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Economics 202

4 Macro Markets – Labor Markets
Although there are several different factors of production, we'll focus on just one, labor.
Therefore, it's also possible to re-label this section as "Labor markets". In a labor market, we
have demanders and suppliers. The demanders would be the firms who hire labor, and the
suppliers would be the households who provide that labor. We note further that the demand for
labor from firms will depend on how much output the firm needs to produce. E.g., when a firm
needs to produce (or sell) less, then the demand for labor will decrease (shift left). This is why
we call the demand for labor a "derived demand".

On a demand and supply graph for labor, the "price" of labor is simply the wage, and quantity
is how much labor we might hire. We measure labor in units, but if everyone worked the same
amount of hours, we'd call those units "persons". It's because people work different hours that
we refer to quantity as units of labor. When drawing the graph for a typical labor market, we
also know that the equilibrium quantity (Q^*) is how many units of labor are hired, and that
anyone in the market who's not hired would be unemployed.

Let's consider what happens in a typical labor market when AD decreases in the Goods and
Services market (above). For simplicity, let's assume that all labor in the economy is the same
and can be lumped into one big labor market. Let's further assume that everyone works the
same number of hours, so that we can describe Q_L as people and not by some abstract title
called "units of labor". The demand for labor is D_L and supply of labor is S_L. Where they
cross is our equilibrium, which gives us a wage of w^*. Let's say $w^* = \$10$.
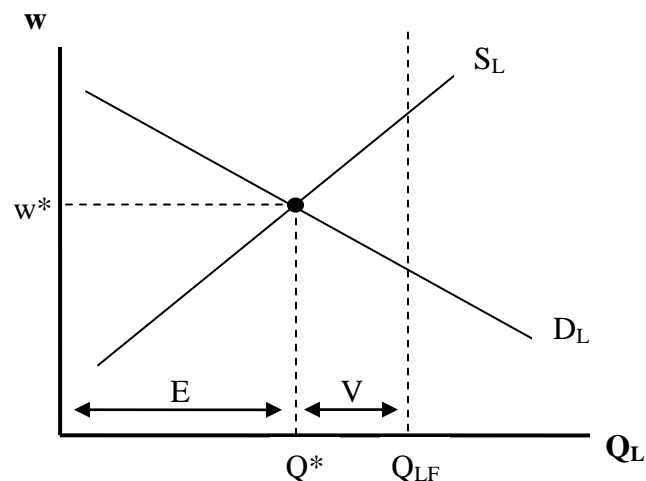
Now, we want to reconsider this graph in terms of a few details. The equilibrium quantity of labor hired is Q*, so Q* represents everyone who is employed. Of course, anyone in the labor force who is not employed must be unemployed. We'll use Q_{LF} to indicate the quantity of people in the labor force. The arrows which correspond with "E" tell us how many people are employed. The arrows which correspond with "V" tell us how many people are apparently unemployed, but let's think about what type of unemployment this must be.

Voluntary unemployment involves people who are not willing to take the current wage in a market, mainly because they're waiting on something better. Involuntary unemployment involves people who are willing to work at the current wage, but can't get hired. The unemployed people indicated by "V" must be voluntarily unemployed, because the only way they'd actually take a job is if the wage increased (e.g. due to an increase in demand). Therefore, "V" corresponds with voluntary unemployment.

When AD decreases, we have two possible outcomes that are illustrated below, but in both outcomes, we know that the demand for labor will decrease from D_{L1} to D_{L2}. On the left, we have a market where the equilibrium wage decreases with the decrease in labor demand, and on the right a market where the wage remains the same (e.g. a situation where everyone has a contract which guarantees that their wage won't fall during a recession or period of high unemployment). There are other reasons why the wage wouldn't fall, but a contract is certainly one possible explanation.
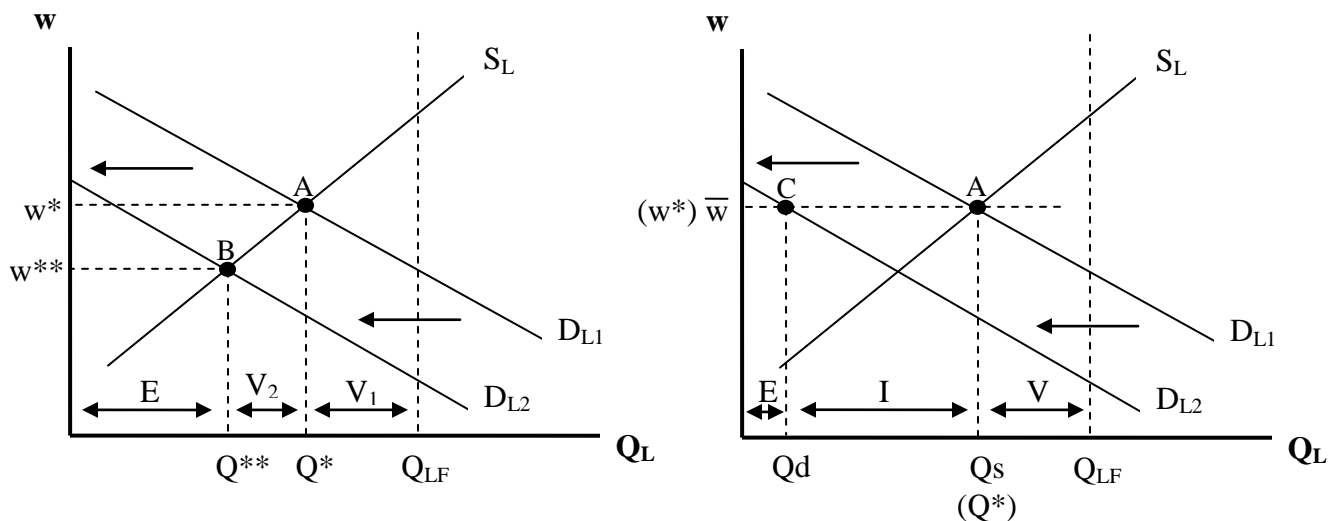
The graph on the left is referred to as a setting where we have flexible wages, because when the demand for labor decreases on the leftside graph, the wage falls from w* to w**. If the wage can change like that, then the wage is considered flexible. The graph on the right illustrates a setting where we have a fixed wage, since the wage doesn't change.

In the flexible wage setting, a decrease in the demand for labor leads to a lower wage and fewer people being employed (Q decreases). The wage decreases from w* to w**, we move from pt A to pt B, and the distance illustrated by the arrow that corresponds with the number of people who are employed decreases (i.e. "E" is smaller). If the labor force remains the same, then we observe an increase in unemployment - from our original amount of voluntary unemployment, which we now call V_1 to also include additional unemployment of V_2. What type of unemployment is V_2? Based on our definition above, V_2 must also be voluntary unemployment, because even more people than before the decrease in demand for labor are now unwilling to work at this new, lower wage w**. Our conclusion is that when we observe unemployment in markets with flexible wage, that unemployment is apparently just voluntary unemployment.

The graph on the right side (above) is a setting that involves fixed wages (as we said above, maybe due to a contract that doesn't allow the wage to fall). When the demand for labor decreases from D_{L1} to D_{L2}, we don't see a change in w (we remain at w*, which we now call $\bar{w}$ since the wage remains constant), but we do observe other changes. E.g., if the wage doesn't change, then we don't move to a new equilibrium point and we must determine the new quantity supplied (Qs) and quantity demanded (Qd) since those two quantities wouldn't be equal if we aren't at an equilibrium. Qs is the quantity that comes from pt A, our former equilibrium. In other words, if the wage doesn't change, the same number of people will continue to supply labor in this market. Of course, if firms have to continue paying the same wage, they'll hire a lot less people (i.e. Qd decreases to pt C).

We still have the original amount of voluntary unemployment (horizontal distance "V" between Qs and Q_{LF}), but now we have distance "I". Distance "I" represents the difference between Qd and Qs. Given that Qs > Qd, we apparently have a surplus of this good. Of course, a surplus of labor could also be called unemployment, but once again, what type of unemployment would this be? In this situation we have a bunch of potential laborers who are willing to work at the current wage but can't get hired because demand is so much lower than before. By definition, this would be involuntary unemployment (hence, the "I" that represents this horizontal distance). Note that in this situation, we get both voluntary and involuntary unemployment, and not just voluntary unemployment as we did before.

That suggests to us that there is only one way of getting involuntary unemployment. If wages are not flexible, then we can end up not moving to an equilibrium point on the labor demand and supply graph. When we don't end up at an equilibrium, we can get a surplus, and it's a surplus of labor that we interpret as involuntary unemployment.