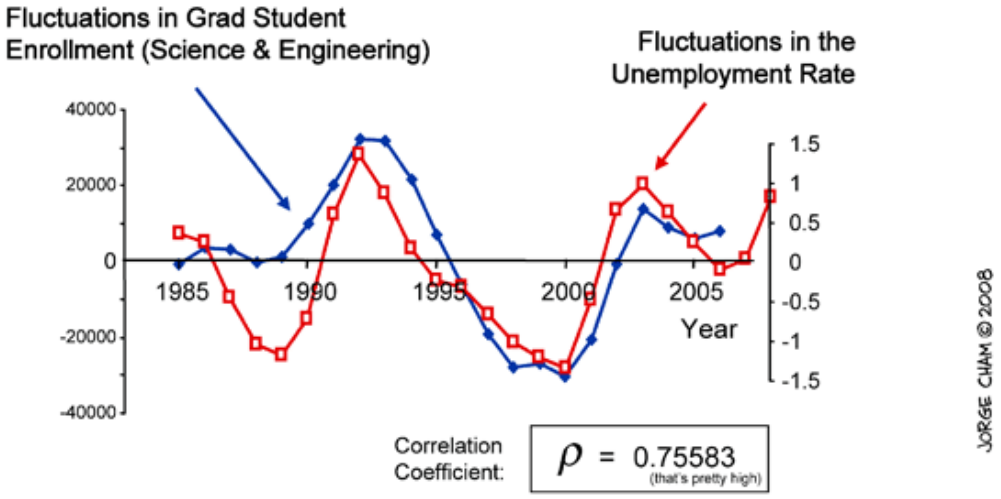
David Youngberg
ECON 201—Montgomery College

TOPIC 02: OPPORTUNITY COST AND MARGINAL ANALYSIS

I. **Fundamental Idea Two: There are always opportunity costs.**
   a. Because we deal with scarce resources, we have to make choices. Whenever we choose one thing, we give up something else we did not choose.
   b. *Opportunity cost*—the gain of the next best option.
      i. Keep in mind that an opportunity cost is a *forgone benefit*. The opportunity cost of doing something is a good thing you *did not* get to do.
      ii. When the opportunity cost is high, that means you are sacrificing a lot; when it is low, you are sacrificing little.
      iii. Consider this diagram about the relationship between unemployment and graduated school enrollment. There's an opportunity cost story here explaining the strong correlation; what is it?



   c. When someone has a high opportunity cost to do something, they have to be compensated to make it worth it. Thus it's hard to hire engineering and nursing professors because they can make a lot of money doing the job they're trained for. It's easy to hire art professors—the average pay of a professional artist is pretty low.
   d. It's worth mentioning the *lump of labor fallacy*, or the tendency to think that there's a fixed amount of work.
      i. People are sometimes concerned that robots or trade or immigration will result in fewer jobs everyone. But that is a

fallacy—there's nothing to suggest that fewer jobs in one sector results in fewer jobs for the whole economy.

ii. Labor is a scarce resource and that means there are always opportunity costs. People doing work in one sector aren't doing work in something else. Moreover, efficiency gains from robots/trade/immigration means some jobs are possible that weren't before. For the vast majority of human history, virtually everyone was a farmer; our ancestors would be astounded at the jobs people have now.

iii. This doesn't mean macroeconomic disruption is never painful. Retraining and relocating are difficult and for some it is impossible. Even when society as a whole benefits, we should never assume that progress never has victims and that leads us to…

II. **Fundamental Idea Three: "There are no solutions. There are only trade-offs."**

a. This quote attributed to economist Thomas Sowell points to the fact that economists don't think in terms of X will solve everything, or Y is always the right answer. There are always trade-offs. We can think of this fundamental idea deriving from the previous two.

i. Incentives: If something was universally better than everything else, it would've already been adopted.

ii. Opportunity cost: Getting a good thing always comes at the expense of other good things.

iii. Another favorite quote of mine, this one by economist Frank Knight: "To call a situation hopeless is equivalent to calling it ideal." Quotes like these are why economists are often not invited to the cool parties.

b. The *Nirvana fallacy*, or the tendency to compare an actual thing to an idealized fiction, comes up a lot here.

i. People will complain about some aspect of the status quo without seriously considering the alternatives. They see something they don't like and pretend their ideal option is possible. As the saying goes, "the perfect is the enemy of the good."

ii. Example: During the 1970s, environmental groups protested nuclear power plants in favor of solar, wind, or just lowering energy consumption. These were unrealistic alternatives so when environmentalists successfully blocked nuclear power, coal and natural gas power plants expanded instead. Whoops.

c. That there are always trade-offs doesn't mean that there aren't bad options or good options. As cost-benefit analysis reminds us, sometimes what we gain is far better than what we lose. Opportunity costs can be high or low.

III. Thinking on the Margin

a. The *Marginal Revolution* refers to a change in economic thinking in the late 19th century by economists William Stanley Jevons, Léon Walras, and Carl Menger (all working independently, they came to the same conclusion).
   i. People put value on something based on marginal analysis. In other words, value doesn't derive by how good something is, but by how good a little bit more is. Water is necessary for life, but water is cheap because the marginal value of water is low.
   ii. *Margin*—the change in total
   iii. *Marginal analysis*—decisions are made on the margin; a little bit more or a little bit less.

b. Diminishing Marginal Utility
   i. *Utility*—economic lingo for satisfaction or benefit
   ii. Each additional unit—each marginal change—generates less and less utility (we call this diminishing marginal utility).
   iii. The first ice cream I eat is great, the second isn't as good as the first, the third is even less, the fourth starts tasting disgusting

c. Oranges example
   i. Suppose I hand you 12 oranges. What do you use them for and in what order?

ORANGE	UTILITY	ORANGE	UTILITY	ORANGE	UTILITY
1st	$20	*5th*	$16	*9th*	$12
2nd	$19	*6th*	$15	*10th*	$11
3rd	$18	*7th*	$14	*11th*	$10
4th	$17	*8th*	$13	*12th*	$9

   ii. Note that each item down the list would be worth less and less to you.

d. Marginal utility
   i. The value of one more gallon of water is very low but the value of one more diamond is quite high
   ii. Use the most valuable ends first, then go down the list

e. Marginal cost
   i. Marginal cost follows the same pattern as marginal utility, it just goes in the opposite direction

1. Marginal cost *increases* (instead of *decreases*)
2. Start with the *lowest cost* (instead of the *highest value*)

f. Oranges example, cont.
   i. Now suppose that I'm picking the oranges I'm handing you form a large tree. This time, I start with the lowest cost first.

ORANGE	COST	ORANGE	COST	ORANGE	COST
1st	$8	*5th*	$12	*9th*	$16
2nd	$9	*6th*	$13	*10th*	$17
3rd	$10	*7th*	$14	*11th*	$18
4th	$11	*8th*	$15	*12th*	$19

IV. Synthesis

a. Suppose instead of giving or handing you the oranges, I sell you them.
   i. For the first orange, it costs me $8 to get the orange and you are willing to pay $20. Thus there are many opportunities for us to agree on price
   ii. For the next orange, it costs me $9 and you value it at $19. Again, there are many opportunities to agree on a price (though there are slightly fewer).
   iii. This continues until the 7th orange, where the only price we can agree on is $14.
   iv. Note if we try to exchange an 8th orange, we wouldn't agree on a price.

ORANGE	UTILITY	COST	ORANGE	UTILITY	COST
1st	$20	$8	***7th***	***$14***	***$14***
2nd	$19	$9	*8th*	$13	$15
3rd	$18	$10	*9th*	$12	$16
4th	$17	$11	*10th*	$11	$17
5th	$16	$12	*11th*	$10	$18
6th	$15	$13	*12th*	$9	$19

b. The key idea behind marginal decision making is that people will engage in an action until marginal benefit equals marginal cost
c. Again, the miracle of prices appears. If the price rises, then you will forgo your *least* valuable action. If it falls, then the costliest item doesn't get produced. These socially desirable results emerge without a central planner. Prices solve problems.