

A few more concepts: marginal analysis, specialization, equilibrium, and how economists judge economics systems

The ten second explanations

Don't be surprised if all is not grasped in 10 seconds.

Edward R. Morey: Draft Sept 6, 2011

Marginal analysis

Individuals often make choices on the margin

I am driving down the road with my Happy Meal balanced on my lap. Should I eat another French fry, or stop before I gross myself out? Note that the “Happy Meal” comes with 31 fries.

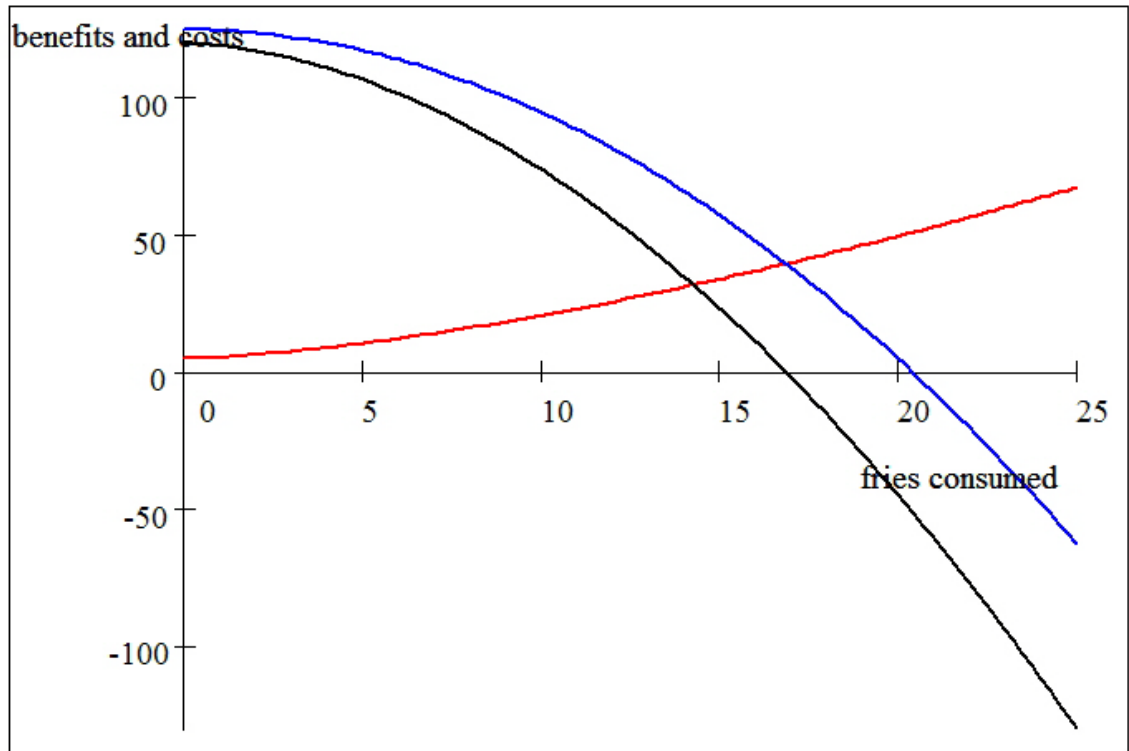
I consider the marginal benefits and the marginal costs. If the marginal benefits are greater than the marginal costs, I bite into another fry.

In this example, the marginal benefit is the benefit/pleasure I get from eating one more, and the marginal cost is the cost of eating one more

If the marginal cost is greater than the marginal benefit, I stop and give the rest to Sofie, my dog, who, in the limited quantities she get fries, always finds the marginal benefits greater than the marginal costs.

What are the marginal benefits and marginal costs of another fry, and what do they depend on?

To keep things simple assume benefits come in terms of taste and elimination of hunger, and costs are future fat around your hips and waist, grease on your mouth, cloths and car seats. We will assume you do not need the calories.



The marg. benefits (blue) and costs (red) of eating another

Marginal costs are in red, marginal benefits in blue, and net benefits in black (MB-MC).

It is not important in what units we measure benefits and costs, only that we measure everything in the same units.

The fries have already been purchased (remember I was driving down the road with them), so money is not an issue: the opportunity cost has no monetary component (sunk money costs are sunk).¹ The opportunity cost is a thinner and healthier me.

¹ Money might be part of the cost, but not the money spent on the fries. Imagine that if I was not eating fries I could have been making \$5 a minutes consulting on the phone, but can't if my mouth is stuffed with fries. I never gave up consulting in the car for another French fry.

The benefits are a function of how the fries taste (“the mouth feel” of fat, saltiness, crunch). The first fry tastes good, but after 20, or so, according to our graph, the taste is gross.

It looks like Sofie will get around 13.5 fries. (I will eat approx 17.5 fries, leaving $31-17.5=13.5$ for Sofie)

Tastes vary across people. Amazingly, some people don’t like the taste of salty fat. What would your MB graph look like if you hated fries?)

What units should we put on the vertical axis?

Who is more or less likely to finish the bag, and why?

On average, do you think thin women, aged 45, are more, are less likely to finish the bag than 22 year-old overweight males?

Many people finish the bag? What does that imply?

Does it imply they should have bought a second bag? No, but maybe they would benefit from a second bag.

Imagine the following experiment: an individual arrives at McDonalds at 7 am. He or she can stay there forever eating fries with no money cost. What will eventually happen? What does that imply?

Backing up the decision tree, the decision to buy the bag of fries can also be viewed as a marginal decision—one more bag. Will the marginal benefits from the bag be greater or less than the marginal cost, which, before you buy the bag, includes the money cost?

Rationally buying a bag does not mean you want to eat all of the fries in the bag. There are two decisions: the margin: buy a bag (maybe a first bag) and whether to eat another fry from the bag

Should you “supersize” – it is a marginal decision, made at the window.

Firms often make choices on the margin

Should the restaurant, now only open for lunch and dinner, start serving breakfast?

Opening for breakfast will increase the costs, on the margin, of running the restaurant. It will also hopefully increase revenues (someone hopefully will buy breakfast). If the expected marginal revenues from opening earlier are greater than the marginal costs, the profit-maximizing restaurant will try it out.

If the marginal revenues turn out to be greater than the marginal costs they will remain open for breakfast.

What if the owner knew he could increase his monetary profits by opening earlier, but does not do it because he likes to sleep?

He has decided that the opportunity cost of the extra profits, lost sleep, is too high

List five decisions that you make on a regular basis that are made on the margin.

Specialization

we trade because we can specialize

Specialize simply means devoting most of our productive efforts to producing a few things—we do not produce all of the things we need and want.

For example, I am currently devoting much of my efforts to producing and giving micro-principles lectures.

Plumbers, on the other hand, devote much of their efforts to installing and fixing water-distribution systems.

Think about it; you can't eat a toilet or lecture notes. So, why do people specialize in such activities? Am I nuts?

Yes I am, but not because I specialize; nuts and non-nuts all specialize, each producing only a small number of things.

We specialize because in a market economy, with trades, we are made better off by each of us specializing in what we do best, and then trading some of what we have produced for what we need.

Not that I will be soon be quitting my job to sell, online, decorative handmade switch plates:



I will devote my life energy to cutting and pasting cutouts from magazines onto standard white switch plates that I purchased at McGukins Hardware.

Will my children starve?

Will society be better off?



Equilibrium

Let's start with an **example** of equilibrium (and disequilibrium):

Wanda Sue and I, after years of marriage, have decided we hate each other's guts, and are divorcing. To save money we have also "agreed" that neither of us will hire an attorney.

Given that we are divorcing, is neither of us hiring an attorney an equilibrium?

Given that I don't have an attorney, Wanda Sue will win big in the settlement if she gets a lawyer and I won't. Said another way, given my behavior (no lawyer), Wanda Sue wants to change her behavior (hire a lawyer).

But, the same is true for me. If Wanda Sue has no lawyer, I can win big by getting one. So, I want to get a lawyer given that Wanda does not have one.

So, remaining attorney-less, is not equilibrium: **each of us wants to change our behavior given the behavior of the other.**

One with a lawyer, the other without a lawyer, is not an equilibrium. If your soon-to-be ex has a lawyer, you better get one fast.

Is both of us lawyered up an equilibrium? Yes. If your spouse has a lawyer, you do not want to fire your lawyer. No.

So, the equilibrium in this "game" of life is both parties lawyered up. Once we both have a lawyer, no one wants to change their lawyer status.

Why is this an equilibrium? Given the behavior of the other party(ties)—in this case the soon-to-be ex—we each are doing the best we can. We cannot make ourselves better off by changing are behavior.

Said another way, we each are doing the best we can given our constraint, the constraint being our spouse has a lawyer.

Note that lawyered up is an undesirable equilibrium from everyone's perspective except the lawyers.

From the perspective of the two individual, the equilibrium, lawyered up, is inefficient

Note that we have yet to define efficient and inefficient.

A second example: market equilibrium

Consider gas-guzzling SUVs

There are firms producing SUVs so they can sell them for a profit

There are consumers who have a desire to buy SUVs, but whether they buy or not depends on the price.

The market for SUVs will be in equilibrium when everyone involved, or not involved in the market, is doing the best they can given the price of SUVs.

More specifically, in equilibrium everyone who wants to buy an SUV at the going price is successful – there is no unfulfilled demand.

All the SUVs that are produced are sold – there is no excess supply of SUVs

The producers of SUVs are maximizing their profits

Consumers are maximizing their utility

Another way of describing equilibrium in the market for SUVs is the price is such that demand for SUV equals the supply of SUVs. Given the price, no one can do better by changing their SUV buying or selling behavior

Defining equilibrium

I will define equilibrium in terms of an economic system

An economic system is in equilibrium when everyone is doing the best they can given what everyone else is doing.

Consider a society of two individual: you and me. You are dictator and I am your slave, Edward Slave Boy.

The system is in equilibrium if am doing the best I can given my status, and you are doing the best you can given that you have a slave and are in charge of everything I do.

When is an individual in equilibrium? An individual is in equilibrium when she is doing the best they can given her constraints (income, prices, and what other people are doing)

If for example, you are “guilted out,” and will be better off if you set me free, but haven’t yet, the system is not in equilibrium.

If I am planning to kill you because I would rather be dead than your slave, but have not yet (I am getting ready) the system is not in equilibrium.

But if neither of us wants to change things given what the other is doing, we are in equilibrium.

This does not mean I like being your slave.

If a consumer is maximizing their utility (doing the best they can given their constraints) the individual is in equilibrium: given their constraints they have no desire to change anything.

Consider the kidnapped 11-year-old, who was kept in the weirdo's backyard for 18 years, having two kids in the process.

Was this an equilibrium that lasted 18 years? Note that equilibrium can be a bad state of affairs.

Jaycee Dugard Surfaces After Being Abducted 18 Years Ago

By Howard Breuer and Susan Young



Jaycee Lee Dugard in an undated AP photo,

Jaycee Lee Dugard, 29, was reunited with her family Thursday morning – 18 years after a sex offender [abducted](#) her as she walked to her school bus stop in South Lake Tahoe, Calif.

Her abductor enslaved her in a cluster of sheds in a "hidden backyard within a backyard," raped her and had two children with her before he was arrested this week, police revealed at a news conference Thursday afternoon.

Officials say abductors Phillip Garrido, 58, and his wife Nancy Garrido, 54, of Antioch, CA, will be arraigned Friday on charges likely to include kidnapping, conspiracy, rape by force, lewd and lascivious acts with a minor and sexual penetration. Officials say Garrido has already admitted to the abduction.

Was this an equilibrium? Said another way, under what assumptions would it be (not be) an equilibrium?

Could either party have made themselves better off by changing their behavior, given the behavior of the other.

Mr. Garrido would likely not have made himself better off by letting the kid go.

But what about the kid who becomes the parent of two kids during the process.

She and her kids were not always locked up.

It did last a long time. Under the initial conditions it was equilibrium. How did the conditions change. Her two children 11 and 15 considered their mother's abductor their father, and their mother their sister, and had little reason to bolt. What about Jaycee? Was the [Stockholm syndrome](#) at play?

Consider a last example that brings us to the realizations that most equilibrium do not last forever: something happens (an exogenous event) that causes the equilibrium to no longer be an equilibrium.

There are three people in Wiggins CO between the ages of 18 and 55: Avery, Dakota and Skyler—their parents were into gender-neutral names. Each was born in Wiggins and due the “Wiggin’s curse can never leave.”

This is the Wiggin’s date set and the Wiggin’s marriage set.

They all “like” each other, and each would be happy to marry one of the other two.

Currently they all want to get married, so the current state is not an equilibrium.

Avery and Skyler run into one another one night at the 7-11, both are drunk. They express their undying love for one another, drive to Denver and get married.

Assume the new state of affairs is an equilibrium: Dakota is unmarried but that is the best for him or her given that there is no one to marry.

Avery and Skyler each prefer marriage over singleness, but, now that they are sober, do not care which of the other two they are married too. That given, it is a hassle to change spouses stay married to each other.

The equilibrium persists for ten years. Then an exogenous event occurs; Jordan moves to town and Jordan is hot.

Avery, Skyler and Dakota all take their chances with Jordan, and the equilibrium dissolves.

Maybe the new equilibrium is Avery with Jordan and Dakota with Skyler.

How economists judge economic systems (efficiency and equity)

We will come back to efficiency and equity in great detail, but for now only the basic

Efficiency

Production-and-distribution is **inefficient** if it is currently possible to change things in a way that makes some members of society better off without making any members worse off.

In other words, things are currently inefficient if it is **possible** to change things so that after the change some people are better off and no one is worse off.

(A change that makes some members better off and no members worse off is “efficiency increasing”)

If a change is efficiency increasing, before the change occurs, things are inefficient.

Production-and-distribution is efficient if the only way to make some members of society better off **requires** that others are made worse off.

An inefficient state of the world is a state of the world where there is the potential for a free lunch (making some better off at no cost to any other member of society).

Production and distribution are efficient when all the potential for free lunches have been exhausted.

Everything else constant, economists prefer more efficient to less efficient.²

² Often, everything else is not constant.

Equity

Equity is a synonym for fair.

Everything else constant, economists would like production and distribution to be fair.

How is fairness determined? Good question.

Sustainability

While many people would argue that a society would like its production and distribution decisions to be sustainable, this is a goal many economists would argue should not be a primary goal.

An example of why “sustainable” might not be desirable.

Consider you and your significant other trapped in a spacecraft trapped in orbit, forever.

You have enough resources for every generation to reproduce while living in misery. (You have two kids, everyone is miserable. You and your significant other die of old age, you kids have to kids. Your kids die of old age.....)

Or, you can have a good time for 20 years remaining childless, at which point you run out of stuff, die, and life on the spacecraft goes extinct.

Is the sustainable path necessarily the preferred path?

Note that if you were both of the same gender there would be no issue, or guilt, associated with bringing life on the spacecraft to an end.

Inquiring minds want to know

Equity is typically presented as a normative concept; there is no correct and universal answer to the question of what is equitable.

In contrast,

Efficiency is typically presented as an objective concept: everyone would agree whether an allocation is, or is not, efficient.

But it is more complicated

If we all agree who is, and is not, a member of society, efficiency is an objective concept

But, who is, and is not, a member of society, is a normative concept

And adding or subtracting members from society one can often make an efficient allocation inefficient, or an inefficient allocation efficient.

The word efficiency is bantered around, but many economics majors are confused as to what it means. I teach a seniors course where the concept of efficiency plays an important role; many of my students, while they can recite the definition, do not understand what efficiency means and implies.

More on efficiency later