Derivation of the Long-Run Cost

A Schematic Look As to How Production Technology and Factor Market Condition Determines the Shape and Size of the Long-run Cost Function of A Competitive Firm

Production Technology:
- \( q = f(L, K) \)
- \( q = AL^\alpha K^\beta \)

Cost Minimization:
- Expansion path
- \( K^* = \beta/\alpha(w_e/r_e)L^* \)

Input Prices:
- \( (w_e, r_e) \)

Cost and Output:
- \( TC^* = w_eL^* + r_eK^* \)
- \( q^* = f(L^*, K^*) \)
- Expansion Path

Long-Run Cost Function:
- \( TC^* = f(q^*) \)