

Advanced Macroeconomics

2014/15 Winter term

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Tutorial 5: Differentiated Goods

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1. What does the budget constraint mean?

$$\sum_{j=1}^n p_j c_j = w_j \equiv E$$

2. How do households behave optimally?

Where households have Dixit-Stiglitz preferences, over n varieties of goods and where θ represents tastes for different varieties with $0 < \theta < 1$:

$$\begin{aligned} \max_{c_j} U &= c_1^\theta + c_2^\theta + \dots + c_n^\theta = \sum_{j=1}^n c_j^\theta \\ \text{s.t.} \quad &\sum_{j=1}^n p_j c_j = w_j \equiv E \end{aligned}$$

3. How do firms behave optimally and what does monopolistic behaviour mean here? (*use the price elasticity of demand*)

Where the technology function is given as a function of labour only, with a the marginal cost of labour and ϕ are fixed costs:

$$x_j = al_j - \phi$$

While firms maximise profits, with w^L the wage rate:

$$\pi_j = p(x_j)x_j - w^L l_j$$

4. What is the elasticity of substitution between two goods, 1 and 2? (*use your result in 2.*)