The interest rate is the price of money. It’s what you have to pay to borrow money from the bank. The interest rate then depends on the interaction of the demand for money and the supply of money. In this discussion, we'll look at what the interest rate is and how it is determined. So let's begin with the question about the demand for money.

You for instance. What determines the amount of money that you hold; what determines the combined balances of your checking accounts, and the cash and coins that you choose to carry around with you and any given time? Well, one thing that is going to determine your demand for money is your wealth. And let this green bar represent your overall wealth; all of the things that you own that are of value. The bigger the bar is, the more cash and coins you are going to be carrying around, because you are probably going to be doing more shopping if you're richer. But there is an alternative way of holding wealth besides cash and coins, and that is interest-bearing assets. If you hold cash, then you are not holding bonds, and stocks, and savings accounts for that matter. The thing that distinguishes assets from money is that assets earn interest. That is, assets create more wealth for you.

So, how do you divide your wealth then, between assets and money? Well, there are three motives for holding money; and each of these motives leads us to think about factors that influence the division of your wealth between money-holdings and asset-holdings. The first is called the transactions motive for holding money, and that’s really why you carry money around: is so you can go shopping. The amount of money that you carry around in the transaction motive is going to depend on three factors. The first is real income. The higher your real income is, the more shopping you are going to do, the more stuff there is you're going to buy, and therefore you're going to tend to hold more money. That is, you need more money to actually buy the stuff. A second factor that influences the transactions holding is the price level. The higher prices are, the smaller the purchasing power of any given quantity of nominal money. That is, your checking account doesn't go as far if prices double. Therefore, you have to load up on money; increasing the quantity of your wealth that you hold in the form of cash and checks. A third factor is the interest rate. And the interest rate is the opportunity cost of holding money, because when you are holding money, you are not earning interest. When the interest rate is lower, you don't care; you are willing to forego interest in order to have the convenience of carrying a shoppable medium of exchange. But when the interest rate is higher, you'll tend to shift more of your wealth into interest bearing forms to take advantage of the higher interest rates. This the transactions motive for holding money, the tradeoff between the convenience of shopping and the opportunity of earning interest on interest bearing assets.

A second motive for holding money that is closely related to the transactions motive is called the precautionary motive. In the precautionary motive, you’re concerned about what might happen: the sudden need for money if you were to get sick or decide to quit your job; or need to buy a washing machine if the old one breaks. You never know what is going to happen. And the more things that can go wrong, the greater the uncertainty and the greater your anxiety about these things—the more likely you are going to be, to hold money. Nowadays however, the precautionary motive is probably less important. That is, because it is easier to convert assets into cash—that is to convert them into a liquid form or to liquidate them—then it was perhaps during the Great Depression, when Keynes first wrote about this motive. Also, people have credit cards nowadays, so you don’t need to stick cash in the mattress, if you have an emergency you can make yourself a loan very quickly with a credit card.

The third motive for holding money is called the speculative motive. The speculative motive is based on your guess about where interest rates are going next. Let’s think for a moment about the relationship between interest rates and the value of any given asset. When interest rates rise, that means that there are newly issued securities on the market that pay a higher rate of interest than the securities you may be holding. Higher interest rates means that nobody wants your old security that pays a lower interest rate, and if you want to sell it, you have to lower the price. You have to sell it at a discount, to make it competitive with newly issued securities paying a higher rate of interest. Now you start thinking if interest rates are very low right now, then they are probably going to go up. That means my securities are about to lose value. And therefore you may choose to sell the securities now and increase your holdings of cash, so as to protect yourself from the consequences of higher interest rates. Since higher interest rates shrink the value of interest bearing assets, then you protect yourself against that likelihood that eventually by holding more cash now. This is the speculative motive for holding cash, because when you are holding cash, you don’t stand to lose when interest rates go up.
Now we can take these three motives then, and we can draw a demand curve that summarizes these effects. In this demand curve, we are going to put on the vertical axis the rate of interest: the price of money. And on the horizontal axis, we are going to put the quantity of money that you choose to hold. The quantity of money is going to be related to the interest rate through those three motives. And let’s go ahead and draw the demand curve for money, downward sloping. The downward sloping demand curve indicates that at higher interest rates, the quantity of money demanded is smaller. At lower interest rates, the quantity of money demanded is going to be greater. That is what makes the curve slope downwards. And the reason for this negative relationship between interest rates, and the quantity of money that people want to hold is first of all, because of transaction. At higher interest rates, people would rather hold interest-bearing assets instead of cash, because of the high opportunity cost. So what people do at high interest rates is they take their cash and they purchase interest-bearing assets, converting their wealth into interest-bearing forms. The quantity of money demanded becomes small. At lower interest rates, people don’t want to give up the convenience of holding money, so they liquidate or sell their assets and hold cash instead.

A second thing that causes this negative relationship is the speculative demand for money. At low interest rates, people are concerned that interest rates may rise and shrink the value of their interest-bearing assets. Therefore at low interest rates, people protect themselves from this possible loss by selling their securities now and holding cash instead. So between these transactions, opportunity cost motive and the speculative fear of rising interest rates, we wind up with a downward sloping demand curve. Lower interest rates are associated with a larger quantity of money demanded; higher interest rates associated with the smaller quantity of money demanded. Now, we still have two other variables that aren’t represented in this picture, and those are the price level and real income. And, both of these variables influence the demand for money. In fact, if the price level increases, then people are going to need more cash in order to do their transactions. Their demand for nominal money balances the amount of money that they actually want to hold in their checking account increases when prices rise in order for them to have enough cash to do a given amount of shopping. Even if you are buying the same number of groceries, you need a larger balance in your checking account, if the price of groceries has increased. Therefore, a higher price level means a larger quantity of money demanded at every interest rate.

In the same a way, a larger real income shifts out the demand for money, because now you are buying more goods and services. When you are wealthier, you’re doing more shopping; and even if prices are the same and the interest rate is the same, you are going to want to hold a larger quantity of money in your checking account. You are going to need it to get your given amount of shopping done. When you are wealthier, you do more shopping and that means holding more transactions balances, a larger demand for money.

In summary, the demands for money depends on the price level, the interest rate, and real gross domestic product. These three factors combine to determine the fraction of people’s wealth that they hold as cash and checking for shopping, and the fraction that they hold as interest bearing assets. Now that we understand the demand for money, we are ready to add the supply of money, and with demand and supply, we'll be able to calculate the equilibrium interest rate.