

Almost-Maximization as a Behavioral Theory of the Firm: Static, Dynamic and Evolutionary Perspectives

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Online appendix.



Herbert Simon believed that in many situations economic agents did not always optimise

Firms may settle for satisfactory outcomes instead

epsilon optimisation.

In order to make the examples in section 1.2 even more concrete, we can think of the explicit functional forms for cost and demand:

$$P = \max[1 - x, 0]$$

$$C = c.x$$

Where marginal cost is $c < 1$ so that the marginal cost at zero output is less than marginal revenue. In this case, we have:

$$U(x) = x.(1 - x) - c.x$$

$$\frac{dU}{dx} = 1 - (2 - c).x$$

$$\frac{d^2U}{dx} = -(2 - c)$$

Since $c < 1$, payoff is strictly concave, so that there exists a unique interior maximum:

$$x^* = \frac{1}{2 - c}$$

Since the payoff is quadratic, the second order Taylor expansion is exact, so that

$$U(x^*) - U(x') = \frac{2 - c}{2} (x' - x^*)^2$$

Hence we have

$$U(x^*) - U(x') < \varepsilon \Leftrightarrow |x^* - x'| < \frac{\sqrt{2\varepsilon}}{2 - c} = \kappa(\varepsilon)$$