

# Lecture 1

This is going to Cost  
You or  
TANSTAAFL.

1

## Lecture Outline

- ⌘ In making good decisions, it is generally important to understand the benefits and costs of the consequences.
- ⌘ Generally, the benefits are clear, the costs less so.
- ⌘ The goal of this lecture is to highlight some important notions of costs that help to inform optimal decision-making

2

## Costs or Benefits?

- ⌘ Actually, it is not always clear what is the difference between a cost and a benefit.
- ⌘ For example, one possible benefit of going to grad school is avoiding (the cost of) having to pay off student loans immediately.
- ⌘ A “cost” of going to grad school is losing the benefits of a working salary.

3

## Costs vs. Benefits

- ⌘ Calling the positive consequences of a decision benefits then is often just a convention.
- ⌘ The various notions of costs we examine also, therefore, have obvious parallels in terms of benefits as well.

4

## Outline: The Various Concepts of Costs.

### ⌘ *Opportunity Cost:*

☒ There ain't no such thing as a free lunch.  
(TANSTAAFL)

### ⌘ *Fixed Cost and Variable Cost*

### ⌘ *Marginal Cost*

### ⌘ *Sunk costs*

### ⌘ *The Sunk Cost Fallacy*

5

## Opportunity Cost

⌘ Economists and other decision theorists have developed the idea of opportunity cost because, at times, people tend to overlook important sources of costs.

⌘ The correct measure of the cost of a decision, is what must be given up as the next best alternative to the decision.

6

## Opportunity Cost: Example

- ⌘ You have all made the decision to go to university.
- ⌘ What are some examples of the cost you bore to go to UMD?

7

## Explicit versus Implicit Costs

- ⌘ One reason that the notion of opportunity cost has been developed is because of the tendency to focus primarily on explicit versus implicit costs
- ⌘ When you have to pay someone for something, the cost is fairly obvious. However, even when something does not have a price, that does not mean it is free.
- ⌘ TANSTAAFL

8

## Example

- ⌘ Suppose two cities are considering building a hospital.
  - ☒ the hospital site requires 10 acres of land plus \$100 million to construct
- ⌘ One city has ten acres acquired for nonpayment of taxes.
- ⌘ The other city has to purchase the land.
- ⌘ For which city is the hospital going to be cheaper to build?

9

## Example

- ⌘ Recently, Baltic herring were discovered to contain dioxin, a toxic chemical
- ⌘ The Finnish government decided, nevertheless, not to ban capture and sale of the fish. Was this a callous decision?

10

## TANSTAAFL

- ⌘ Is there really no such thing as a free lunch?
- ⌘ What about Free Trade? Isn't that an example of something for nothing?

11

## Fixed Costs and Variable Costs

- ⌘ In a standard economics course, we often break down the costs of a firm into two parts: fixed and variable.
- ⌘ Consider a decision scenario that includes deciding *how much* of an action to take.
  - ☒ For example, when you go to university you might decide how many courses to take.
  - ☒ When you go to a nightclub you might decide how much to drink.

12

## Fixed Costs and Variable Costs

- ⌘ Fixed costs refer to costs that do not change with the *amount* you decide on.
- ⌘ Variable costs *vary* with this amount.
  - ☒ When you go to university, you will have to pay room and board no matter how many courses you take -- therefore, FC.
  - ☒ The more courses you sign up for, the higher your tuition, therefore, VC.
  - ☒ The cover charge at a club is independent of the number of drinks -- therefore, FC. Unless..
  - ☒ The amount you spend rises with the number of drinks. Therefore, VC.

13

## Fixed versus Variable Costs

- ⌘ Both concepts are important.
- ⌘ In a sense, FC, factor in at crude, big picture decision problems (should you go to a club? Should you go to University?)
- ⌘ VC factor in at the incremental decision problems, (should you have another drink?)
- ⌘ However, since ultimately, you will incur VCs as well, they also must be factored in for the BIG Picture decisions as well.

14

## Marginal Costs: A Mathematical Interlude

- ⌘ For mathematical minds:
- ⌘ Suppose that amount of the decision is  $Q$ . The cost of choosing  $Q$  is  $c(Q)$ .
- ⌘ The Marginal cost is the cost of one extra unit of  $Q$ .
- ⌘ Mathematically, it is the derivative of  $c(Q)$  (or formally,  $MC(Q) = d c(Q)/dQ$ .
  - ☒ Example: A drink costs \$6.  $Q$  drinks cost  $c(Q) = 6Q$ .
  - ☒ the marginal cost of another drink is  $dc/dQ = 6$ .

15

## Fixed Costs: Avoidable or Not?

- ⌘ Certain fixed costs are avoidable. Others cannot be avoided no matter what decision you take.
- ⌘ For decisions, generally it makes sense that only the avoidable fixed costs should be factored in.
- ⌘ After all, if you incur a cost no matter what you decide, why should it matter?

16



## Fixed Costs: Avoidable or Not?

- ⌘ For Toyota, increasing production of Prius by 100,000 a year could well involve building a new factory including the facility cost of, say, \$100M.
- ⌘ If T builds the plant, it will pay \$100M whether it produces 100K cars or 150K cars, so the \$100M is a FC.
- ⌘ However, it could decide NOT to build the plant. So the \$100M is at an early phase, at least, an avoidable FC.

17

## Fixed Costs: Avoidable or Not?

- ⌘ Part of your cost of living at university is the cost of your clothes.
- ⌘ However, whether or not you go to university, you still need to buy clothes (unless the alternative is a nudist colony)
- ⌘ Therefore, even though clothing costs are significant, they are not avoidable.

18

## Sunk Costs

- ⌘ Sunk costs are unavoidable fixed costs.
- ⌘ That is, no matter what you decide, you will incur the costs anyway.

19

## Sunk Costs: Should they matter?

- ⌘ The standard answer is that, for any costs that are SUNK, since you will have to pay them no matter what you decide, they should not factor in your decision.
- ⌘ "Bygones are bygones."
- ⌘ <http://www.visionarytools.com/decision-making/sunk-cost-dilemma.htm>

20

## Examples

- ⌘ Suppose you have just bought 2 tickets to a concert, \$100 each.
- ⌘ It is your favorite band. But, the afternoon before the concert, you come down with the worst case of swine flu ever.
- ⌘ There is no way you could enjoy the music.
- ⌘ BUT, you just spent \$200 on tickets...
- ⌘ Should you go?

21

## Examples

- ⌘ You are carefully watching your weight.
- ⌘ You have gone with your parents to an expensive restaurant and, inadvertently, find that the 28oz steak was a bit more than you expected.
- ⌘ Your father says, "that steak cost \$53, you better eat it!"
- ⌘ How should you respond?

22

## Why do people still use them in their decisions?

- ⌘ Are they really sunk?
- ⌘ Probability bias
- ⌘ Loss aversion.
- ⌘ Cognitive dissonance.

23