

Money Demand and Money Supply

Econ 202

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The whole point of this section is to prepare everyone for a discussion of Monetary Policy by learning how to discuss money as a good with both a demand and a supply.

Money can also be described as something we exchange within a market. It may seem a bit abstract to think of money in the same way that we think of boxes of cereal, cars, etc, but doing so helps us better understand how money affects the macroeconomy.

As we know, all markets consist of demanders and suppliers, but in order to draw a demand and supply graph for money, we need to define a few things first – namely, money demand and money supply.

Money demand will involve the quantity of money one holds for use in transactions. E.g., money held in your wallet, money in a checking account, etc. Money held as savings would not be money held for use in transactions, and since most savings accounts earn interest, we have a straightforward way of determining the cost associated with holding money for use in transactions. If you hold money in a checking account or your wallet, then that money is not earning the interest associated with savings. The interest rate on savings would be the opportunity cost of holding that money in a checking account or wallet. As the interest rate rises, the opportunity cost of holding money in your checking account or wallet increases, and you are more likely to transfer money from your checking account (or wallet) to a savings account. I.e., there is a negative relationship between the quantity of money you hold for transactions and the cost of holding money in that form (i.e. interest rates). That information tells us that the demand curve for money must have a negative slope.

Just like with all demand curves, there are changes that cause shifts in the money demand curve. E.g., if someone has an increase in income, they are likely to hold more money in their wallet or checking account. Therefore, changes in income cause money demand to shift. If someone has a change in their expectations regarding the future which would lead to them holding a different quantity of money (e.g. transferring money between a savings account and a checking account), then that might also shift the money demand curve.

Similarly, there are other changes that would shift this curve as well. E.g., if the price level increases, then everything is more expensive and it takes more dollars to purchase the same amount of goods and services. Therefore, an increase in the price level would increase the demand for money. It becomes easier to access our money. E.g., if banking regulations made

it easier to transfer money from savings to checking, then the demand for money would increase.

Summarizing, here are some shift variables for the money demand curve:

- Changes in income
- Changes in the expectations of demanders
- Changes in the (current) price level
- Changes in our ability to acquire money

Money supply will involve the quantity of money provided for use in transactions, something that is obviously controlled by a group we'll call the monetary authority (the ultimate supplier of money). We will define the money supply as the quantity of money held as currency or demand deposits (checking accounts), a definition that fits what is also officially called M1.

One possible way to describe the money supply curve is by drawing this curve with a positive slope, just like a typical supply curve. In some macroeconomics textbooks, you'll have authors that assume the money supply curve is a vertical line. Here, we will assume the former, that the money supply curve has a positive slope.

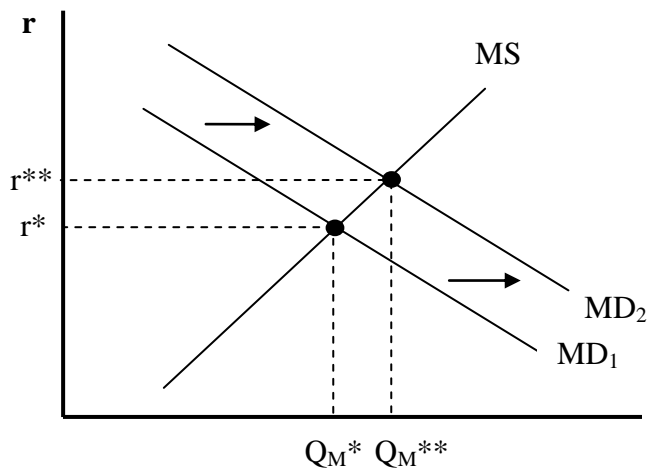
What leads to a shift in the money supply curve? We will argue that monetary policy which changes the amount of currency and demand deposits (i.e. M1) to change leads to shifts in the money supply curve. Putting that another way, the money supply curve shifts in response to money creation. Therefore, if the Fed engages in policy designed to increase the money supply, then the money supply curve increases – which on a graph means that the money supply curve will shift right. Decreases in the money supply are represented as a shift left in the money supply curve.

Summarizing, here is the main shift variable for the money supply curve:

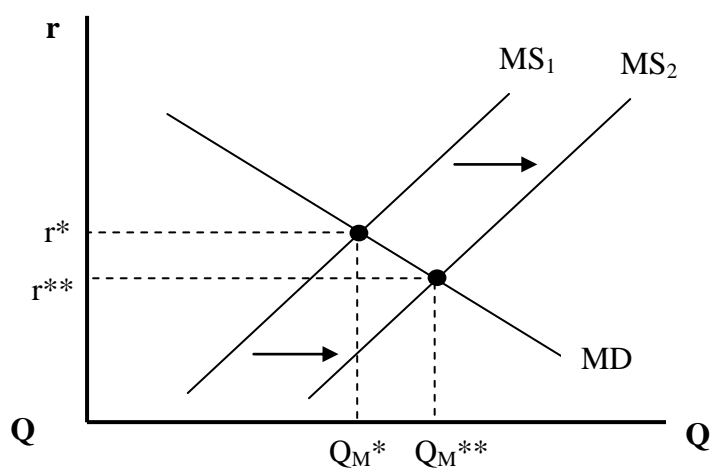
- Changes in monetary policy which affect M1

Our final version of the money market graph is provided below, which includes the money demand (MD) and money supply (MS) curves. This graph tells us the equilibrium interest rate (r^*) and overall equilibrium quantity of money (Q^*) within the macroeconomy.

The graph on the left illustrates the effect of an increase in money demand, whereas the graph on the right demonstrates the effect of an increase in money supply. Note the changes in our two equilibria, and that decreases in either curve obviously provide the opposite results.



MD increases $\Rightarrow r \uparrow Q_M \uparrow$



MS increases $\Rightarrow r \downarrow Q_M \uparrow$