

# **My Theory of Economics:**

## Everything Debunked and Explained through Incentives

After taking an economics class at my university, all the theory related to firms and individuals was convoluted and hardly explained anything to me. As such, I wanted to redefine economics in a way people could understand and is much more intuitive. Moreover, I plan to debunk much of what I was taught in my economics class as there were assumptions that were made that do not explain certain behaviors. Since this is primarily a philosophy journey of Economics, I plan to limit my usage of math unless required.

The manner I want to explain everything is through **incentives**. Incentives are generally taught in psychology (and also economics but only in a manner that emphasizes policies like tax breaks) but it explains human behavior quite well. Our minds have neurotransmitters like dopamine, serotonin, and oxytocin. We perform behaviors that release those neurotransmitters. “Why?”, you ask. Well, because it is as simple as it makes us feel good or happy in one way or another. My theory is that it can explain everything related to economics. Additionally, this theory of mine extends through temporally as well meaning that people can be incentivized by future rewards not just present rewards. We delay our gratification for further better gratification.

### Assumption:

The assumptions that I lay out are interludes that describe assumptions that my economics classes have often relied on but are not very effective in covering a broad set of cases. The first assumption that I have for

you is that people are rational. What does this mean? It means that people have preferences and goals and rely on logical reasoning to choose their preferences or attain their goal. In actuality, people rely on their emotions actively in their daily lives.

### Opportunity Cost:

Opportunity Cost was the first lesson I was taught in economics. While it does align with the theory that is discussed here, it is worthwhile to talk about it. Opportunity cost is defined by the cost you incur by not pursuing some action. An example of this is choosing to go to a concert instead of working a shift, where the opportunity cost is the money earned from work. What opportunity cost as a concept is trying to demonstrate is that rational people will always choose the option that minimizes their opportunity cost. In the example I gave, people value going to a concert much more than the pay from their work and choose to go to the concert. Thus, they minimize their opportunity cost. A theory of incentives can also explain the behavior to choose the concert over working a shift. A person who likes concerts will be far more incentivized to go to one and oftentimes they will choose the concert over work. Same logic, just a different perspective on it.

Where the concept of opportunity cost fails is when dealing with irrational people. Consider a person gambling in Las Vegas (assume they're there for the fun of it and do not have a crippling gambling addiction). This person started with around \$500 and lost all of it playing the roulette. This person

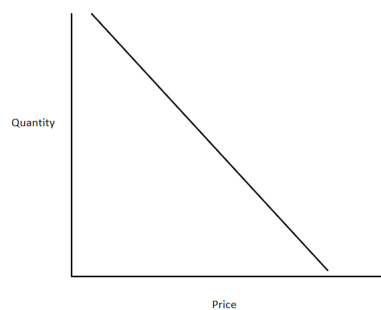
has been to Las Vegas before and similar results have occurred before. Do you think this person will quit or do you think he will play the roulette again? The likelihood is that they will be on that roulette table again betting. If they choose any other activity like watching Cirque Du Soleil or just walking around in the name of tourism, their opportunity cost would have been lower. Those other activities are far more enjoyable and given their track record, they would be losing more money gambling. So why isn't this person minimizing their opportunity costs? Because minimizing opportunity costs assumes that the person is rational and fails to account for irrational behavior such as this. However, an incentive theory can much more adequately explain this. The person was influenced and incentivized by the potential winnings from the roulette and ignored past data and continued gambling. The potential winnings lit up his or her brain far more than a simple walk or a show and thereby leading them to lose their money.

### Demand for normal goods:

Demand was the second concept I learned about after opportunity costs. For any good, there's people who want to buy that good and the total amount of the good that people buy is the demand of that good. In most economics classes, demand is measured as a function of price (that is when price changes so does demand). The exact relationship is primarily an inverse relationship such that when price increases, demand decreases which is called the Law of Demand<sup>1</sup>.

People want to maximize their value which makes sense why more of an item is bought when the price is lower. I also want to explain this using incentives. Imagine a world with only one good (as many introductory economics classes do). If the price is cheaper, you can buy more of the good with the same amount of money. Since the good is favorable, people would be incentivized to buy more of it.

Below is a graph that visualizes this.



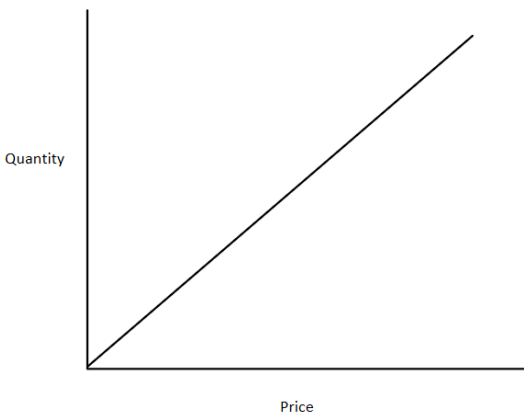
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<sup>1</sup> In most scientific studies, when something is presented as a law, it is meant to be absolute. However, economics as a subject ignores this absolutism for what I believe to be a better sounding name. I will present examples of goods that disobey this "law" called giffen goods.

### Supply:

Adding in supply is often where economics was unintuitive for me. Every time supply was explained, it was assumed to have an upward slope or at the bare minimum, have a positive relationship between quantity and price.

Below is a graph that shows this trend. Note that I put the price on the x-axis. This is simply because demand and supply seem to be a response to price rather than the other way around.



What a supply curve or supply represents is the unit cost to produce a good. Here's where the dilemma comes, what business would want to pay increasing costs for the product that they make. Businesses are incentivized to reduce costs.<sup>2</sup>

This idea will make more sense when explaining perfect competition and all of its glory.

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<sup>2</sup> Businesses are groups of people and are also incentivized similarly except for business, the primary goal is profits so they will do everything to maintain those profits. Thus, it is unlikely that they will not minimize costs wherever possible.

### Perfect Competition:

Perfection competition is a market structure such that for a specified good, there's an abundance of buyers and suppliers. The main point of this structure is that neither the buyers nor the sellers can control the market price of the good.

The market price of a good is the intersection of the demand and supply curve. This model makes sense if supply increases with price increases and demand decreases with price increases. (There is also an underlying assumption that all buyers and sellers are rational)

Before explaining why the market behaves this way, one must understand the Nash equilibrium.

### Nash Equilibrium

Nash equilibrium is a concept in game theory where the game reaches a state that gives individual players no incentive to deviate from their initial strategy. The players know their opponents' strategy and can't deviate from their chosen strategy because it remains optimal.<sup>3</sup>

It is often introduced with the prisoner's dilemma. In this game, two criminals are arrested and each is held in solitary confinement with no means of communicating with the other. The prosecutors do not have the evidence to convict the pair, so they offer each prisoner the opportunity to either betray the other by testifying that the other committed the crime or remain silent.

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<sup>3</sup> Taken directly from investopedia

If both prisoners betray each other, each serves five years in prison. If A betrays B but B remains silent, prisoner A is set free and prisoner B serves 10 years in prison, and vice versa. If each remains silent, then each serves just one year in prison.

In this example, the Nash equilibrium is for both players to betray each other. Even though mutual cooperation leads to a better outcome if one prisoner chooses mutual cooperation and the other does not, one prisoner's outcome is worse.

	Work Together	Betray
Work Together	Both serve 1 years	10 years for 1st prisoner, 0 for 2nd prisoner
Betray	0 years for 1st prisoner, 10 for 2nd prisoner	Both serve 5 years

Here's a table summarizing the dilemma.

### Perfect Competition Continued:

Earlier I wanted to discuss why perfect competition only works with the current setup for demand and supply. It is because sellers follow a Nash Equilibrium. If all sellers started selling at a higher price, they could sell less for more resulting in better profits. However, imagine a couple of sellers who wanted to gain more profits will start selling more at a lower price which will most likely give them more profits. Just like the Nash Equilibrium, the few sellers betrayed the many for their higher profits.

Buyers will buy from cheaper sources so they are incentivized to buy more from the cheaper seller. The other sellers realize that they are missing out on profits and also default to a lower price until they cannot go any lower (otherwise they would be making a loss rather than a gain). The point at which the seller's price cannot go any lower is when the demand and supply intersect and it is considered the market price of the good.

Notice that if the sellers worked together, they could set a higher price and together make far more profits<sup>4</sup>.

With perfect competition, there is an inherent flaw, the company cannot make profits. The revenue will cancel out with the costs of making the goods. People are not very incentivized with zero returns. Thus, they are not very inclined to start businesses if that is the case. In real life, however, companies make extraordinary amounts of profit which means that either one or all the assumptions we made about the model are wrong or the model does not fit empirical data.

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<sup>4</sup> This is called collusion and is very much illegal. Competitors in the same market are not allowed to work together to raise prices to favor them, allowing for more competition. However, companies and sellers in general always figure out ways to get around. In modern times, companies got around it using technology and apps that tell sellers when to hike up prices. For more information on this, you watch the following video: [The Algorithm Running Up French Fry Prices](https://www.youtube.com/watch?v=Z8-wqv9_-Ac&pp=ygUNcG90YXRvIGNhenRlbA%3D%3D)  
([https://www.youtube.com/watch?v=Z8-wqv9\\_-Ac&pp=ygUNcG90YXRvIGNhenRlbA%3D%3D](https://www.youtube.com/watch?v=Z8-wqv9_-Ac&pp=ygUNcG90YXRvIGNhenRlbA%3D%3D))

### Flaws:

Let us take a look at our assumptions piece by piece. The first one is that we assume that both buyer and seller are rational. While this is not true generally speaking, since the supply and demand have to do with averages, it can be adequately assumed that people will follow some general trends like the Law of Demand.

However, another assumption we had was the Law of Supply which was that the quantity supplied increases with unit cost of the good. This cannot be true given our circumstances. Businesses are incentivized to generate higher profits<sup>5</sup> and will do everything they can to minimize their costs.

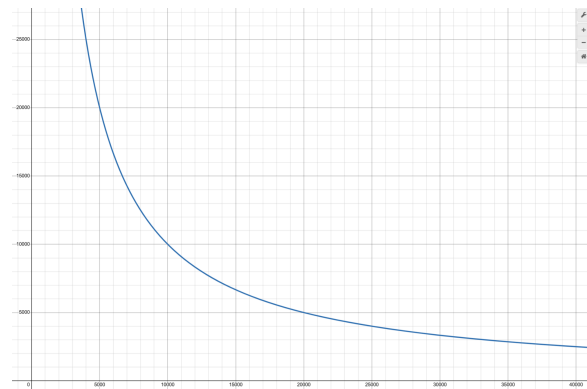
As companies invest more into their machines and factories, they tend to lower the overall unit cost of each good. While it may be true that the initial cost might rise as you produce more goods (because you need more labor, other machinery etc), it is not the case when you produce thousands or hundreds of thousands. To see why, imagine you are creating a good. The raw materials of the goods is a variable cost because it depends on the total cost from raw materials depending on how much quantity you have. Meanwhile, the factory and other machinery that help you create the goods is a fixed cost needing a one-time purchase and minimal repairs. So when you sell more and more products, the cost of raw materials per unit

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<sup>5</sup> Higher profits means higher company value causing more people to invest in the firm. A higher valuation also allows for the company to gain access to more debt to use for its operations. Overall, bringing in more profits means the firm has more cash to use in all of its activities whatever they may be.

will stay the same but the cost of the machinery decreases resulting in the unit cost decreasing with more units. There also exist other reasons for the unit cost decreasing, as you expand, the machinery and technology improves resulting in lower production costs (for example, lower electricity, more efficient use of raw materials). Additionally, with scale, you are able to purchase raw materials for cheaper because sellers of these raw materials like having guaranteed business and are incentivized to maintain those relationships by offering discounts.

Here's what the new supply graph adjusting for decrease in unit cost could look like with the x-axis being quantity and y-axis being price:



Now if we incorporate an initial rise in prices due to the cost of expanding, it could look like this:



While these graphs are hypotheticals as to what the supply may look like, they both convey the idea that actual supply looks significantly different to the current model of supply<sup>6</sup>. Additionally, since the demand is also an inverse function, if the demand's price is higher than the supply price, then the maximum profit for any company can never be reached. In which case, the goal of any company is to produce as much of a good as physically possible.

Another assumption we had was that there were countless sellers and buyers. In the real world, this is absolutely not true. However, in certain markets because of how large they are can approximate this assumption. A common example is food with countless farmers who sell the products and countless buyers of said product.

### Monopolies:

Monopolies are an extension of perfect competition except it assumes that there is a single seller. Because there is only a single seller, they can set whatever the market price should be and maximize their profits.

Monopolies are also incentivized to make as much they can but in this instance they are given the discretion to set the market price which can result in extremely large profits.

### Deadweight Loss and Surpluses:

When studying monopolies, we commonly encounter the term Deadweight Loss. It is oftentimes used to quantify economic

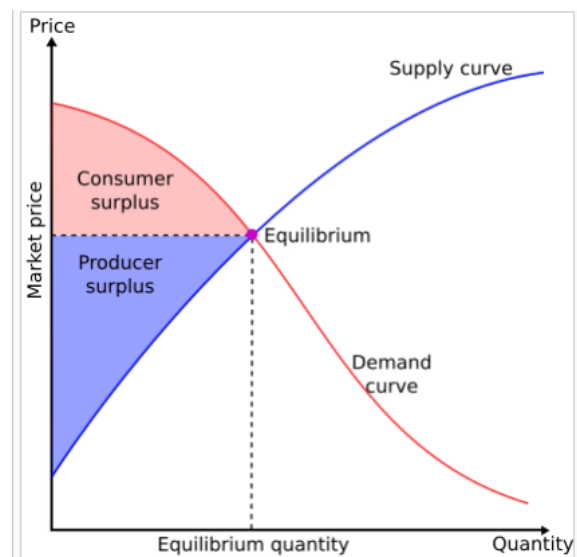
inefficiencies. Remember how earlier, opportunity cost was discussed. Well, this dead weight loss is essentially a result from pursuing unfavorable market conditions.

An introduction to Deadweight loss (which I will abbreviate to DWL) is often preceded by Consumer and Producer Surplus.

A consumer surplus is the “gain” that consumers experience because it is at a price lower than the maximum price they are willing to pay.

A producer's surplus is the “gain” that producers experience because it is selling at a higher price than the lowest price they are willing to sell it for.

There exist ways to mathematically calculate this. Here is a graph that illustrates that:



There is an obvious question to ask. What do consumer and producer surpluses do and are they useful for anything? Let's first examine the consumer surplus which was in

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<sup>6</sup> This is perhaps a bold statement of what supply actually could look like. However I do not have access to data on companies unit costs and I am estimating based on what I observe naturally.

the past useful for examining social welfare. The logic was that if people are able to get more for less, it would indicate they are better off<sup>7</sup>.

I want to point out that these surpluses and DWL are not real “gains” or “losses”. They represent economic value and do not result in people changing their behaviors. To put it simply take a monopoly which creates DWL. This monopoly is making profits and will not change its behavior and people who buy from said company have no power to influence the price and so the DWL remains indefinitely. Another example is with taxes. Say the government taxes cigarettes (for good reason). The removal of the taxes negatively incentivizes people to once again buy it despite it also removing DWL.

## Conclusion

The reason I made this paper was to illustrate a different world view compared to what you would see in a classroom. It is to challenge your beliefs. While there are far more topics in economics that I probably have not covered, what I have illustrated is the current model of economics is flawed. Modern economics treats the subject as a math class when in reality it should be treated as a social science with plenty of case studies to properly understand the field.

Economics introduces to its students many models with many assumptions. Unfortunately those models do not capture reality, failing the students who study it. After taking two economics courses, they did not revise any models but only tried to expand the failed models to make it fit the real world. As such, I took it upon myself to introduce a revised model that explains far more of reality than the secluded modern economics.

I hope that this paper serves as an introduction into a chaotic field such as economics.

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<sup>7</sup> Unfortunately, that indicator no longer holds true. Wikipedia states that it's due to the fact that welfare is now multi-factored. I personally think it's due to the fact that all individuals regardless of income have to spend an extraordinary amount to maintain their current lifestyles which results in the indicator failing and being unable to measure actual happiness.

Similarly, my guess for producer surplus is that it's trying to measure profit margins.