

The Ohio State University
Max M. Fisher College of Business

MBA 842 Product Management Strategy

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Homework #5

The file [hw5-1](#) contains product diffusion data in an Excel spreadsheet. The "Common start date" worksheet contains cumulative sales information (Y_t) for a variety of product categories. The data has been normalized so the $m=1.0$, and assume that each of the series begins in year 5, so that sales for each year ($S_t = Y_t - Y_{t-1}$) begins in year 6. Conduct the following for three product categories of your choice:

1. Inspect the plots for the different data series and identify series for which you expect to get reasonable regression estimates – e.g., don't pick series with a small number of observations.
2. Construct the series for analysis: S_t , Y_{t-1} and Y_{t-1}^2 .
3. Regress S_t on Y_{t-1} and Y_{t-1}^2 and obtain regression coefficients.
4. Solve for diffusion parameters p and q .
5. Suppose you had a budget to change p or q by 10%, but not both. Which would you change to accelerate the diffusion process over the first 10 years of the product's life? Use the [Analysis](#) file to help you answer this question.

Comment on the similarity or difference of your answer in (4) across product categories.