

Advanced Macroeconomics

2014/15 Winter term

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Tutorial 7a: Creative Destruction Models

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1. What is the demand function for the (many) firms competing in the consumption good sector? Find the alternative formulation for profits using the demand function: $\pi_y = (1 - \alpha)\gamma^t x^\alpha$.

Firms maximise profits, as the difference between production and purchase of the intermediate goods:

$$\pi_y = y - px$$

Where production takes the following Cobb-Douglas form –firms also use some other indivisible production factor that is normalised to 1, hence the simplified form below:

$$y = \gamma^t x^\alpha$$

2. What is the optimal price decision for the monopolist firm, controlling the intermediate good x ? (Use the result from above)

The monopolist maximises profits, the difference between income from sale of the intermediate product and the cost of producing using labour only:

$$\pi_x = px - wL$$

Where labour and technology, x , are connected by the following function showing technology as linear in labour:

$$x = L$$