

ECON 110, Professor Hogendorn, Spring 2016

Second Midterm Exam

Each part of each question (a, b, c, etc.) is worth 5 points. Make sure to allot your time accordingly. Total of 30 points, -1 for messiness.

1. *Deerwood.* On April 11, 2016, Parker Hannifin announced it would close its Parker Hose Products factory in Deerwood, MN and move the 31 jobs there to a facility in Wisconsin (“as much as possible” the current workers will be offered positions in Wisconsin). Parker Hannifin is just trying to save on fixed costs, not reduce employment, but obviously for the Deerwood labor market this is very bad news (Deerwood’s population is only a little over 500.)
 - (a) Draw the labor market of Deerwood before the plant shutdown. Justify the way you draw the labor supply curve and the labor demand curve for the town. Label the equilibrium wage w^* . (Fact: there are other employers in Deerwood and other small towns within commuting distance.)
 - (b) Suppose that the Deerwood labor market were just as flexible and fast-moving as financial markets. What are some events that might happen after the plant shutdown? If the 31 workers earned w^* before the shutdown, what would they earn afterward? Why?
 - (c) Of course labor markets aren’t really that flexible. What do you expect will actually happen to labor supply, labor demand, and equilibrium wage in Deerwood after the plant shutdown? Draw on a graph.
 - (d) The other major employer in Deerwood is Magnum Machining. Suppose it has production function $f(L) = 75L^{\frac{1}{2}}$. What

is its firm-level labor demand curve? Suppose that after the Parker Hose shutdown, the marginal product of labor falls at Magnum Machining. Is the only explanation that the depressed labor market has hurt the morale or quality of the town's workforce?

- (e) Based on your answer to part (d), what do you predict will happen to the coupon rate and the yield on a Magnum Machining 5-year bond that matures in 2018? Explain.
- (f) Suppose that the hose market is perfectly competitive, and treat the Deerwood plant as a single "firm." The north-central US hose market has suffered a decrease in demand due to the reduction in oil investment in North Dakota. Draw a diagram of the hose market showing what happens to price, and draw a firm-level diagram of the Deerwood plant as a typical firm within the market. Show the optimal quantities produced at the Deerwood plant before and after the demand shift. Show the average cost curve such that the Deerwood plant made a net profit before the shift but a net loss afterward. Since the Deerwood plant does cover its average variable cost, why do you think Parker Hannifin shut it down?

When you are finished, please keep the exam sheet and hand in your blue book. Thanks.