# How to use basic economic principles in your daily and financial life as Engineer

A quick and simple definition of economics is the study of choices and behaviors. Economics focuses on why we make the choices we do. And what the implications of those choices are.

Broadly speaking, economics is the study of how society produces goods and services to meet the needs and wants of a population. The many different aspects of economic science includes labor economics, monetary theory and supply-side economics, to name just a few. The principles of economics determine if we can buy a new computer, whether our employer will be hiring or laying off workers and government taxation. In short, economics studies the world in which we live.

## Supply and demand

Of all the concepts within economics, supply and demand is perhaps the most well-known by the general public. It's notion is rather simple: In the marketpace, buyers and sellers go back and forth

on price until an agreement is reached. In economics, we call the point of agreement equilibrium. In other words, the buyer's price and the seller's price are now "equal."

How does this relate to you? Well if you've ever heard or bought or sold something on Ebay, then you've seen this in action! People bid on items for sale for a given length of time. When time expires, the one who bids the most get it.

Supply and demand theory says that as more people demand something, the more they'll end-up paying for it. With Ebay, the more people bidding("demanding") on something, the higher the winning bid will be.

But what about new sellers coming in during the auction period with the same or a similar item for sale? How would this impact things? What effect would this have on the winning bid? And how will it effect the other sellers? Well supply and demand theory talk about this exact situation!

In economics, the end result depends on a couple of things. Chief among them is whether the other

sellers are offering an item that's just as good, even better, or of lesser quality.

Think about it. Would you pay more for something that's not as good as something else? No way! You'd pay less to compensate for the lower quality. And that's exactly supply and demand theory says would happen. And so, sellers of damanged, older (outdated), or not working items should expect a lower price.

In other words, economic theory says that if a working item that's in pretty good shape is selling right now for $50, then another item that's similar to it but is damanged should sell for less. Take a look at the bidding on Ebay and you'll see this exact situation happening!

So basic ecnomic theory can help predict the outcome. Or at least, give you a better sense of what might happen over time. As a buyer, you can use this principle to help avoid overpaying for something. And as a seller, you can pick up on something that makes your item more attractive and a better buy.

## Opportunity cost

A basic principle in economics is the concept of opportunity cost. Simply put, it's the notion that there are trade-offs involved when making decisions.

For example, you have $1000 to spend. Should you invest it all in the stock market? Buy a big screen TV? Use it to pay down debt? Or leave it in the bank?

Economic theory would evaluate the pros and cons of going with any of these decisions. In other words, it would show you what you'd be giving up and gaining with each.

For example, the difference between putting the money in the bank and buying a big screen television is that putting it in the bank would earn you some interest. So going with the TV means giving up bank interest.

The opportunity cost here would be the lost bank interest you could have gotten if you put the money in the bank instead of buying the television. Knowing this, is the purchase of that TV a good idea? Well that's a personal choice, but economics can help you realize what you might be giving up.

This same principle can be used when deciding whether to start a business, leave a job, or accept a promotion or pay cut. Ask yourself: What would I be giving up if I made this choice? The answer = your opportunity cost(s).

If you feel that what you'd be giving up is too risky or too much, then perhaps it's not such a good idea.

## Microeconomics and Engineers

**As the name implies, microeconomics studies the economic choices that individuals, households and businesses make based on supply and demand. The core concept of microeconomics is the law of supply and demand, or as economist Adam Smith termed it, "the invisible hand" in his seminal book, "An Inquiry into the Nature and Causes of the Wealth of Nations." An 18th Century capitalist, Smith was referring to how competitive markets efficiently determine how goods and services will be allocated among the population. The law of supply and demand states that demand for a good is a function of its cost to the individual while supply is a function of its profit to the supplier.**

**Generally, as the price of a good increases, the demand for that good decreases. Conversely, as**

**price increases, producers will make more, increasing the supply. In an efficient market, buyers and sellers, guided by Smith's "invisible hand," will settle on the number of goods to produce and how much to pay for those goods.**

**Although they form the basis of microeconomic study, supply and demand are not the only determinants of how a society allocates resources. For example, as a producer manufactures a good, the marginal cost -- or the cost of producing "the next one" -- changes. At first this marginal cost decreases the more goods are produced, but eventually the cost levels off and begins to increase. In other words, the cost of producing another item costs the manufacturer too much. On the demand side, consumers must make choices about what to buy with their limited money. Simply because the market is offering a lot of apples at a good price does not mean we will buy more apples than what we want. The marginal utility of the last apple has decreased to a point where we prefer to use our money elsewhere.**

Within economics, there are two concentrations. One is called microeconomics and focuses on the "small picture." The other is called macroeconomics and focuses on the "larger or big picture."

Microeconomics looks at the behaviors of individuals, which we call consumers or households in economics. How can you use this in your own life? Well take a good look at your own company or neighborhood. For example, is your company doing well? Or how are home prices and/or foreclosures in your local area?

If you were to learn that there was a foreclosure in your area, is that a sign of more to come? Is it just one particular person who got him or herself into trouble? If it because that house and/or property wasn't well-kept and maintained?

Microeconomic theory looks at these issues to help you decide whether you should be worried. And if so, what are your choices and how might you be effected. It does this by gathering research and statistics that you then use to make informed decisions.

In your own life, you can pretty easily gather this information yourself by simply watching or reading the news. Or talking to others--friends, family, co-workers, bosses, etc.

Look for trends! And if you get a sense that things are rough or going to get tougher, then begin planning for it. Also look to see if those trends seem to indicate a short or a more long-term problem.

In other words, if it only looks like it'll be bad for a short while, then there's no reason to panic and overreact. But if it appears that it'll get worse and last for a while, then you should begin planning for the worst.

Lastly, take a look at microeconomic trends in other places outside your own! Why? Because as we often see in economics, as something effects one thing, it can also impact something else. Sometimes this occurs right away; other times, it happens later on.

Perfect example: A strike at a local plant. You may think this only effects those people who work for that company and live in that area. But not so! It can also effect that plant's customers, suppliers (vendors), other businesses, and other communities.

As one union goes on strike, it's not uncommon for

other unions to join in as a show of unity. Or one local union may strike, yet that same union in a different community might decide to participate or strike too in a show of unity. Local businesses might suffer as striking workers and their families cut back on expenses.

## Macroeconomics and Engineers

Macroeconomics is the study of large-scale economic inputs such as employment, inflation, growth rate, disposable income, etc. Where microeconomics is based on the law of supply and demand, macroeconomics concerns itself with the competing goals of consumers, businesses and governments and the effect those goals have on prices, employment and output.

The study of macroeconomics began in earnest during the Great Depression of the 1930s, when an Englishman named John Maynard Keynes proffered a theory of how monetary and fiscal policy could be used to manipulate the unemployment rate. By monetary policy, Keynes was referring to how a government controls the cost of money in circulation. In the United States, this falls to the Federal Reserve, which attempts to control inflation by setting certain interest rates. Fiscal policy refers to the spending decisions made by the executive and legislative branches.

In "The General Theory of Employment, Interest, and Money," Keynes advocated the use of government spending to "prime the pump," or to inject money into the economy to spur spending. He argued that a short-term deficit -- spending more than one takes in -- is acceptable to reduce the negative effects of a recession. Over time, competing theories have replaced Keynes's, but the idea that monetary and fiscal policies can be used to help control the economy remain central to macroeconomics

As I mentioned above, macroeconomics concentrates on the big picture. So instead of looking at individuals, it looks at all of them combined--groups!

So that strike at a local plant--a microeconomic event--becomes a macroeconomic event because it effects the overall economy. In other words, the local strike hurts mainly the local area (economy). But it also impacts the overall economy (whole city or state, or the entire country).

How? Well for one thing, tax revenue may decline as striking workers cut back on their spending. This

causes the amount of city and/or state sales tax to be less. And as a result, the city and/or state may have to cut back on providing services. Or be less able to repay their debts. Remember, tax revenue is government's main source of revenue!

It could also ripple to other states and countries if the suppliers to local businesses are outside there. For example, that plant buys its cleaning products from a supplier in a different state. Due to the strike, the plant may cut back on orders. So now a company in a state where they're not striking is being impacted. As a result of this, that company might have to cut back on its own expenses or look for another customer to make up for it. So the sales rep handling the plant's account could now be losing out on commission. As a result, he or she may have to work harder to supplement that loss or cut back on his or her own spending.

All this means that you should look at the larger picture too! Look for any signs of something happening elsewhere that might effect you. If another office of your company is cutting jobs or reducing costs, then maybe your office will do the same at some point. So look for possible trends and potential implications!

## Watch interest rates

The most important rates to watch are the Federal (Fed) Funds and Prime rates. Why? Because lending rates on many things are based on these! So if these go up, then your rate will probably go up too. And if they go down, then yours might too.

Home mortgage rates are tied to the prime rate. In other words, lenders take whatever the prime rate is and then tack on extra. How much extra? Well that varies from lender to lender, but it's often 2-5% over and above the prime rate.

Credit card rates are also based on these. The difference is that they often tack on even more than home mortgages! And that's because you don't have anything of value the lender can take if you default (cannot repay).

Auto and boat loans are also based on the prime rate. And like home mortgages, lenders add extra on top of it. So watching what interest rates are doing or where you think they may be heading can be of great assistance!

For example, if you believe interest rates will be coming down, then perhaps you will want to hold

off on refinancing or taking out a loan. Why? Because if you're right, then you can borrow at a lower rate and save on interest.

The big problem, as economic theory does point out, is the degree of uncertainty. And that's why economics is not an exact science! It looks at possibilities and trends. This is exactly what you must do--look for trends and gauge risks.

In other words, don't rely upon 1 source for your info! Get info from a variety of sources to see where there's agreement and what's different. And look for any biases that may be skewing that info!