

Market Definition of Platform Markets

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February 16, 2017

1 Model

1.0.1 Profit Maximization

$$p_i = \nu_a - \beta_a q_i - \theta q_j + d s_i \quad (1.1)$$

$$r_i = \nu_b - \beta_b s_i - \mu s_j + g q_i \quad (1.2)$$

$$\pi_i = (p_i - c_i) q_i + (r_i - f_i) s_i \quad (1.3)$$

$$\frac{\partial \pi_i}{\partial q_i} = \nu_a - 2\beta_a q_i - \theta q_j + (d + g) s_i - c_i \quad (1.4)$$

$$\frac{\partial \pi_i}{\partial s_i} = \nu_b - 2\beta_b s_i - \mu s_j + (d + g) q_i - f_i \quad (1.5)$$

$$q_i = (8\beta_a^2\beta_b f_i - 8\beta_a^2\beta_b n u_b - 4\beta_a^2 f_j \mu + 4\beta_a^2 \mu \nu_b + 4\beta_a \beta_b c_i d + 4\beta_a \beta_b c_i g - 4\beta_a \beta_b d \nu_a - 4\beta_a \beta_b g \nu_a - 2\beta_a c_j d \mu - 2\beta_a c_j g \mu - 2\beta_a d^2 f_i + 2\beta_a d^2 \nu_b - 4\beta_a d f_i g + 4\beta_a d g \nu_b + 2\beta_a d \mu \nu_a - 2\beta_a f_i g^2 + 2\beta_a g^2 \nu_b + 2\beta_a g \mu \nu_a - 2\beta_b c_j d \theta - 2\beta_b c_j g \theta + 2\beta_b d \nu_a \theta - 2\beta_b f_i \theta^2 + 2\beta_b g \nu_a \theta + 2\beta_b \nu_b \theta^2 - c_i d^3 - 3c_i d^2 g - 3c_i d g^2 + c_i d \mu \theta - c_i g^3 + c_i g \mu \theta + d^3 \nu_a - d^2 f_j \theta + 3d^2 g \nu_a + d^2 \nu_b \theta - 2d f_j g \theta + 3d g^2 \nu_a + 2d g \nu_b \theta - d \mu \nu_a \theta - f_j g^2 \theta + f_j \mu \theta^2 + g^3 \nu_a + g^2 \nu_b \theta - g \mu \nu_a \theta - \mu \nu_b \theta^2) / (16\beta_a^2\beta_b^2 - 4\beta_a^2\mu^2 - 8\beta_a\beta_b d^2 - 16\beta_a\beta_b d g - 8\beta_a\beta_b g^2 - 4\beta_b^2 \theta^2 + d^4 + 4d^3 g + 6d^2 g^2 - 2d^2 \mu \theta + 4d g^3 - 4d g \mu \theta + g^4 - 2g^2 \mu \theta + \mu u^2 \theta^2)$$