

Summary thoughts before first midterm in 2010: Fall 2017

October 5, 2017

Some review notes before the first midterm.

Next Tuesday, I will answer questions in class if you send them to me ahead of time. So email you question by Monday night **at the latest**.

Put you question in the text of the email. Written out, not a photo.

Explain your issue with the question.

Thanks.

Details about the exam:

If you have a question, write it out now and hand it in; better, send it to me by email, preferably a day or two before the review session.

50 or more questions designed to make you think, will start the exam row by row. Don't cheat.

Bring photo id, but nothing with a battery. If I see a phone, calculator, computer, or whatever, your exam will be

Don't forget a pencil and an eraser.

Let's start simple

Imagine a society that consists of only two individuals, you and the person next to you.

Imagine you enter into a trade (you give up some good X in exchange for some good Y). What do we know about the trade?

Voluntary, so a trade would not happen if it made either party worse off (both are likely better off)

In this world of two individuals, the trade is efficiency increasing, but does not necessarily achieve efficiency. The trade makes some members of society better off, and no members (there are only you two) worse off.

Before the trade the allocation of stuff was inefficient. We know this because some members can be made better off (in this case all of them) without making anyone worse off.

Unless trading is restricted, trades will continue until there are no more gains from trade, at which point efficiency is achieved in this two-person world. (Note that we don't need to worry about external effects because there is no one else to affect.)

How would you define efficiency?

The allocation of resources and goods is efficient if every reallocation that would make one or more members of society better off **require** that other members of society be made worse off.

Said the other way, if it is **possible** to reallocate resources or goods and make some members of society better off without making other members worse off, the current allocation is inefficient.

In a world of production, there will be gains to specialization and trade if there are comparative advantages.

Put simply, if producers specialize in the production of commodities in which they have a comparative advantage, and then trade with each other, more total stuff can be produced.

Make sure you understand comparative and absolute advantage, and their implications.

If the prices of commodities are flexible, including the price of commodity X, the market equilibrium for commodity X will **often** be efficient (the efficient amount of resources will be allocated to the production of X, the efficient amount of X will be produced, and the X produced will be efficiently allocated among society's members)

However, an important condition for the competitive market equilibrium to be efficient is that there are no significant **external** effects associated with the production or consumption of X.

There is an external consumption effect if the consumption of X by an individual affects others, either negatively or positively.

There is an external production effect if the production of X affects other producers, or consumers.

X can be a good or an activity.

Examples of external consumption effects include second-hand cigarette smoke and other types of pollution produced by individuals consuming things (e.g., loud stereos, ugly couches in front yards), congestion from driving, drunk driving, being an obnoxious drunk, having a pretty garden in your front yard that makes the neighbors better off, wearing clothes that affects others, and smoking weed in a way that affects others (positively or negatively)

Pollution from firms is a primary example of a negative, external production effect (oil spills, carbon and other types of emissions into the air, emissions into the water, etc.)

What would be an example of a positive external production effect? The classic example is the bee-keeper and the orchard. Your wearing perfume might produce both positive and negative external effect.

If the external effect is positive, to achieve efficiency need government intervention to encourage more production and consumption

If the external effect is negative need government intervention to encourage less production and consumption

Put simply, markets with flexible prices will tend towards efficiency if there are no significant external effects.

But if there are significant external effects, the equilibrium in these markets will tend to be inefficient.

If in the absence of government intervention, the market equilibrium is inefficient we say that “the market is failing” – “market failure”

If the market is failing, intervention in the market (typically by the government) is required to achieve efficiency.

In our examples in class from Chapter 5 in the text, the presumption was that the market for taxis and apartments in NY City would be efficient absent government intervention

But the market for fireplaces in Aspen would be inefficient unless the government intervened.

The difference between the examples is caused by the book’s implicit assumption for taxis and apartments that there are no significant external effects from taxi rides or apartment living (not necc. true).

And by the assumption that for fireplaces in Aspen their use produces significant external effects (air pollution)

Put simply, the market equilibrium outcome is often the efficient outcome, but not always.

As an aside, note that markets are not designed to achieve fairness, so we might dislike a market equilibrium that we feel is inequitable, but we would not deem this unfairness a market failure.

We introduced the concept of **equilibrium**

A group of individuals is in equilibrium when each individual is doing the best they can given what everyone else is doing.

In such a situation, no one has an incentive to change their behavior. That is why it is called an “equilibrium”

Sometimes the equilibrium will be efficient, sometimes it won't

For example, the equilibrium of our divorce game was inefficient.

But often market equilibriums are efficient.

Consider equilibrium in a society that consists of only you (a one-person society)

You, personally, are in equilibrium when you are doing the best you can given your constraints. Otherwise, you have an incentive to change your behavior.

An economic theory to predict how individuals behave

Economists assume that an individual has preferences, that the individual faces constraints, and that the individual chooses the most preferred bundle that he or she can afford.

(note that the above sentence lists three assumptions)

In more detail:

An individual can rank bundles of goods (stuff: goods, activities and levels of non-market commodities) in that she can say, for any two bundles (states-of-the-world), which bundle (state) she prefers. This is what economists mean when they say the individual has preferences.

The individual is constrained, constrained by income, prices, time, culture, the law, etc. That is, there are a lot of bundles that the individual cannot consume.

Of the bundles the individual can consume, economists assume the individual consumes the bundle that he or she ranks the highest from among the bundles he can afford.

Put simply, economists assume individuals are optimizers.

Because of constraints, whatever we do has a cost.

Constraints are caused by scarcity (there is a limited amount of stuff and time).

By cost, economists mean opportunity cost (what you give up when you choose to do A rather than B). The opportunity cost of choosing A is not experiencing B. If there was no scarcity, including time, the opportunity cost of everything would be zero, because you would not have to forego any good or experience?¹

¹ Note that time is the ultimate scarce resource. To make time un-scarce you would more than you could ever want.

In class we **will** build models to explain how much producers will produce/supply, but we have not done that yet.

We have specified industry supply functions, but not discussed where they come from. You can guess -- profit maximization (the firm is assumed to do the best it can given its constraints)

We introduced demand and supply curves

We showed that if price is flexible, price will adjust until demand = supply at the equilibrium market price.

Talked a bunch about movements along demand and supply curves vs. shifts in these curves, and what would cause either the demand curve or the supply curve to shift. (see the notes on Graphing demand functions)

We investigated how shifts in supply or demand would affect the equilibrium price and quantity.

Underlying **everything** we did is the notion of a **model**

Another name for a model is a “theory”

A model has three components:

Variables and their definitions

Assumptions

And predictions

Variables are things that can take different values—things that vary. Variables are either exogenous or endogenous. The variables you want to explain and predict the values of are the endogenous variables in your model; the intent of the model is to explain the levels of its endogenous variables. Exogenous variables in your model are variables that you assume affect the levels of the endogenous variables in your model, but whose levels are determined outside of your model.

“en” means inside and “exog” means outside, as in determined inside or outside of the theory.

(Variables that are endogenous (exogenous) in your model might be exogenous (endogenous) in my model.)

Variables are defined. That is, for each variable there is a statement of what the variable represents and how it is measured.

Assumptions are specified relationships between the variables. (They do not have to be true.) Einstein’s $E=MC^2$ is an example of a prediction from Einstein’s theory of relativity. But it has been an assumption in many subsequent theories.

Predictions (hypotheses) are of the form “if Then ...”

Predictions follow logically, by **deduction**, from the assumptions

We defined what we mean by an economic system and talked about different types of economic systems.

Put simply, an economic system is a **mechanism/process**, or group of mechanisms, that a society uses to allocate resources and goods. That is, a mechanism that determines what will be produced, how it will be produced, and who will get what.

We talked about different types of economic systems

E.g. market mechanisms and command-and-control mechanisms

We live in a mixed economy where markets are an important mechanism but other mechanisms such as the household and the government determine many allocations.

Keep in mind that markets are an **example/type** of economic system, **not a definition** of an economic system.

If you learn only two things in college learn (there are really the same concept)

The difference between an example and a definition.

The difference between necessary and sufficient.

Economists often like to look at decisions on the margin.

Should I eat one more french fry?

Should I watch TV for one more hour?

Should I buy another pair of shoes?

(Thinking mathematically, economists often assume continuity and differentiability²)

In deciding whether to consume one more unit, economists assume the additional unit is consumed if the benefits of consuming it, to the individual, are greater than the cost to the individual

Some decisions are more marginal than others.

Whether to drink another Diet Coke is obviously a decision that can be viewed as a marginal decision. It is easy to drink one more or less Diet Coke.

One might think marginally about whether to smoke another cigarette, but one might also conclude marginal analysis in terms of each additional cigarette is not appropriate because cigarettes are addicting: maybe whether one smokes another cigarette is not a choice.

Suicide does not lend itself to marginal analysis

While whether to get married a second time can be viewed as a marginal decision, marriage is a lumpy commodity. (Many of you will marry at least twice.)

So, while looking at decisions on the margin (should I do a little more or a little less) is often very insightful, it is not always possible to consume a little more or a little less of a commodity.

² Simply put a function is continuous if you can draw it without taking your pencil off the page. And a function is differentiable if the derivative is defined at every point on the function. Continuous is a necessary condition for differentiability.