

Asking Questions about Supply and Demand



IMPORTANT GUIDELINES

Here are some main ideas to think about when working with Economic Data:

1. An individual's personal financial data is not public information

- Do not expect to be able to look up your neighbor's net worth or other private facts and figures about their finances. You can use **financial samples** done in your area of interest to estimate it.

2. Understand the difference between sample & population data

- **Sample data** is data gathered from a specific group while **population data** is data gathered from the entire group. Estimating is done with samples. Definitive values are generated with populations. Almost all data you will find will be sample data except **census data**.

3. Correlation does not mean Causation

- Data from your sample might not accurately reflect your population. This is a good reason to include a measure of **margin of error** in your predictions because this will determine your **accuracy**.

4. Clean your data before using it

- Most datasets will include **unnecessary information that has no relationship with the data you are trying to analyze**, and you may not know what data is necessary just by looking at it. Being able to interpret the **correlations between datasets** is important because that is what allows us to draw our conclusions.

SUPPLY & DEMAND

Description:

Supply is the amount of goods available, and demand is how badly people want a good or service. Factors like seasons and popularity affect supply and demand, and prices can change with changes in supply or demand.

Example:

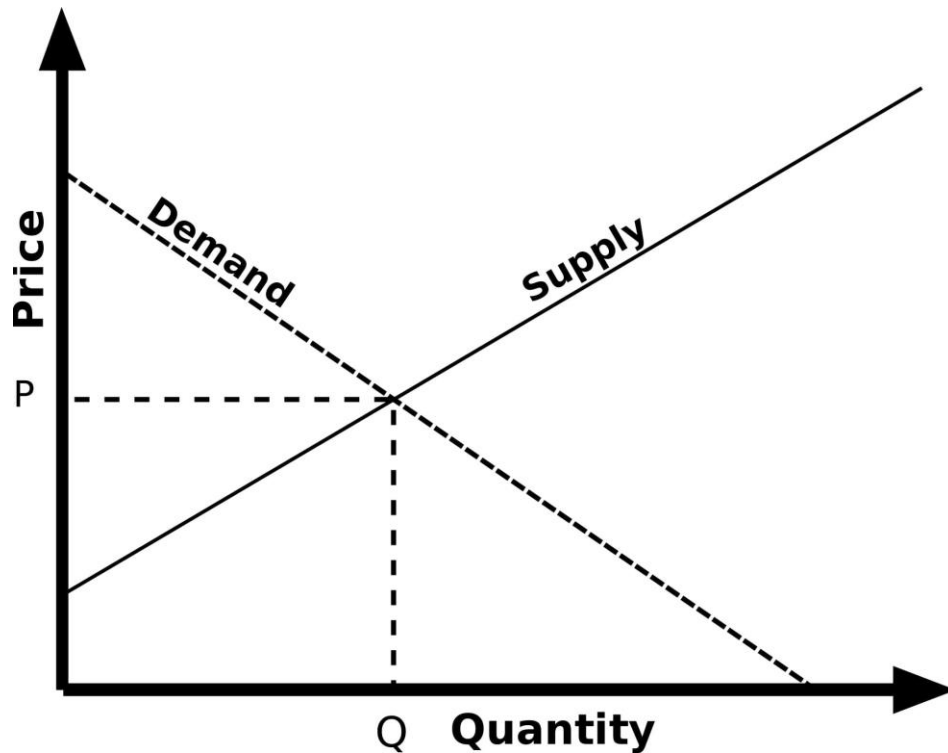
Suppose all the tickets for a ballgame have already been sold. Perhaps some people have decided to make some money by buying extra tickets and offering them for sale outside the stadium. You may have heard of this as 'scalping'. Scalpers know that there will be lots of people wanting to buy a ticket at the last minute and will be willing to pay more than the original ticket price. So, the demand is high, and the price goes up!

Why ask questions about supply & demand?

Supply and demand is an important part of how prices are decided. 'Supply' is what you have to sell, and 'demand' is how much someone is willing to pay for it. Generally, if there are a lot of people who want what you are selling, you can ask a higher price. The opposite is also true. If not very many people want what you are selling, you will have to lower your price in order to get rid of it.

Let's take food prices for example. The farmer has to determine the total cost of producing the food, such as the cost of raw materials, the fuel, the labor, the storage costs, etc. This cost tells the farmer the absolute lowest price he can sell the food and still make a profit. If the cost of the raw materials goes up, they will have to charge more for their product.

On the other hand, if there are many other farmers producing the same thing, the price will have to be decreased as there will be too much for sale. This is one reason why the price of certain fruits or vegetables go down when they are in 'season' because there are more farmers producing the same crop. In almost all cases, demand will go up when prices of a food go down and people will buy more of the food.



EXAMPLE SUPPLY & DEMAND RESEARCH QUESTIONS

1. How well can **liquidity, the supply of money**, be used to explain moves in the **S&P 500** or another **stock market index**?
2. Is the supply of available job openings able to be used to predict changes in retail sales?
3. Can changes in **privately owned housing authorized by building permits** be used to predict changes in housing prices?
4. Are population change and **energy demand** correlated?



SUPPLY & DEMAND DATA SETS



FRED Economic Data: Total Fed Assets

Time Frame: Dec. 2002 to Present

Location: United States

Use Directions:

This dataset is the total net worth of the Federal Reserve Bank of the U.S. The Fed holds debt instruments like Treasury notes or mortgage-backed securities. Utilize this dataset as part of your liquidity calculation. (Liquidity = Total Fed Assets – (TGA + RRP))



FRED Economic Data: Treasury General Account (TGA)

Time Frame: Jan. 1986 to Present

Location: United States

Use Directions:

This account is the primary operational account of the U.S. Treasury at the Federal Reserve. The Fed essentially uses this account like a checking account. U.S. government payments are made from this account. Tax payments made directly to the Treasury by citizens and corporations, are deposited in this account, and it is also used to collect funds from sales of Treasury debt. Utilize this dataset as part of your liquidity calculation. Liquidity = Total Fed Assets – (TGA + RRP).

SUPPLY & DEMAND DATA SETS



FRED Economic Data: Reverse Repurchase Agreements (RRP)

Time Frame: Feb. 2003 to Present

Location: United States

Use Directions:

A **reverse repurchase agreement** is a transaction in which the N.Y. Fed under the authorization and direction of the **Federal Open Market Committee** sells a **security** to an eligible **counterparty** with an agreement to repurchase that same security at a specified price at a specific time in the future, usually the next day. Utilize this dataset as part of your liquidity calculation. $\text{Liquidity} = \text{Total Fed Assets} - (\text{TGA} + \text{RRP})$.



Yahoo! Finance: S&P 500 (SPY) Prices

Time Frame: Dec. 1927 to Present

Location: United States

Use Directions:

This dataset contains the **Simple & Poor's 500 (S&P 500)** stock index **closing, opening, low and high prices** on a daily, weekly and monthly **time frame**. Utilize this dataset to correlate moves in liquidity with moves in the S&P 500, one of the main stock market indices.

SUPPLY & DEMAND DATA SETS



ECONOMIC DATA | ST. LOUIS FED

FRED Economic Data: Total Unfilled Job Vacancies

Time Frame: Dec. 2000 to Present

Location: United States

Use Directions:

This dataset is a count of every available job opening in the U.S. When this dataset increases there are usually many places hiring, but no one working the jobs being offered. When it is low, there is a lack of open jobs in the market, but not necessarily high demand for jobs. Utilize this dataset to see if changes in job openings relates to changes in retail sales.



ECONOMIC DATA | ST. LOUIS FED

FRED Economic Data: Retail Sales

Time Frame: Jan. 1992 to Present

Location: United States

Use Directions:

This dataset contains the most recent month's value of the **advance estimate** based on data from a **subsample** of **firms** from the [larger Monthly Retail Trade Survey](#). Utilize this dataset to see if changes in job openings relates to changes in retail sales.

SUPPLY & DEMAND DATA SETS



FRED Economic Data: New Privately-Owned Housing Units Authorized in Permit-Issuing Places

Time Frame: Jan. 1960 to Present

Location: United States

Use Directions:

This dataset contains the monthly change in new homes being bought in the U.S. Utilize this dataset to see if changes in **New Privately-Owned Housing Units Authorized in Permit-Issuing Places** relates to housing prices in the U.S. Separate areas or states are also available [here](#).



FRED Economic Data: Housing Price Index

Time Frame: Jan. 1975 to Present

Location: United States

Use Directions:

This dataset contains estimated housing prices in the form of an index estimated using **sales prices and appraisal data**. Utilize this dataset to see if changes in New Privately-Owned Housing Units Authorized in Permit-Issuing Places relates to housing prices in the U.S. Separate areas or states are also available [here](#).

SUPPLY & DEMAND DATA SETS



FRED Economic Data: Population

Time Frame: Jan. 1959 to Present

Location: United States

Use Directions:

This dataset contains the estimated value of the U.S. human population. Population includes resident population plus armed forces overseas. The monthly estimate is the average of estimates for the first of the month and the first of the following month. Utilize this dataset to see if changes in U.S. Population relates to changes in energy demand.



FRED Economic Data: Energy Demand

Time Frame: Jan. 1974 to Present

Location: United States

Use Directions:

This dataset contains energy demand in the U.S. based on the Producer Price Index. Utilize this dataset to see if changes in U.S. Population relates to changes in energy demand.

ADDITIONAL SOURCES TO EXPLORE



HealthData.gov



Google Dataset Search Beta