2.2 : A Production Economy

The Model

Assumptions on the production $F(K)$:
i) $F(0) = 0$
ii) $F' > 0$ and $F'' < 0$ (increasing and concave)
iii) Inada conditions : $F'(0) = \infty$ and $F'(\infty) = 0$.

Investment in physical capital + production technology $\rightsquigarrow$ new actor in the economy : **a (representative) Firm**.
The firm can buy (or rent) the capital from the consumer at a price, denoted Q, per unit of capital and then can use it to produce extra output $F(K)$ in period 2.

The Firm's decision

The firm chooses optimally the level of K in period 2 such that she maximizes the profit :

$$\Pi = P_2 F(K) - QK$$