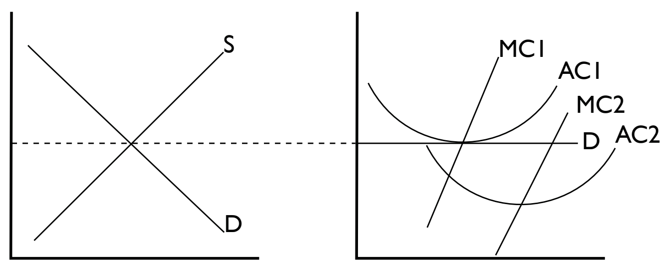
ECON 224, Professor Hogendorn

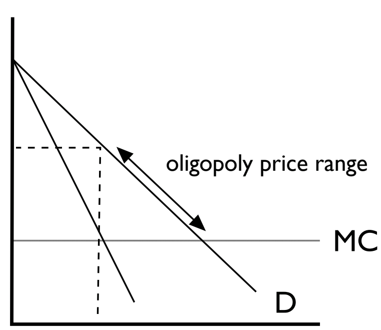
Problem Set 9 Answers

1. *Packages_a.*

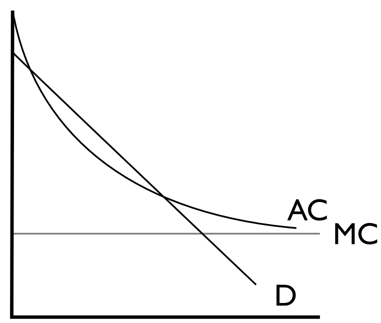
   (a) Firms of type 1 earn zero economic profit (a.k.a. normal profit) while firms of type 2 earn a rent. All firms would switch to type 2 if they could, but if the technology for being type 2 is not reproducible, those firms that have it will earn a Ricardian rent.

   (b) An oligopoly will result in a price somewhere between the monopoly price at the most and price equals marginal cost at the least. We expect that the more firms there are, the lower the price will be all other things equal.

   (c) Since the marginal cost curve never rises, nothing every pulls up the average cost curve. Instead, AC falls as the fixed costs are spread over ever-larger quantities and it asymptotes to marginal cost. Because of this, it is always arguably cheaper to have one firm produce all the output rather than split it between multiple firms, and this can be the basis for a normative argument that the industry is a natural monopoly. However, as a positive matter, there are at least two major package delivery companies, not to mention the postal service and smaller competitors like DHL, so this is clearly not a positive natural monopoly.



(d) Since local delivery is necessary to make the delivery service useful, only long-distance transport firms with access to local delivery have a useful product to sell. Thus, one might worry that the local delivery firm will foreclose access to local delivery to the competing long-distance transport firms, monopolizing that industry as well.

That said, since the local delivery firm already has a monopoly on local delivery and can (presumably) already charge monopoly prices, it is not entirely clear why it would practice foreclosure. Perhaps there is "more than one monopoly" present – for example some delivery customers may be so big that they do not need local delivery services and take long-distance shipments directly. In that case, the vertically-integrating firm might be able to monopolize that market as well by driving all the other long-distance transport companies out of business via foreclosure.

(e) Since local delivery was assumed to be the least competitive segment, the vertically integrated firm could previously receive some protection from tough competition, either through economies of scope or through raising rivals' costs of procurring local delivery. The new drone service is apparently so much better that everyone uses it, with the result that the vertically-integrated firm no longer has any protection and must engage in tougher competition with the other warehouses.

    On the other hand, the new service is a complement to warehousing, so it makes the warehouse's products more desireable to consumers. This demand-expansion effect could be large enough to overwhelm the tougher competition effect, so we can't be sure whether the warehouse is better or worse off after the change. We can be sure that the consumer is better off unless things get so bad that the warehouse goes out of business.