

Discrimination Model¹ In-Class Problem²

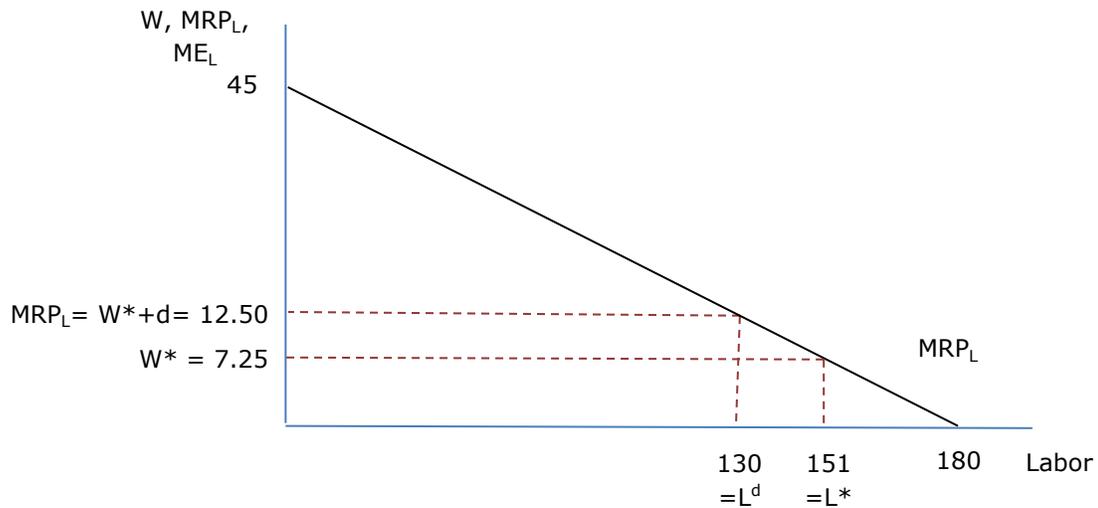
Suppose Anthony, the owner/manager of ATCO, a small manufacturing facility, employs low skilled workers at \$7.25 per hour in a competitive labor market for such workers. His economic consultant has informed him that these workers have an $MRP_L = 45 - 0.25L$. Anthony, who is "proud to be an American" and is slightly to the right of Attila the Hun when it comes to politics prefers to hire well groomed, young adult males of western European ancestry – in other words, he's a bigot. In fact, he prefers working with WASP's to making money, but in his market such workers are hard to come by and he finds himself forced to hire 130 others in order to meet basic production requirements.

a) Present a complete labor market discrimination model for ATCO representing the decision he's making. Be sure to include all relevant values.

$$\begin{aligned} & \text{Start with } MRP_L = W \\ & \text{and solve for } L \\ 7.25 &= 45 - .25L \\ .25L &= 37.75 \\ L &= 151 \end{aligned}$$

$$\begin{aligned} & \text{Find the value of } MRP_L \\ & \text{when } L = 130 \\ MRPL &= 45 - .25(130) \\ MRPL &= 12.50 \end{aligned}$$

$$\begin{aligned} & \text{Find the intercepts of } MRP_L \\ \text{If } L=0, & MRP_L=45 \\ \text{If } MRP_L=0 & \text{ then } 0=45-.25L \\ & .25L = 45 \\ & L = 180 \end{aligned}$$



¹ This In-Class Problem is intended to present an abbreviated discussion of the included economic concepts and is not intended to be a full or complete representation of them or the underlying economic foundations from which they are built.

² This problem was developed by Rick Haskell (rick.haskell@utah.edu), Ph.D. Student, Department of Economics, College of Social and Behavioral Sciences, The University of Utah, Salt Lake City, Utah (2014).

b) How much does ATCO pay these workers?

ATCO is just one employer in a market of many employers, each of which employ low skilled labor, so there's no reason to expect it to pay a wage different from W^* . So ATCO pays its low skilled workers \$7.25. It's worth noting that the firm appears to earn \$12.50 for each worker hour, so the firm may represent some level of imperfection even though the market does not.

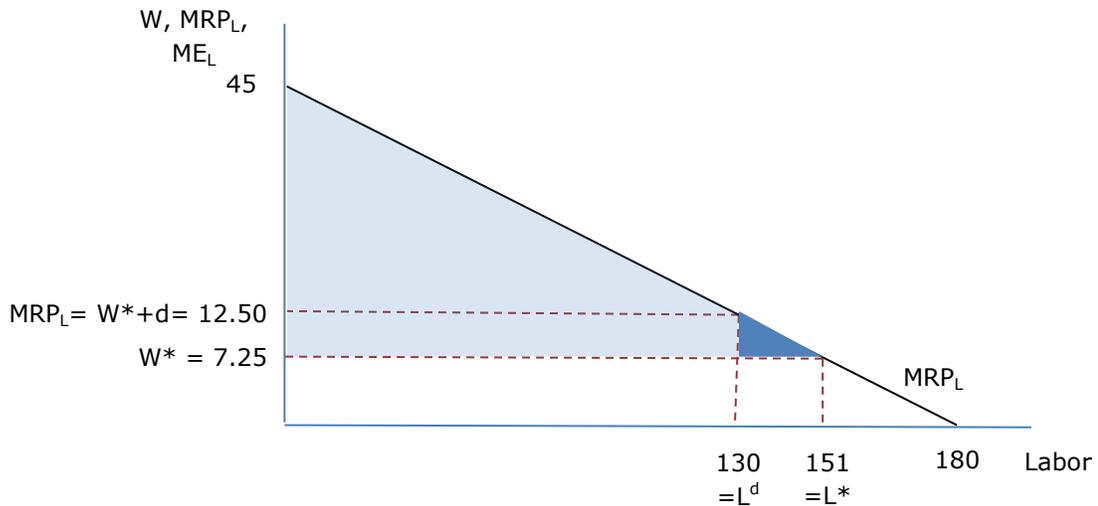
c) Assume that Anthony, like most small business owners, has personal income equal to the sum of the profits ATCO earns. Describe the compensating wage differential he experiences and provide its resultant dollar value.

We know that the discriminating employer is a utility maximizer and chooses to give up some amount of profit in order to increase utility. We also know in this case that the $\pi_{potential}$ can be compared to the π_{actual} of the operation. Since these are also the possible incomes for Anthony, we can think of the difference between them as being a compensating wage differential. Let's think of this in terms of $\pi_{potential}$ and π_{actual} where $\pi_{potential}$ equals the area above W^* , below MRP_L and bounded by L^* , and π_{actual} equals the area above W^* , below MRP_L and bounded by L^d .

$$\pi_{potential} = \frac{(45 - 7.25)(151)}{2} = 2850.12$$

$$\pi_{actual} = \frac{(45 - 12.5)(130)}{2} + (12.5 - 7.25)(130) = 2795$$

$$\Delta\pi = 2850.12 - 2795 = 55.12$$

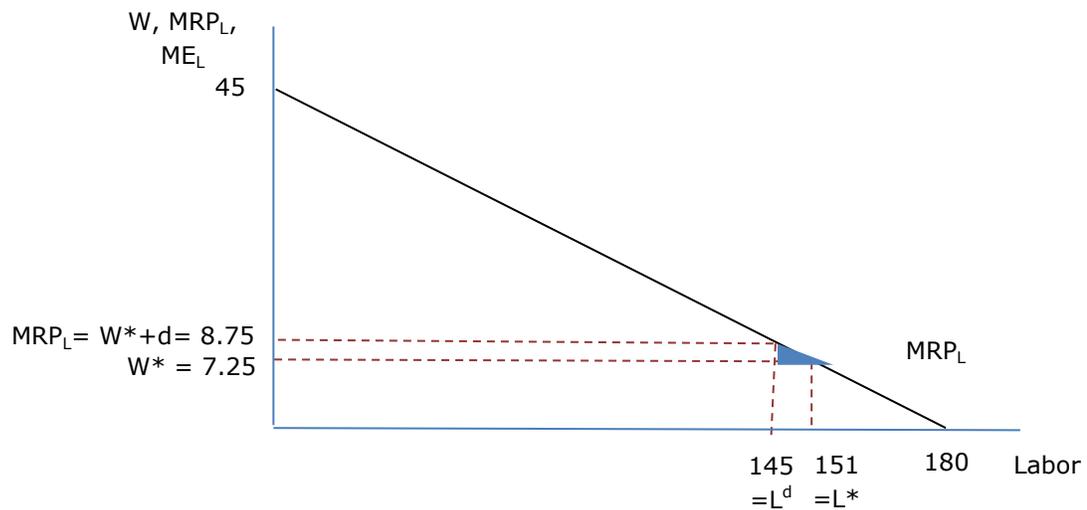


You might also think of this difference as being the darkly shaded area above, which looks a lot like DWL, and it is. Think of this as being some value not received by society, in this case lost potential profit for the owners of the firm as a result of their decisions.

- d) Were Anthony to find additional 15 workers of his preferred type, how would this change the dynamics of his firm? Provide your response in the way of a fully articulated labor market model representing ATCO's situation, and explain how this impacts Anthony's income (be specific).**

This is the same as part a) above, but in this case we have to think about the additional 15 workers as addition to the 130 Anthony originally employed, the combined workers (145) are still less than the 151 his firm would hire absent his discriminatory preferences.

Find the value of MRP_L when $L = 145$: $MRP_L = 45 - .25(145) = 8.75$



We now see that Anthony's income rise and his CWD declines:

$$\pi_{potential} = \frac{(45 - 7.25)(151)}{2} = 2850.12$$

$$\pi_{actual} = \frac{(45 - 8.75)(145)}{2} + (8.75 - 7.25)(45) = 2845.62$$

$$\Delta\pi = 2850.12 - 2845.62 = 4.50$$

This could have been calculated more easily by calculating the area above W^* , below MRP^L and bounded by L^d and L^* (shaded on the model above).

$$\Delta\pi = \frac{(8.75 - 7.25)(151 - 145)}{2} = 4.50$$