ECON 1010 Intro Microeconomics In-Class Activity 2 Answer Key

1. **In your own words, define and explain a market and market competition.**
    a. **What are firms looking to maximize? Do they prefer more or less market competition? Why? Give an example of how firms may try to achieve their desired level of competition.**

A market is just a collection of buyers and sellers for some good or service. This is a pretty broad definition, but note the implicit tension between buyers and sellers. Buyers prefer lower prices, while sellers prefer higher prices. We generally think of market competition as sellers who provide similar goods/services competing for buyers. In this class, we will mostly focus on sellers competing on price. You could also think of market competition as buyers competing for sellers, but this is less intuitive since firms are the ones who dictate their prices.

Firms are looking to maximize **profit**. They would prefer to have less market competition because it generally means higher prices and more profit. We will discuss this in detail later in the semester, but for now, more market competition means more downward pressure on price (consider how more sellers would make it more likely that a surplus occurs). Firms may try to limit market competition through product differentiation (e.g., Apple sells iPhones, which they want to convince you is **not** the same as other cell phones) and collusion with other firms (so they can act as a single, larger firm). Another strategy is supporting market regulation (regulation generally increases costs, especially start-up costs), and there are many other strategies. Part of the tension in economics is that we (consumers, governments, etc.) generally prefer **more** market competition, but every profit-maximizing firm desires **less**.

2. **Imagine a market where many firms sell identical goods (perfect competition setup). What are intuitive reasons that no firm would charge above the market price? Below the market price?**

If many firms are selling the same good, then raising the price will cause all of a firm's consumers to switch to another firm. Why would anyone buy at a higher price when it is very easy to buy an identical good at a lower price? If firms can sell as much as they want at the market price (a fundamental characteristic of perfect competition), then they have no incentive to charge under the market price.

3. **What is the defining question of demand? Of supply? What are the laws of supply and demand (one law for each), and why do they make sense?**
    a. **In the laws of supply and demand, why is "all else equal" so important? What do we allow to vary on supply and demand graphs? If something outside of those varies, how is that reflected on the graph?**
    b. **What is the difference between an increase in quantity supplied and an increase in supply?**

The defining question of demand is "how much will consumers want to buy at different prices?" For supply, the defining question is "how much will firms want to sell at different prices?" Notice that these questions revolve around how much consumers/firms **want** to buy/sell at certain prices, which is not always possible (i.e., surpluses and shortages can occur).

Law of Demand: all else equal, when the price of a good rises, the quantity demanded falls.

Law of Supply: all else equal, when the price of a good rises, the quantity supplied rises.

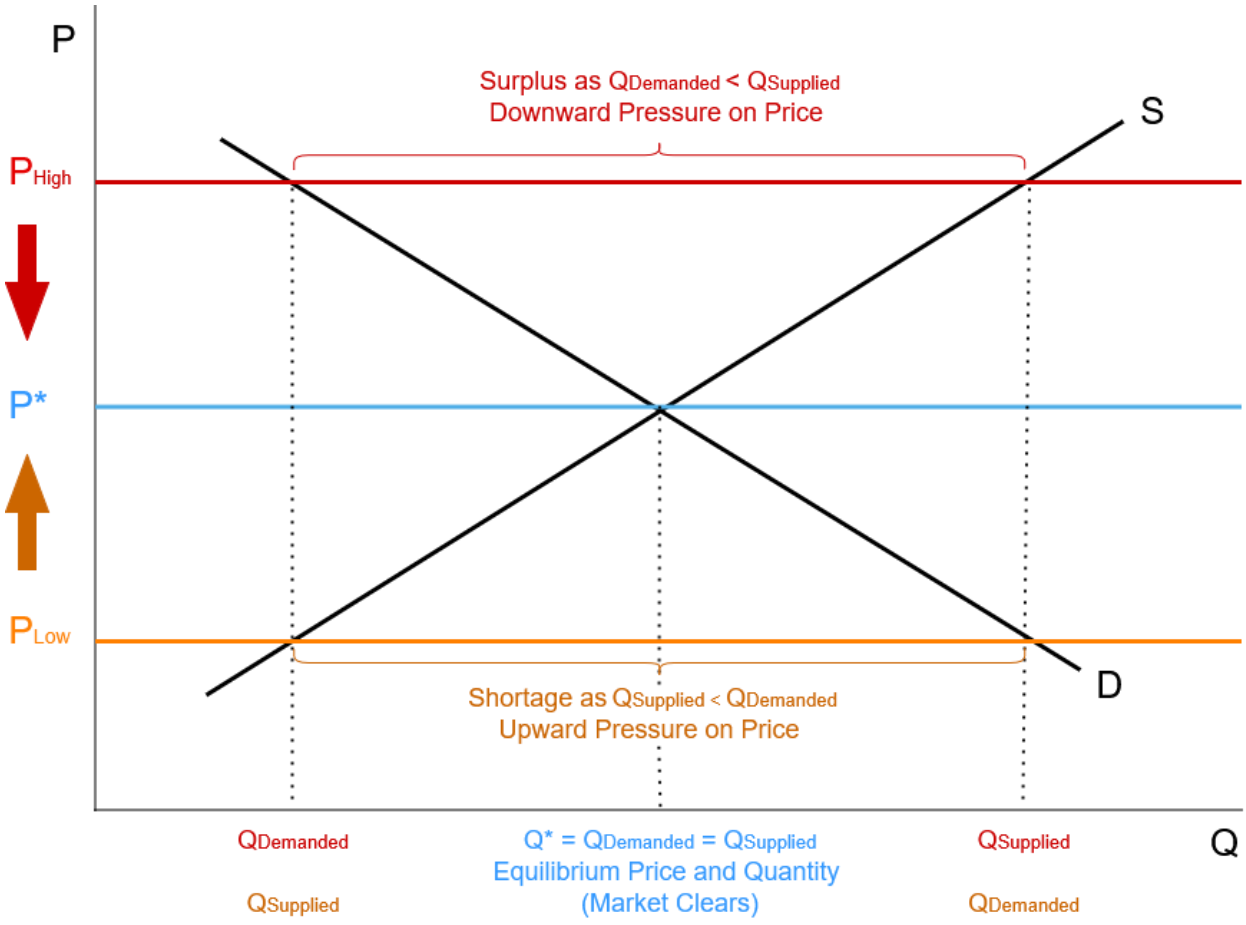
These laws should make intuitive sense as consumers prefer low prices (and will demand a higher quantity if prices are lower), and firms prefer high prices (and will supply a higher quantity when prices are higher).

"All else equal" is incredibly important in these laws because it makes it clear that these laws are **only** about the relationship between the price of a good and the quantity supplied/demanded for that same good (i.e., we only let these two things vary on a single supply/demand curve). If **anything** else changes, we must shift our supply/demand curves, depending on who is affected (consumers and/or firms). A good way to think about these curves is to realize that they represent relationships that take the world as it is right now and do not allow it to change (all else being equal). If any of the "all else" changes, then we have to shift the curves to represent the new relationship in the new state of the world.

An increase in quantity supplied is a movement **along** the supply curve (up and to the right), while an increase in supply is a **shift** of the curve to the right. Remember this language, as it will continue to come up. Also, note that the only way for a change in quantity supplied to occur is if there has been a shift in the demand curve. A helpful way to understand this is to consider how the price could change, which is the only way to move along a supply curve (a supply curve shows the relationship between price and quantity supplied, assuming all else remains equal), without the supply curve shifting.

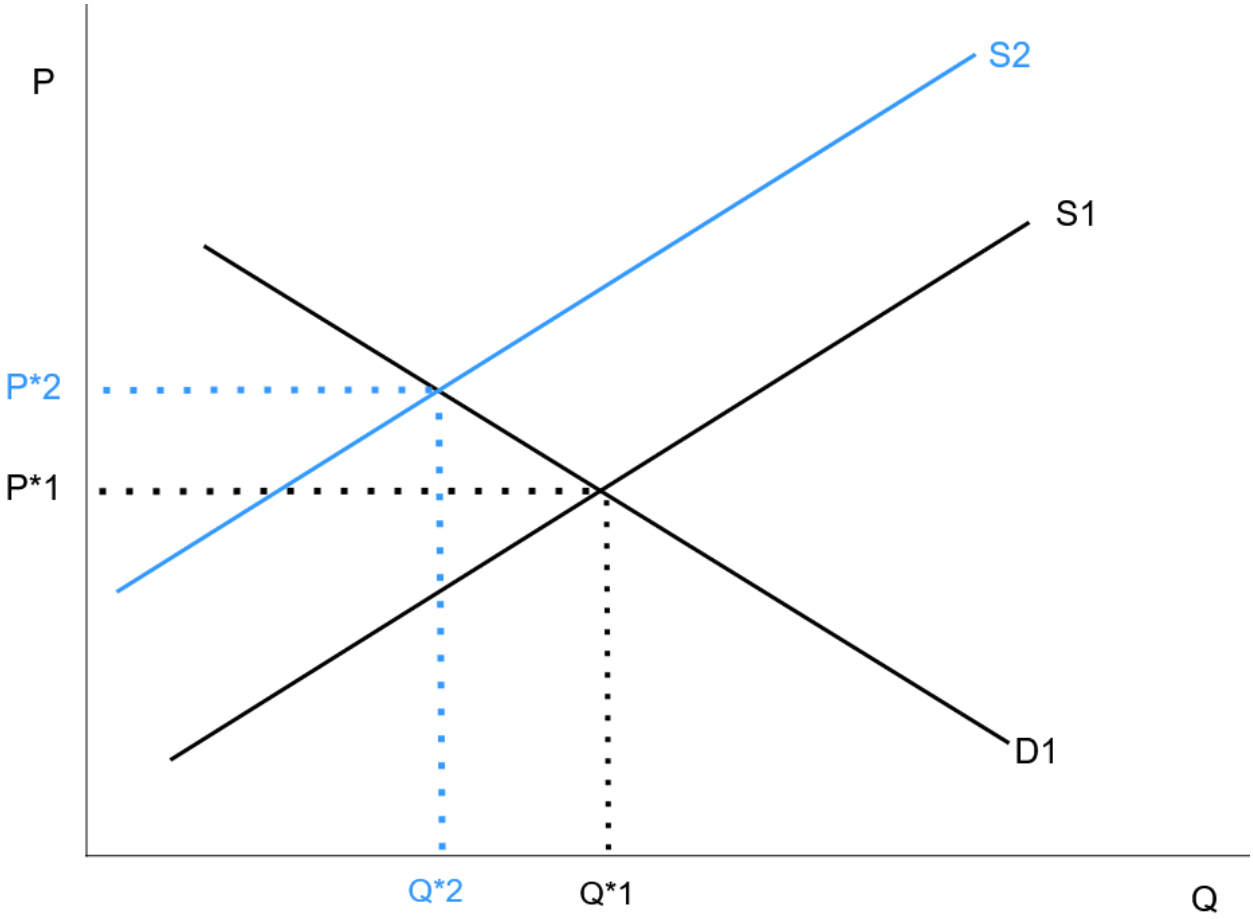
4. **How does market equilibrium occur (i.e., what happens if the price is too high or too low)? Illustrate this on a graph for the potato chip market.**
    a. **How does this relate to the "invisible hand" in Adam Smith's *Wealth of Nations* (i.e., what is the hand and why is it invisible)?**

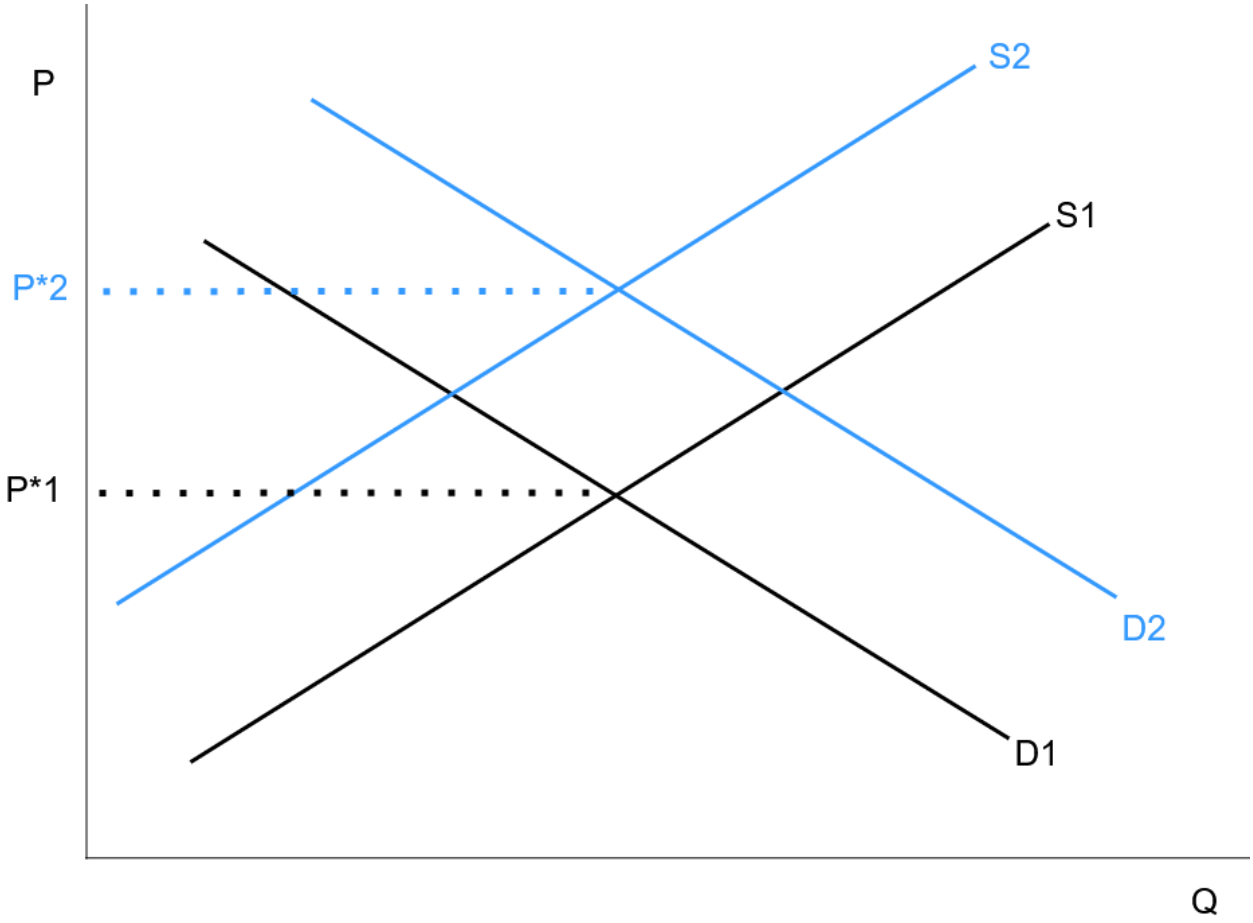
Market equilibrium occurs due to the pressure that surpluses and shortages exert on price. If there is a surplus, firms have more than they can sell, so to sell their leftovers, they must lower their price (i.e., a surplus implies downward pressure on price). If there is a shortage, consumers want to buy more than they can, which allows firms to charge a higher price while still selling all of their output (i.e., a shortage implies upward pressure on price). Market equilibrium occurs when these forces "meet in the middle" at a price that allows markets to clear (quantity demanded = quantity supplied). At the market-clearing price, there is neither a surplus nor a shortage, so there is no pressure on the price to change. A great way to think about market equilibrium is as a fixed point, which means that being at that point means you will stay there.



Adam Smith's "invisible hand" refers to how price allows for markets to reach equilibrium. The "hand" is the price, which is "invisible" because there is no central authority dictating what it must be. Individual firms will face surpluses and shortages, and eventually, the market will reach a point where it clears (quantity supplied = quantity demanded) and the equilibrium is reached. This is one of the most powerful forces in market economies (it's why they call it a "free" market), but note that it doesn't necessarily mean everyone will be thrilled with how the market allocates resources.

5. **Draw a graph representing the market for microchips and mark the equilibrium price and quantity. How would an invasion of Taiwan (the biggest producer of microchips in the world) affect this market? Represent this graphically and mark the new equilibrium price and quantity.**
    a. **Now imagine that this invasion pulls several world militaries into a conflict, increasing their need for advanced microchips. Draw a new graph with both shifts. What do we know for sure about this new equilibrium? What is ambiguous in this new equilibrium?**



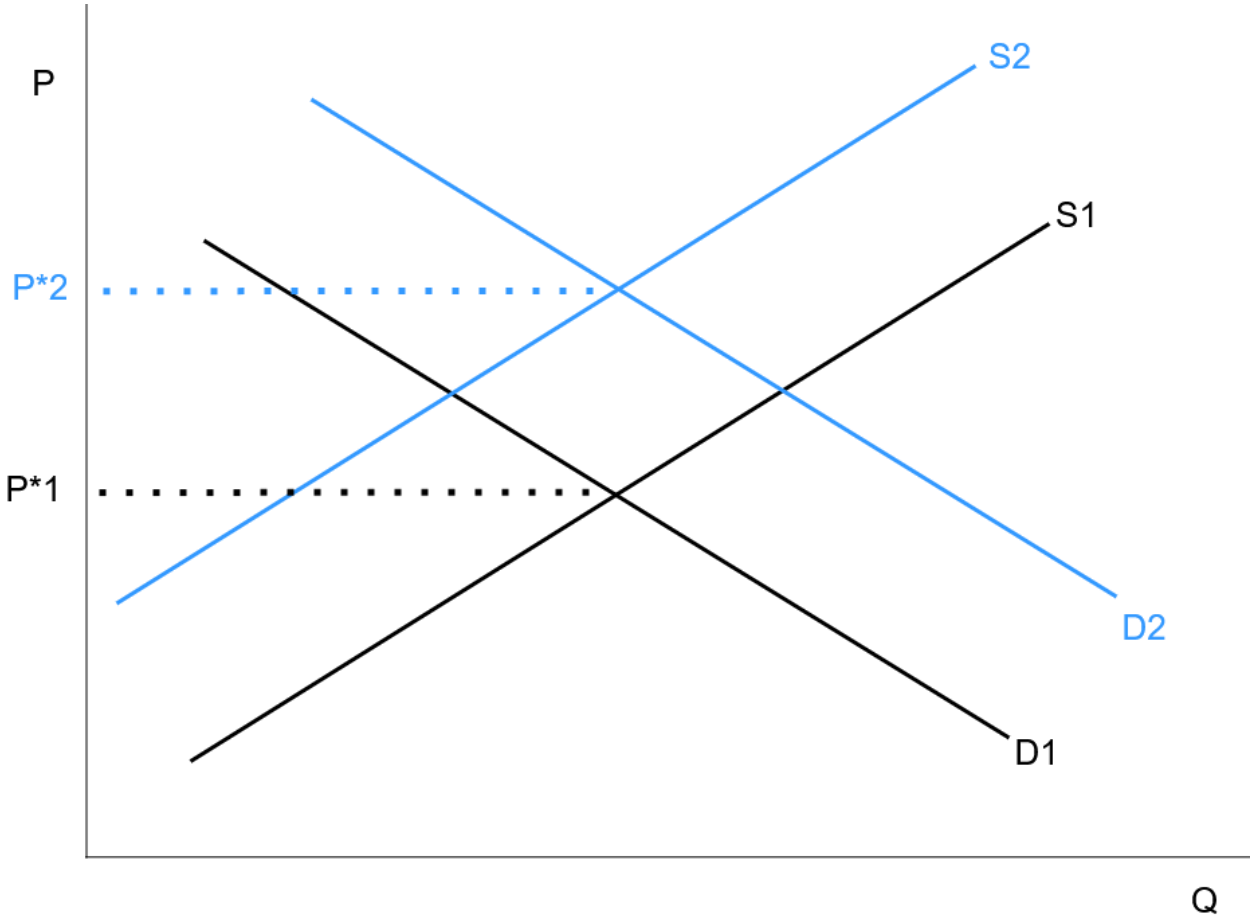


If Taiwan is invaded, then we should expect a decrease in the supply of microchips (much more difficult to produce when you're fighting a domestic war). This will raise the equilibrium price and decrease the equilibrium quantity.

If Taiwan is invaded and this draws world militaries (who rely on microchips) into the war, then we can expect supply to decrease **and** demand to increase. This will surely result in an equilibrium price increase, but the direction of the effect on equilibrium quantity is ambiguous. On the graph above, the equilibrium quantity looks unchanged, but it could increase or decrease depending on the slope of the curves and the amount they shift.

Extra Credit Questions

1. **Draw the market for microchips in equilibrium. Imagine there is a growing national belief that the price of microchips will become more expensive in the future. What happens to supply and demand? Why?**
    a. **What is the change in equilibrium price and quantity due to this belief?**
    b. **What does this say about how expectations can influence reality?**



Supply will decrease and demand will increase (same as Q5). Supply will decrease because firms know the price will go up in the future, so they will "save" some of their microchip output to sell once the price goes up. Demand will increase as consumers seek to purchase microchips before their price rises. The equilibrium price will surely increase, but there is an ambiguous effect on equilibrium quantity. This is an interesting find because expecting the price to rise will cause it to actually increase, even if it was never **going to rise on its own**. Here, this belief makes the reality of a price increase in the microchip market.

2. **When both supply and demand shift, there is always an ambiguous change in either equilibrium price or quantity. Why? Create a 2x2 chart with increase/decrease in supply on one side and increase/decrease in demand on the other to help illustrate this point.**

Looking at the chart below, we can see why shifting both curves **always** results in an ambiguous change in either equilibrium price (P*) or equilibrium quantity (Q*). The green arrows (on the right) indicate the effect of supply shifts on P* and Q*, and the blue arrows (on the left) indicate the effect of demand shifts on P* and Q*. In all cases, there is a reinforcing effect on one equilibrium variable and a counteracting effect on the other equilibrium variable. This happens because demand shifts affect P* and Q* in the same direction, and supply shifts affect P* and Q* in opposite directions. Because of this, it is impossible ever to get all effects to align.

Effects on P*, Q*	Supply Increase	Supply Decrease
Demand Increase	P* ↑ ↓ Q* ↑ ↑	P* ↑ ↑ Q* ↑ ↓
Demand Decrease	P* ↓ ↓ Q* ↓ ↑	P* ↓ ↑ Q* ↓ ↓

3. **Think about a good that is a necessity (e.g., water) and another that people can live without (i.e., candy). How would the demand curve be different in these two situations? Why?**

If a good is a necessity, we will likely consume about the same amount, regardless of price. This means that we should expect a demand curve where price changes have a **relatively small** effect on the quantity demanded. Therefore, we should expect a steep demand curve. For goods that we can live without, our quantity demanded is likely to be heavily impacted by price. We should expect a demand curve where price changes have a **relatively large** effect on quantity demanded. Therefore, we should expect a flatter demand curve. This question looks forward to the next topic, elasticity, which will help us describe how responsive the quantity demanded is to price changes (this is known as the price elasticity of demand).