - This situation is likely to continue
  - We need to be **entrepreneurial** while still being responsible shepherds of MSU's scarce resources

- **The goal of this session is to help you support your units in making informed, strategic decisions**

The blunders are all there on the board, waiting to be made.

Savielly Tartakower

The domain of finance

- **Investment decisions**
  - What assets should we build?
- **Financing decisions**
  - How do we pay for these investments?
- **Management decisions**
  - Strategic decision making for existing and potential future programs

“All decisions are political.”

Mark Haas

Financial decision criteria

- **Net present value** (**NPV**)

  = additional value created by a project net of cost ($s)

- **Internal rate of return** (**IRR**)

  = the project's expected return (%)

- **Breakeven** = the point at which revenue equals cost, such that there is no net loss or gain

- **Payback** = length of time required to recoup initial cost

  Shortcomings: (1) ignores cash flows after the payback period, (2) ignores the timing & riskiness of cash flows

Financial decision criteria

Percentage of CFOs using a particular technique for evaluating investment projects

Graham & Harvey, "The Theory and Practice of Finance: Evidence from the Field," *Journal of Financial Economics* 2001

Breakeven: the point at which revenue equals cost

…not included in the survey

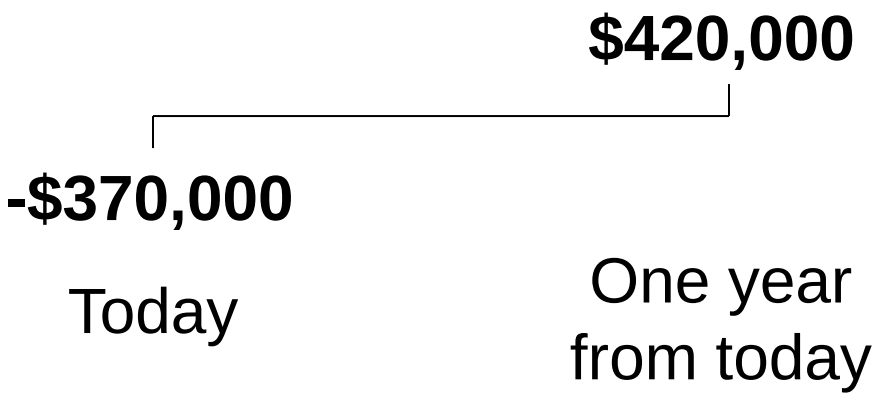
Industry best practice: NPV

An example: Valuing an office building

Step 1: Forecast the cash flows

Cost of building = C_0 = 370,000

Expected sale price in Year 1 = C_1 = 420,000



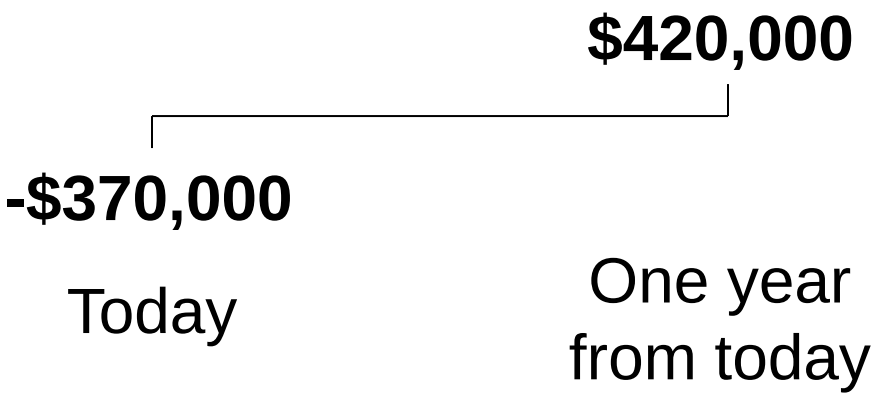
Industry best practice: NPV

Step 2: Estimate the opportunity cost of capital

If equally risky investments in the capital markets offer a return of 5%, then

Cost of capital (r) = 5%

The cost of capital also is called the hurdle rate

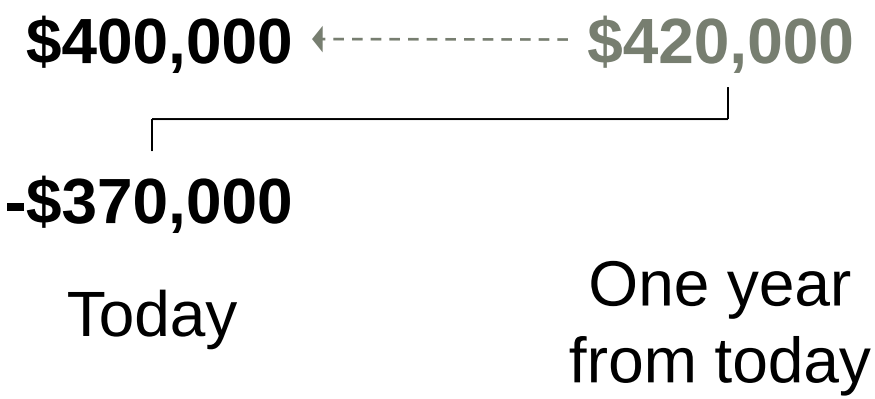


Industry best practice: NPV

Step 3: Discount expected future cash flows

The building is worth $400,000 today when valued at the 5% cost of capital

$$PV = C_1 / (1+r) = \$420,000 / (1.05) = \$400,000$$



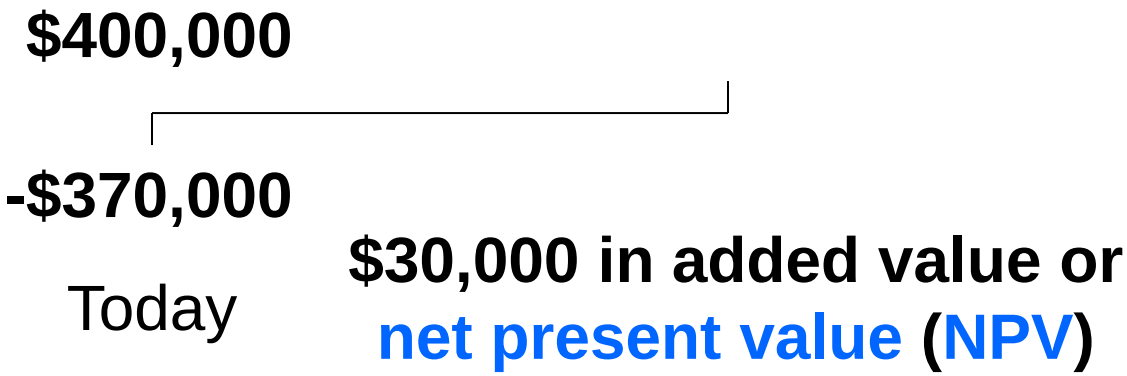
Industry best practice: NPV

Step 4: Find the project's net present value

It costs $370,000 to buy a building that has a value of $400,000, so the net value of this investment is

NPV = $400,000 - $370,000 = $30,000

The building is worth $30,000 more than it costs



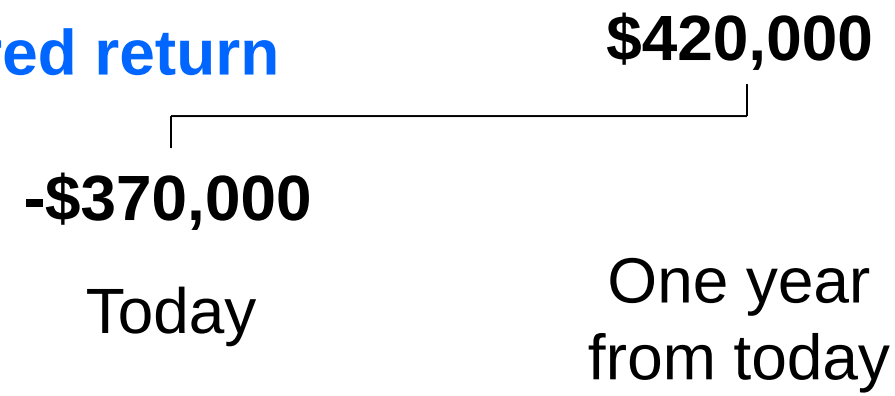
Industry best practice: IRR

Alternatively

Expected return = $420,000 / $370,000 ≈ 13.5%

This is a good project because the 13.5% expected return (or IRR, or internal rate of return) exceeds the 5% required return (or cost of capital)

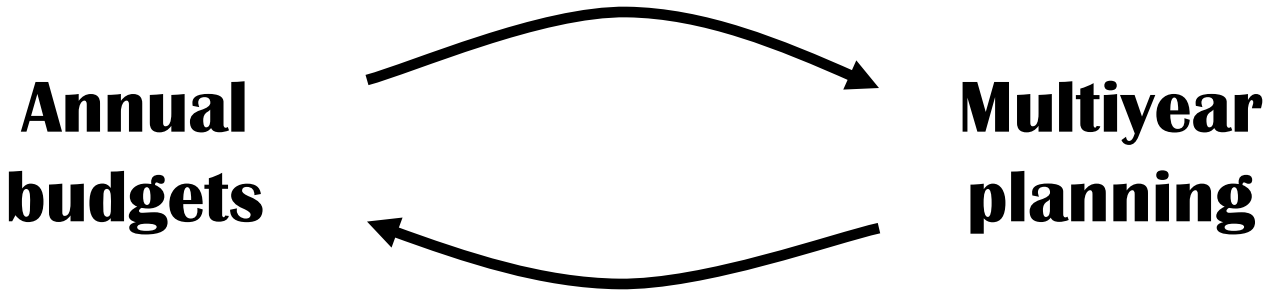
The 13.5% expected return is greater than the 5% required return



Financial decision criteria

Although these decision criteria seem complex, the basic idea is to **estimate what might change** if we accept a proposed course of action

In financial terms, we want to **estimate changes in expected future cash flows** arising from a decision



Time for an assist

A Critical Review of Annual Budgets

What is a critical view?

Asking questions about rationale and legitimacy

- Why is our budget structured this way?
- What decisions are impacting our budget?
- How is our budget impacting our decisions?
- What do faculty/staff understand about their budgets?

- **What would our budget look like if we started from scratch?**

When was the last time you spent more than an hour having a critical conversation about your budget? What did you talk about?

What is one of the *most significant* changes in your organization in the past several years?

- How did the budget impact this change? And how did this change impact the budget?
- Who was involved in discussions about the impact this change had on the budget and vice versa?
- Were there any *surprises?*

When I think about my budget from a critical perspective, I often focus on

Transparency

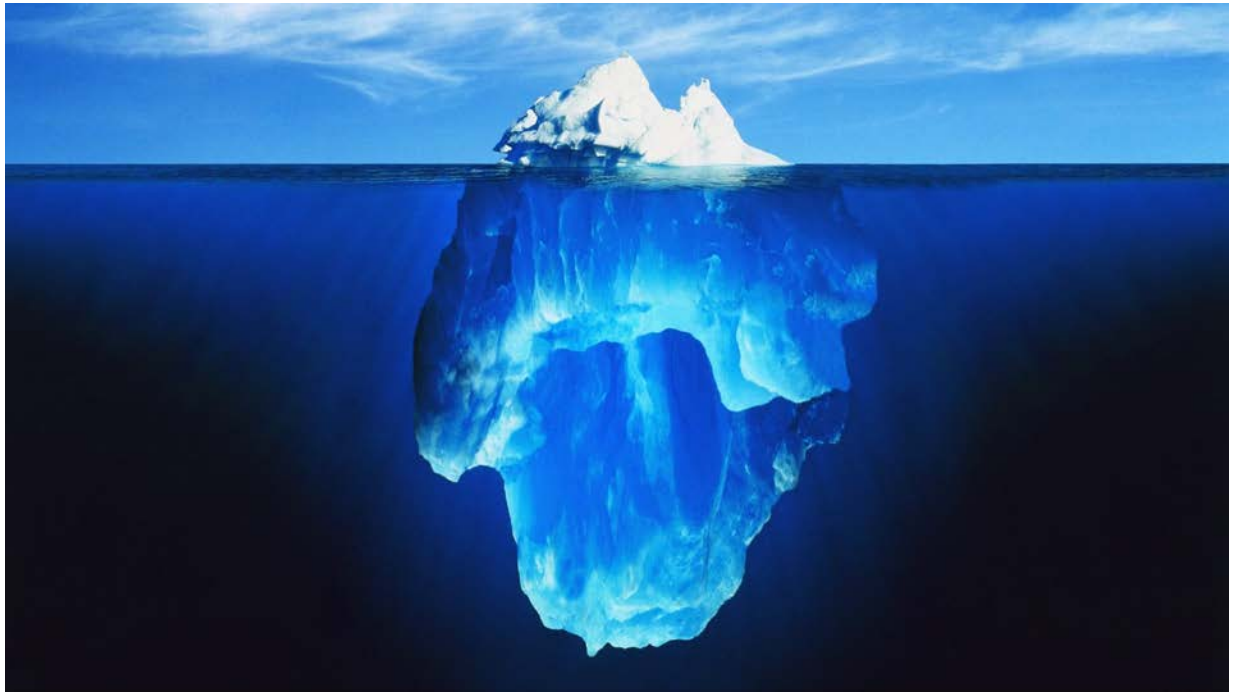
Accountability

Transparency

Begins with a deep understanding of the budget.

And a willingness to help others understand it.

And preparing for the consequences!



Sometimes our desire for simplicity hides important details.

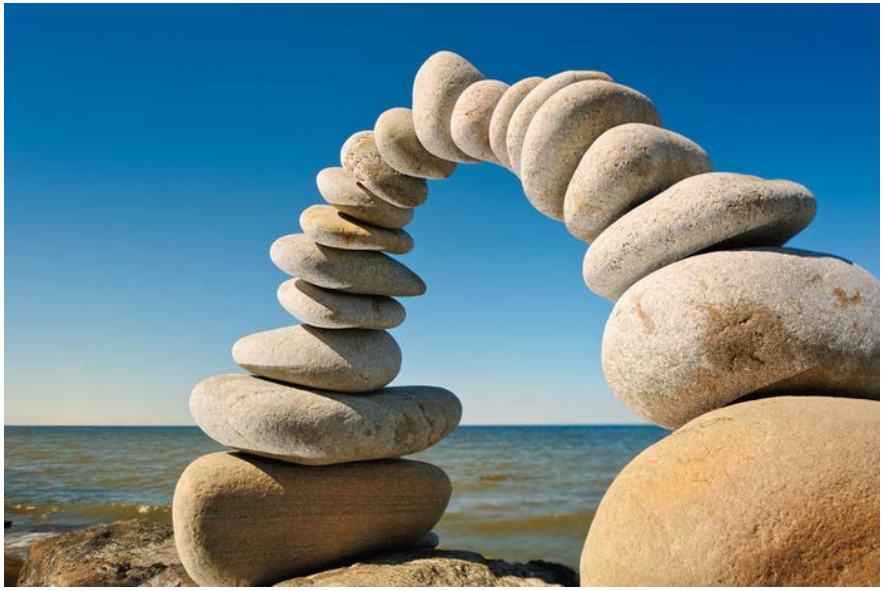
Sub Account	Sub Account Name	Project Code	Project Code Name	Total
SAMPLE	Student Recruitment & Retention Program	Project1	Summer Camp	**152,114**
		Project2	HS Tutors	**170,886**
		Project3	1st Year Scholars	**136,355**
		Project4	Sibs Weekend	**45,300**
		Project5	Fall Family Orientation	**11,450**
		Project6	Evaluation & Assessment	**15,000**
		Project-SAL	Faculty A	**156,262**
			Specialist B	**73,000**
			AP-C	**49,380**
			CT-D	**36,751**
Totals				**846,498**

Greater transparency can lead to different understandings and decisions.

Project Code Name	Total	GF Budget	GF-Non Recurring	Carryforward	Other	Notes
Summer Camp	**152,114**	50,114	86,000		16,000	16K from Project Foundation
HS Tutors	**170,886**	148,386	22,500			
1st Year Scholars	**136,355**	36,355			100,000	60K from Endowment 40K from RN123456 or other
Sibs Weekend	**45,300**	20,300			25,000	25K for scholarships in FY16 from RN123456
Fall Family Orientation	**11,450**	11,450				
Evaluation & Assessment	**15,000**	15,000				Office Operations
Faculty A	**156,262**	140,636			15,626	10% on Grant
Specialist B	**73,000**	20,000		53,000		
AP-C	**49,380**	39,504			9,876	20% on Grant
CT-D	**36,751**	**36,751**				CT and FTE yet TBD
	846,498	**518,496**	**108,500**	**53,000**	**166,502**	

Accountability

What does accountability mean to you when we discuss it in relationship to budgets?



Accountability

Spending within limits.

Considering multiple stakeholders

- Students
- Parents
- Taxpayers
- Community/Social Good

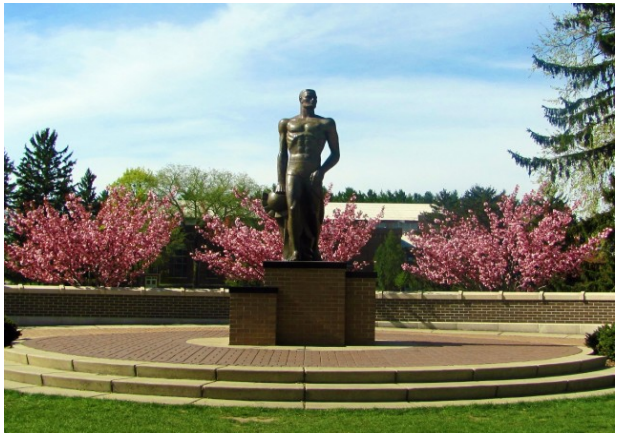
Accountability

Aligning budgets with outcomes or benchmarks

Every budget decision has an opportunity cost

Ex. Student Recruitment & Retention Program

Our budget has an annual cycle…



But we can plan for multiple years…

This past FY, how did you respond to the Provost's 1% PERF reduction? And who was involved in this decision?

What kind of decisions would you use if you thought about PERF over a 3-year period? And who would you involve in this decision?

- We can think and plan over multiple years
- This begins by being critical of our annual budgets and extending our time horizons
- And we have tools to help us do this...

Time for a Break!

- **Financial planning** provides a framework for evaluating the opportunities, costs & risks of our financial decisions

Annual budgets

Multiyear planning

Financial planning

Only **incremental cash flows** are relevant

Incremental cash flow = (Alternative – Base)

Include anything – and everything – that changes

- First identify a **base case** as a starting point

  This usually is the ‘do nothing’ alternative;
  for example, no changes to existing programs

- Then, consider **alternatives relative to the base case**

  The incremental cash flows associated with the alternatives are estimated relative to the base case

Financial planning

Only **incremental cash flows** are relevant

Incremental cash flow = (Alternative – Base)

- **Include all side effects**

  Introducing a new online global EMBA program would cannibalize our existing EMBA (WMBA) program

- **Include any horizon value** – This can be important if a project is your entry into a growth market

- **Exclude sunk costs** (they are not incremental) in making decisions about future resource allocations

- **Include overhead expenses** (only) if they truly are incremental to the project

To get anywhere, or even to live a long time,
a man has to guess, and guess right,
over and over again,
without enough data for a logical answer.

Robert Heinlein, Time Enough for Love

Grad programs in the College of Business

MS programs

- Business Analytics
- Accounting
- Finance
- Management, Strategy, and Leadership — online delivery
- Marketing — online delivery
- Supply Chain Management — blended delivery
- *The* School of Hospitality Business

MBA programs

- Full-time Broad MBA
- Part-time Executive MBA
- Global Executive MBA — ???

A possible Global EMBA program

Mission

To leverage College assets in a way that delivers world-class management education to a cohort of executives operating in the global economy

Themes

A Global Orientation | Applied Learning | Teamwork | Leadership

Delivery

- Blended delivery model (online plus face-to-face)
- The program begins with a boot camp in East Lansing
- Two 1-week international residencies (e.g., China, Brazil, Turkey)
- Online coursework between the residencies
- The program would conclude with a case competition in East Lansing judged by corporate partners

The competition

Business Week: EMBA (Dec 2012)

EMBA rankings	Tuition
#1 University of Chicago	$150,000
#6 University of Michigan	$131,000
#14 Ohio State University	$78,500
#17 University of Maryland	$98,500
#35 Michigan State University	$53,675
Other peer schools	
University of Pittsburgh	$65,000
University of Illinois	$94,000
Pennsylvania State University	$93,000
Purdue University	$78,000

The competition

Financial Times: Global EMBA (Dec 2012)

Global EMBA rankings	Salary
#1 Kellogg / HKUST	$465,774
#2 Columbia / LBS	$265,596
#32 University of Michigan	$216,099
#45 University of Maryland	$176,914
#70 Ohio State University	$177,478
Other peer schools	
#49 University of Pittsburgh	$168,087
nr University of Illinois	$139,507
- Pennsylvania State University	-
- Purdue University	-

Program delivery

Variable costs

East Lansing boot camp	Food & lodging
International residency #1	Food & lodging
International residency #2	Food & lodging
East Lansing case competition	Food & lodging
Reception for admitted students	Food
Books & course materials	Program costs
Other	

The residencies would include some variable costs (lodging and food) and some fixed costs (conference rooms, breakout rooms, local transportation, etc.)

Program delivery

Fixed costs

Marketing — Large start-up, then lower steady-state
Faculty overload — Our biggest annual expense
Course development
Classrooms during the residencies
Transportation during the residencies
Home office staff and tech support
Other general & administrative expense
- Student orientation
- Graduation ceremony
- Application tracking service
- Career management services
- Professional conferences

Financial planning

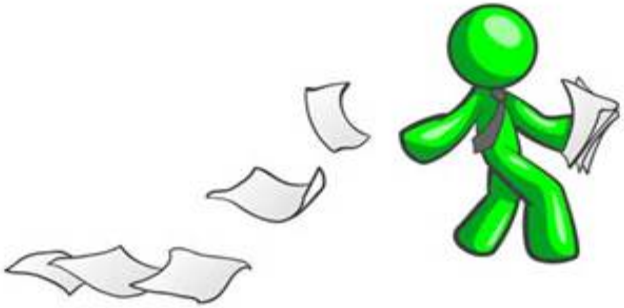
Spreadsheet modeling

- Models are useful because they help you to understand the forces that drive a business decision
- If done properly, they allow you to construct best/worst case scenarios or assess the sensitivity of a proposed project to your assumptions and to business conditions

Helpful conventions

- Create an input section of values that drives the analysis and can be changed for further analysis
- Use formulas so that the analysis is flexible
- Include an output section to summarize your results

Let's move to a spreadsheet



A possible Global EMBA program

Revenues	Global EMBA	Global MBA
Tuition rate (breakeven)	$91,048	$55,813
Number of credits	45	45
MSU tuition per credit	$2,023	$1,240
Number of cohorts	1	2
Students per cohort	30	30
MSU revenue	$2,731,450	$3,348,767
College's retention of revenue	75%	75%
College's revenue	$2,048,588	$2,511,575
Total variable costs	$312,788	$625,575
Total fixed costs	$1,735,800	$1,886,000
Operating profit	$0	$0
Operating margin	0%	0%

When I look back on all these worries

I remember the story of the old man who said

on his deathbed that he had had a lot of trouble in his life,

most of which never happened.

Winston Churchill

Sensitivity analysis

How sensitive is operating profit to the tuition rate?

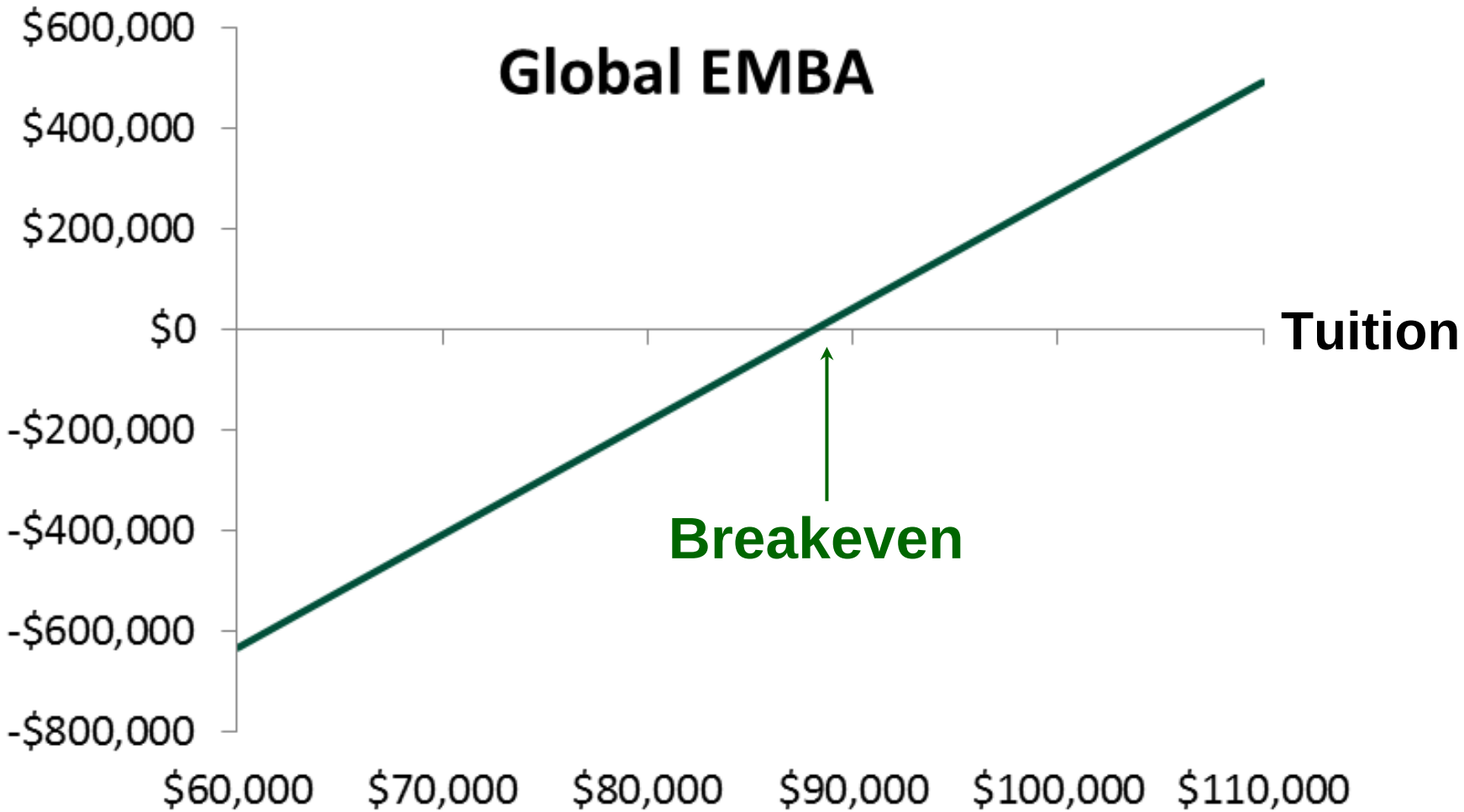
Global EMBA

Tuition	Cash flow
$60,000	-$633,388
$65,000	-$520,888
$70,000	-$408,388
$75,000	-$295,888
$80,000	-$183,388
$85,000	-$70,888
$90,000	$41,613
$95,000	$154,113
$100,000	$266,613
$105,000	$379,113
$110,000	$491,613

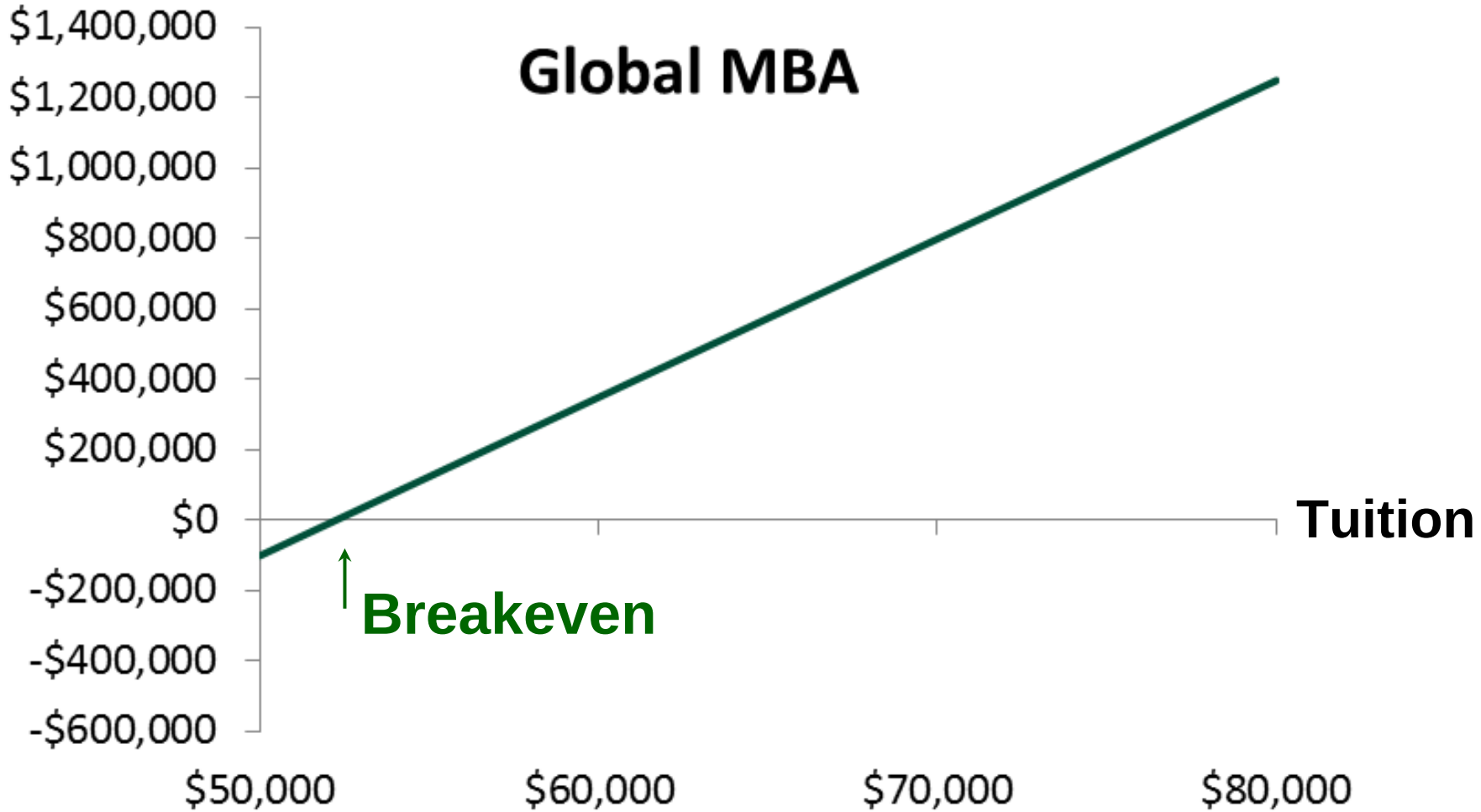
Global MBA

Tuition	Cash flow
$50,000	-$100,575
$55,000	$124,425
$60,000	$349,425
$65,000	$574,425
$70,000	$799,425
$75,000	$1,024,425
$80,000	$1,249,425

Profit (loss)


Global EMBA
$600,000
$400,000
$200,000
$0
-$200,000
-$400,000
-$600,000
-$800,000
$60,000
$70,000
$80,000
$90,000
$100,000
$110,000
Tuition
Breakeven

Profit (loss)


Global MBA
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$0
-$200,000
-$400,000
-$600,000
$50,000
$60,000
$70,000
$80,000
Tuition
Breakeven

A possible Global EMBA program

Possible cannibalization of our existing EMBA

Some candidates might switch their application from our existing EMBA to our Global EMBA program, resulting in a loss of revenue to the EMBA program.

Would we then fill the lost EMBA seat with the next-most qualified candidate?

Some loss of quality or quantity in our existing EMBA program is probably inevitable.

Like the proposed Global EMBA program, there are very few variable costs in our existing EMBA program.

A possible Global EMBA program

Possible cannibalization of our existing EMBA

Assumptions

Estimated opportunity cost per student $50,000
(There are very few variable costs in the EMBA program)

Estimated number of students lost 5 students/cohort

Total losses in operating profit from cannibalization

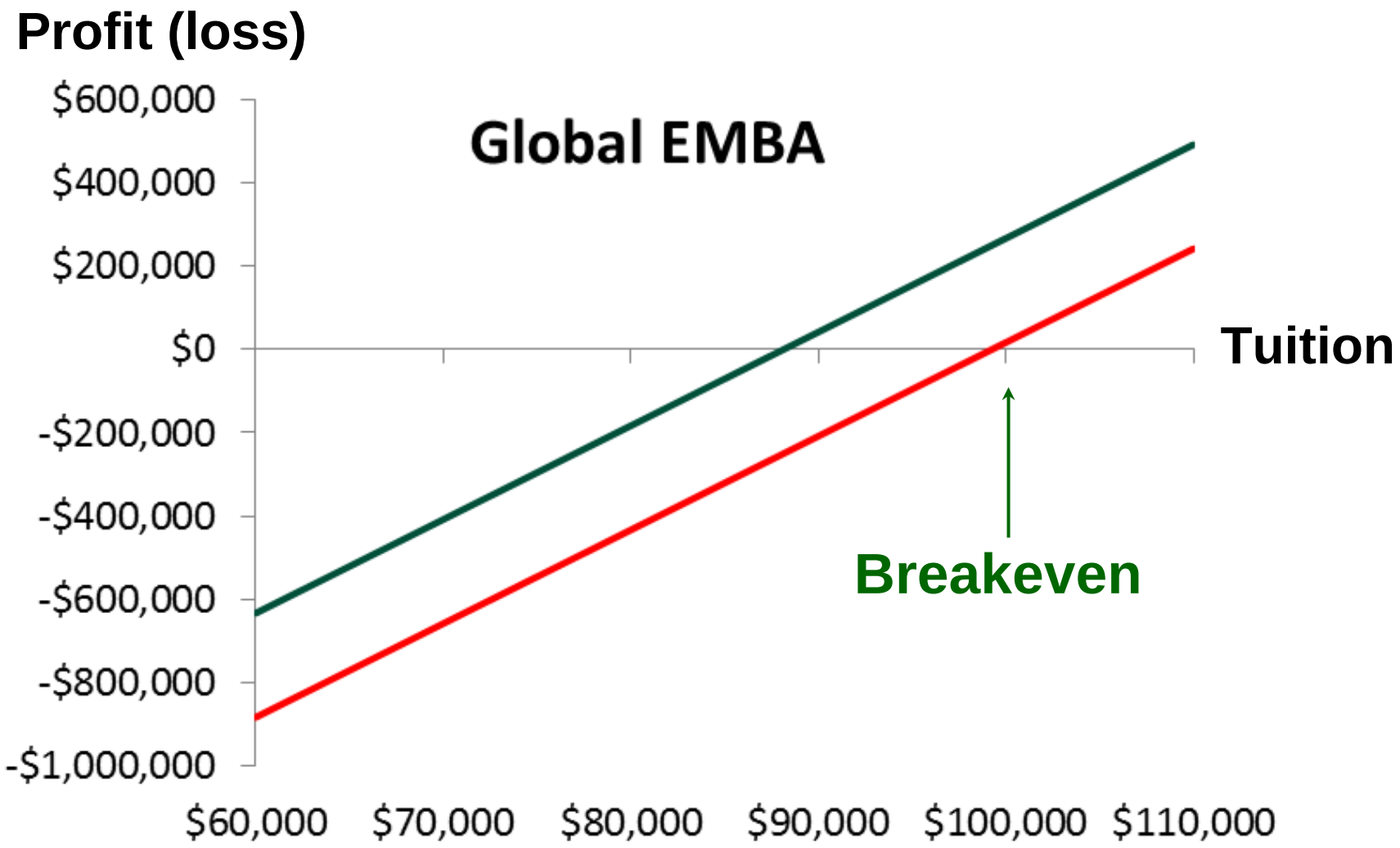
Global EMBA program (1 cohort)	-$250,000
Global MBA program (2 cohorts)	-$500,000

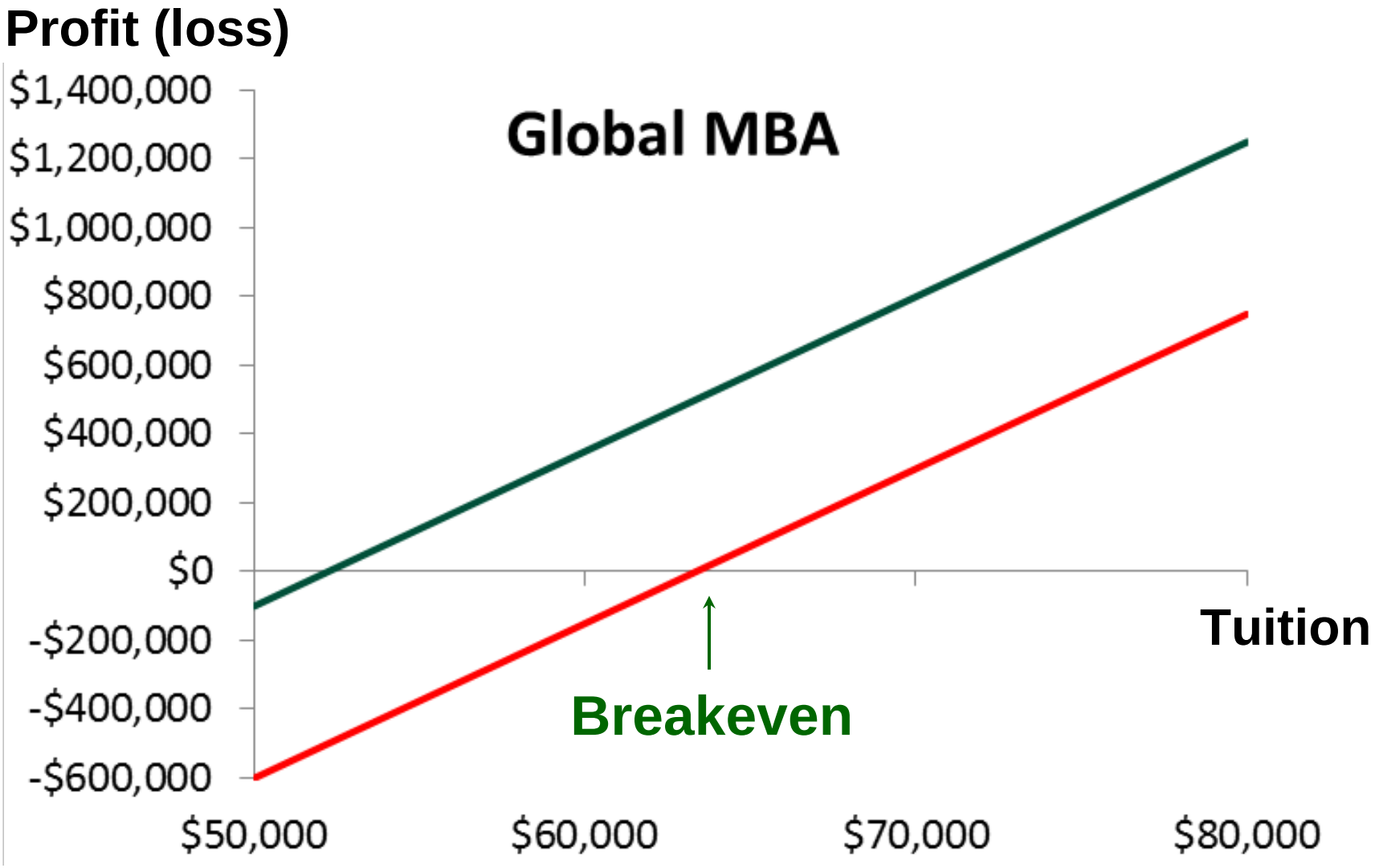
Sensitivity analysis

How sensitive is the program to the tuition rate?

Global EMBA		Cannibalized
Tuition	Cash flow	Cash flow
$60,000	-$633,388	-$883,388
$65,000	-$520,888	-$770,888
$70,000	-$408,388	-$658,388
$75,000	-$295,888	-$545,888
$80,000	-$183,388	-$433,388
$85,000	-$70,888	-$320,888
$90,000	$41,613	-$208,388
$95,000	$154,113	-$95,887
$100,000	$266,613	$16,613
$105,000	$379,113	$129,113
$110,000	$491,613	$241,613

Global MBA		Cannibalized
Tuition	Cash flow	Cash flow
$50,000	-$100,575	-$600,575
$55,000	$124,425	-$375,575
$60,000	$349,425	-$150,575
$65,000	$574,425	$74,425
$70,000	$799,425	$299,425
$75,000	$1,024,425	$524,425
$80,000	$1,249,425	$749,425


Profit (loss)
$600,000
$400,000
$200,000
$0
-$200,000
-$400,000
-$600,000
-$800,000
-$1,000,000
Global EMBA
Tuition
Breakeven
$60,000
$70,000
$80,000
$90,000
$100,000
$110,000

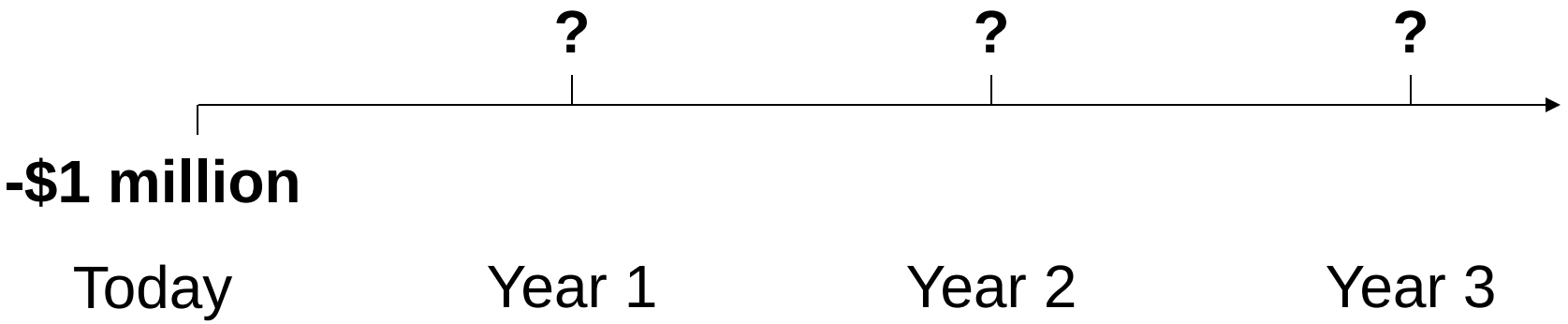

Profit (loss)
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$0
-$200,000
-$400,000
-$600,000
Global MBA
Tuition
Breakeven
$50,000
$60,000
$70,000
$80,000

Industry best practice: NPV

An example: Valuing an online graduate program

Initial cost of the program = $1 million?

Expected annual return?



A possible Global EMBA program

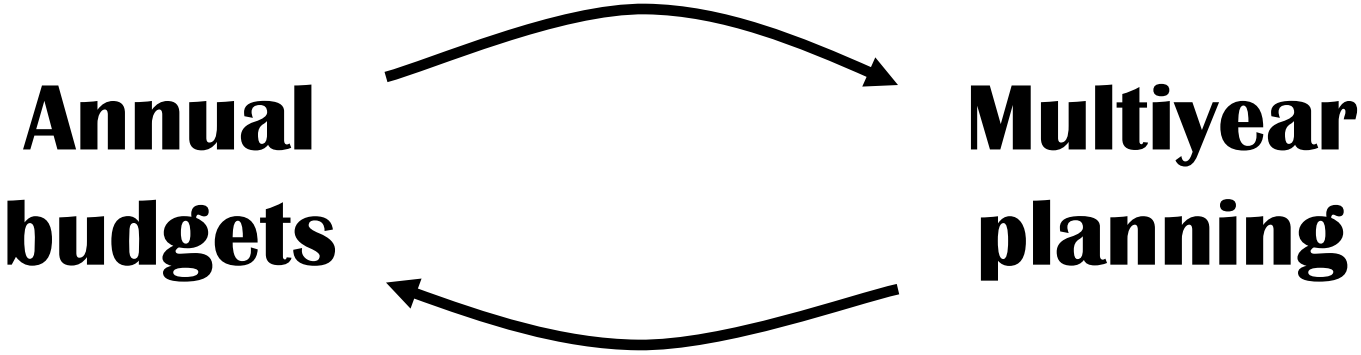
Other considerations

- Is the proposed program structure optimal?
- How do we finance this investment?
- Do we really want to play in this space?
- Do we have better uses for our time? Money? **Faculty resources?!**
- Can we leverage what we have learned in this endeavor elsewhere in our other programs?

Financial planning

This example will differ from your initiatives but it illustrates the approach of trying to estimate **WHAT WILL CHANGE?**

- Building financial models will help you make **more informed decisions**
- Models also will help you to understand the **value drivers** of your proposed investment
- Models can help you perform **what-if analyses** to help you structure your initiatives in the best possible way


Annual budgets
Multiyear planning

Discussion…