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The Animated Hotelling Model

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Abstract

The Hotelling model is used to illustrate the effects of product differentiation on market outcomes. After introducing the model, we create a demand function for the product and examine the socially optimal amount and scope of variety. We then examine how monopoly and competitive market structures result in too much or too little variety. Finally, extensions of the model are discussed. This presentation uses animation components in both Powerpoint and Flash to illustrate changes in prices and location.

KEYWORDS: Hotelling, product differentiation, vertical differentiation, variety

“The Animated Hotelling Model” is a Macro-enabled Powerpoint Presentation that uses animation tools in PPT and Flash to bring the Hotelling model to life for students.

This presentation differs from most textbook presentations in a few important areas:

1. The information presented in the Hotelling model is used to create a demand function for the product, making it something familiar for students to use to solve for the profit-maximizing price and output in a market.
2. The information is presented in a more realistic example. Instead of a town being fixed to one mile, we allow for flexibility in both the length of the town and the density of consumers per mile, and examine the implications of changing these.

Here is a brief overview of the presentation:

1. Introduction to the Hotelling model and its assumptions
 - A. Graphing the model
 - B. Simple numerical example showing consumer surplus and revenues
 - C. Generating a demand curve from the Hotelling model
 - D. Solving for the profit-maximizing level of P and Q for one firm
2. Social Optimum
 - A. Optimal locations of stores
 - B. Optimal number of stores
 - C. Examining how changes in model parameters affects the social optimum
3. Monopoly
 - A. Profit-maximization for 1 store
 - B. Optimal number of stores for a monopolist
4. Competition
 - A. Competition in location with fixed prices
 - B. Competition in prices with fixed locations
 - C. Competition in both prices and locations
 - D. Implications of changing the assumptions of the Hotelling model
 - E. Extensions of the Hotelling model

Getting Started:

1. Download the Powerpoint file and Flash (.swf) files into the same folder; if the Flash files are not in the same folder, they will not play.
2. When opening the file, you will see the following notice just below the ribbon: “Security Warning. Some active content has been disabled,” followed by an Options button. Click on the Options button, select “Enable this content” and click OK.
3. If viewing the slideshow first before presenting it, be sure to follow the instructions on the first slide (when presenting) to reset the Flash animations to their starting positions.
4. Information for the presenter is included in the Notes pane below each slide. You may want to print the presentation using the “Print slides with notes” option to review them first, as they contain additional material about real-world examples that will be useful when giving the presentation.