

Economics II

Firm behavior and supply shaping

Part I.

Theory of the firm, costs and revenues of the firm



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

The training program for operational competitiveness

Project Name: innovation master degree program of study faculty military leadershipu

Project registration number: CZ. 1.07/2.2.00/28.0326

Introduction

1 Technology choice

1.1 Background analysis of the firm

1.2 Technology choice

1.3 Production in the short run

1.4 Production in the long run

1.5 Technical progress

Introduction

2 Costs

2.1 Cost in the short run

2.2 Costs in the long run

2.3 Relationship between short-run and long-run costs

2.4 Influence of changes in the inputs prices to costs

Introduction

3 Revenues

3.1 Total revenue

3.2 Average revenue

3.3 Marginal revenue

1 Technology choice



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

The training program for operational competitiveness

Project Name: innovation master degree program of study faculty military leadershipu

Project registration number: CZ. 1.07/2.2.00/28.0326

Production in the short run

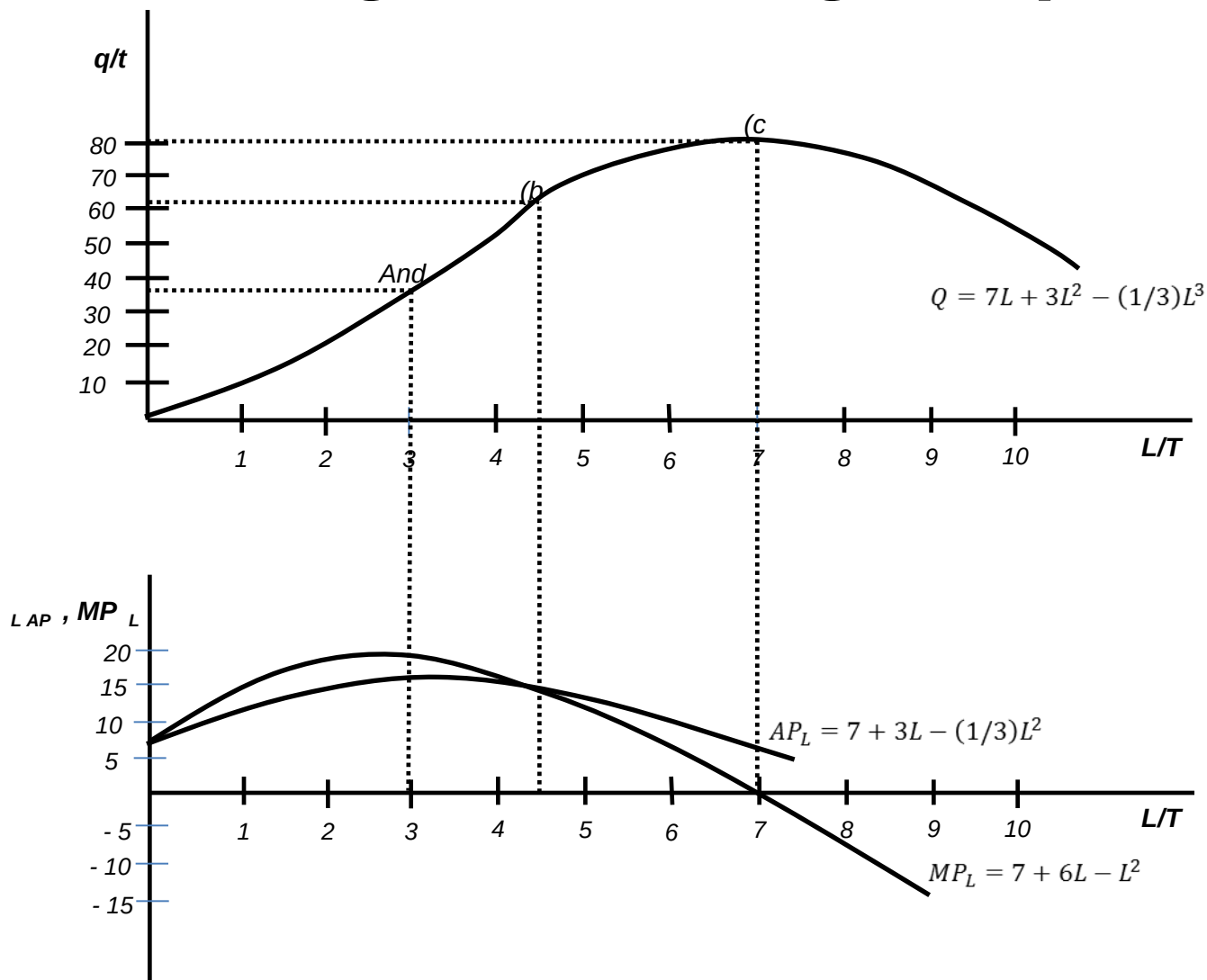
- **Total product - TP**

$$TP = (Q)$$

- **Average product - AP**

- **Marginal product - MP**

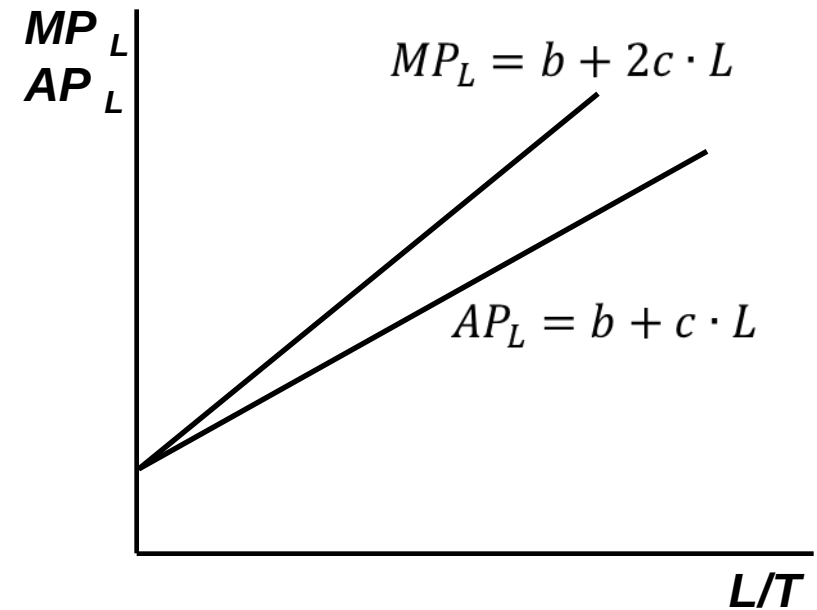
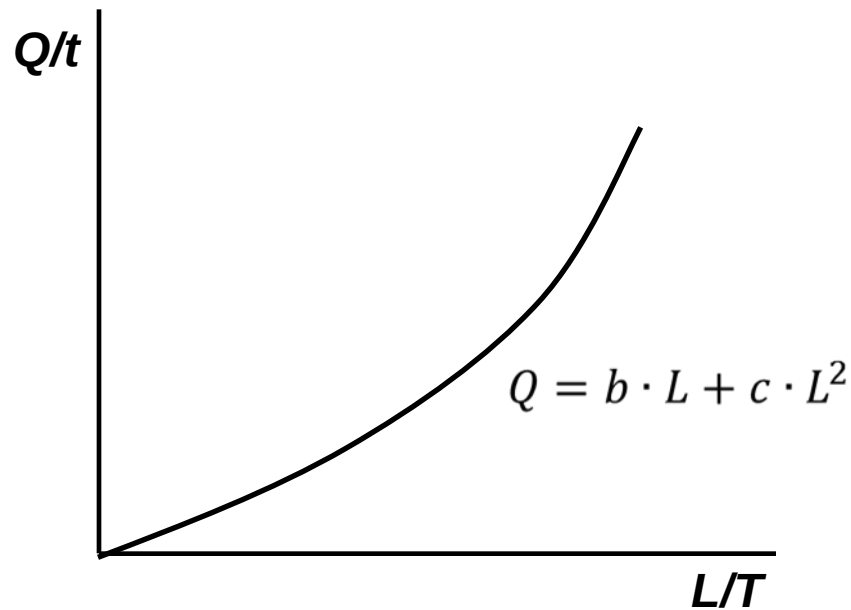
Total, average and marginal product



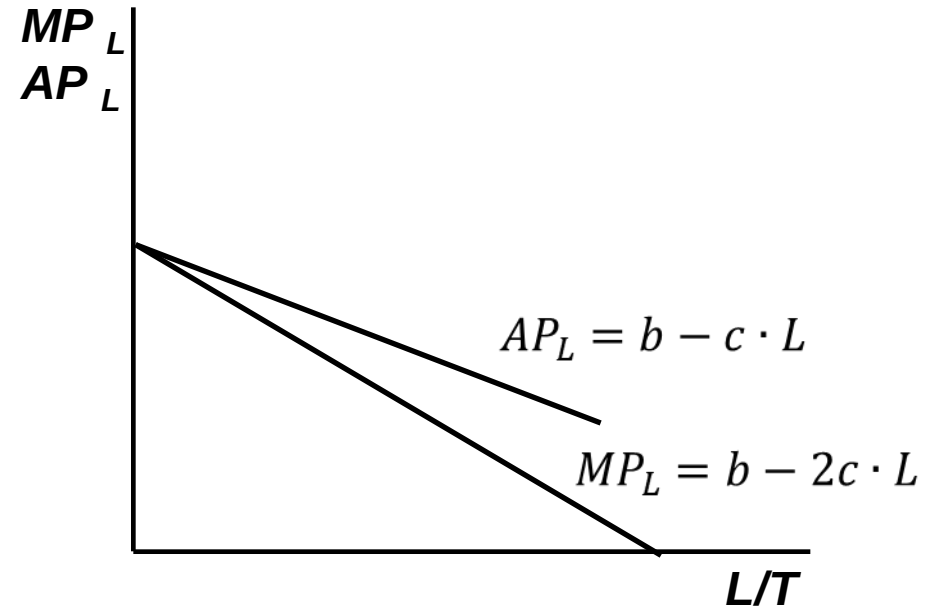
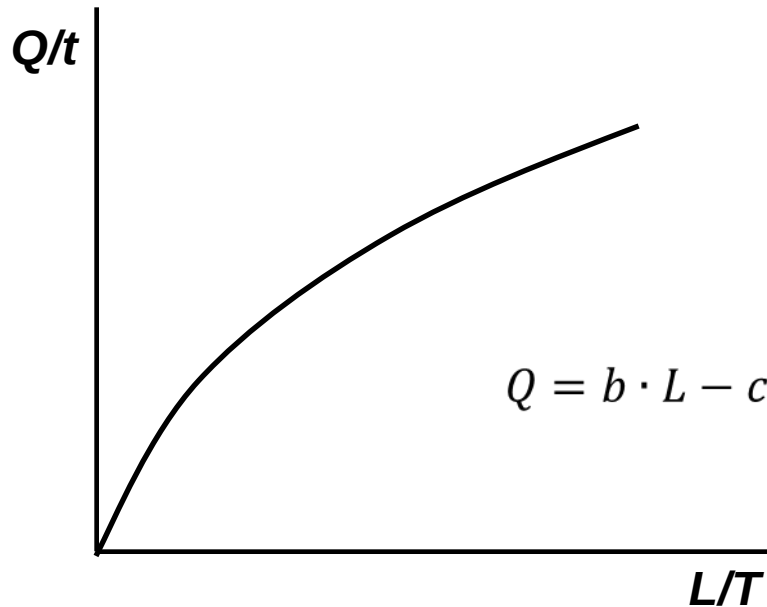
Production in the short run

- Law declining revenues
- Increasing revenues from variable input
- declining revenues from variable input
- Constant revenues from variable input

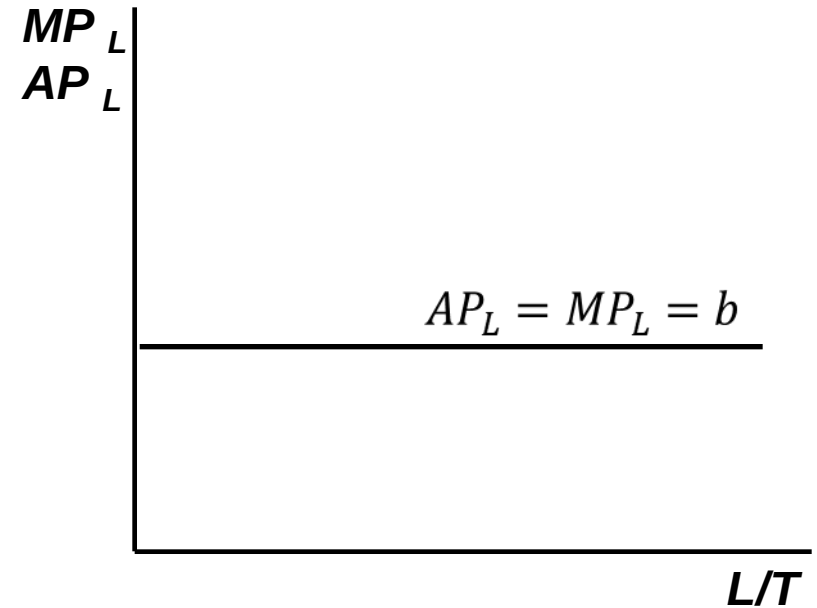
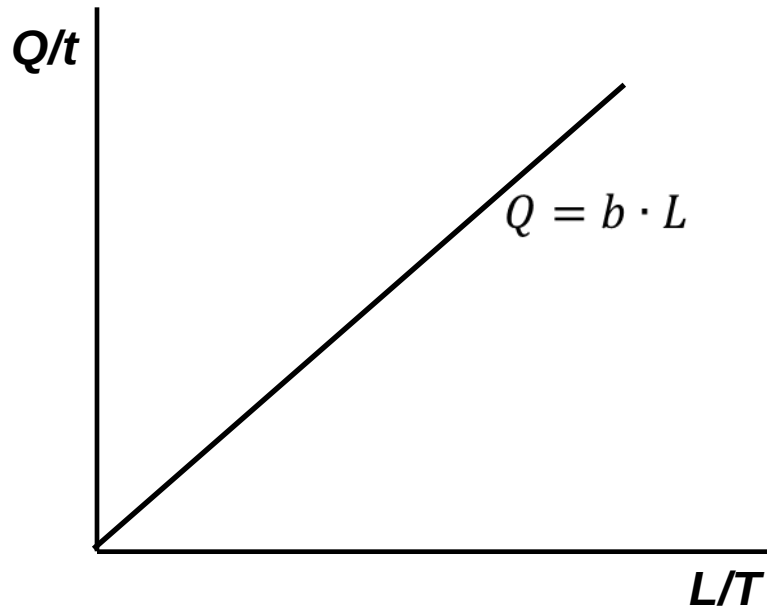
Increasing revenues



Declining revenues



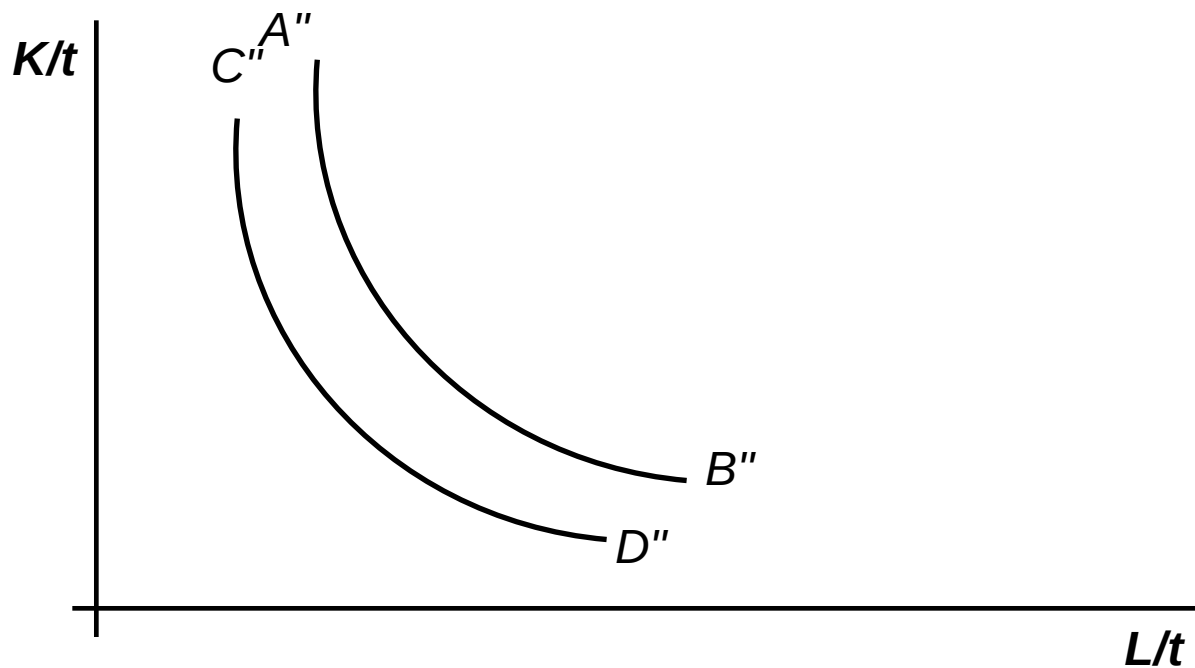
Constant revenues



Production in the long run

- Izokvant
- Izokvant map
- basic characteristics

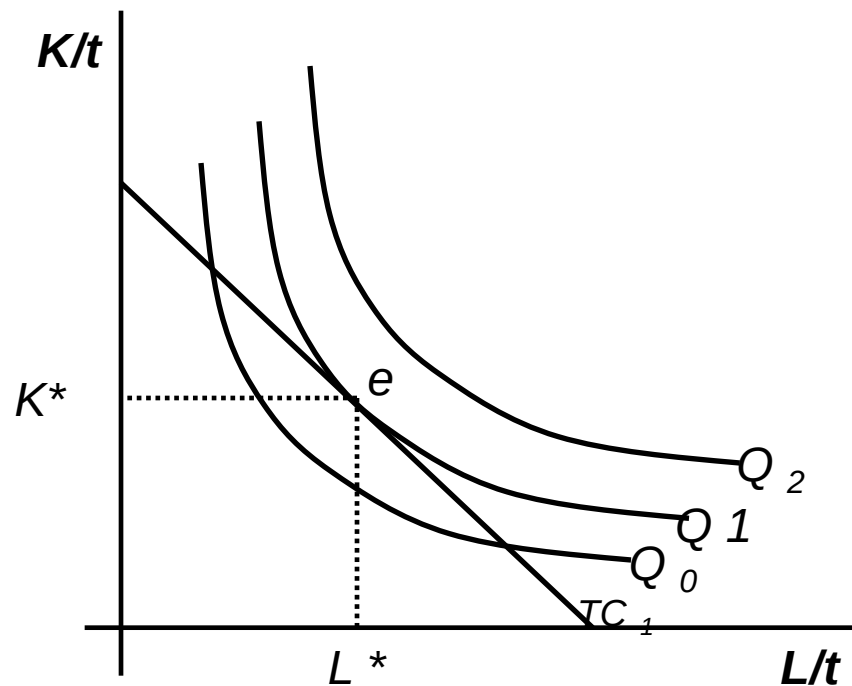
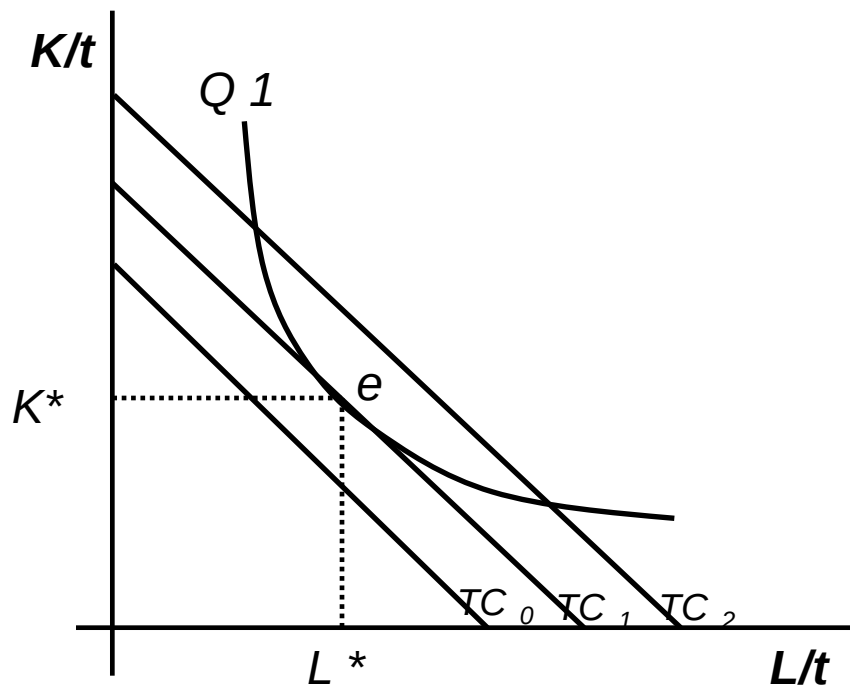
Production through izokvants



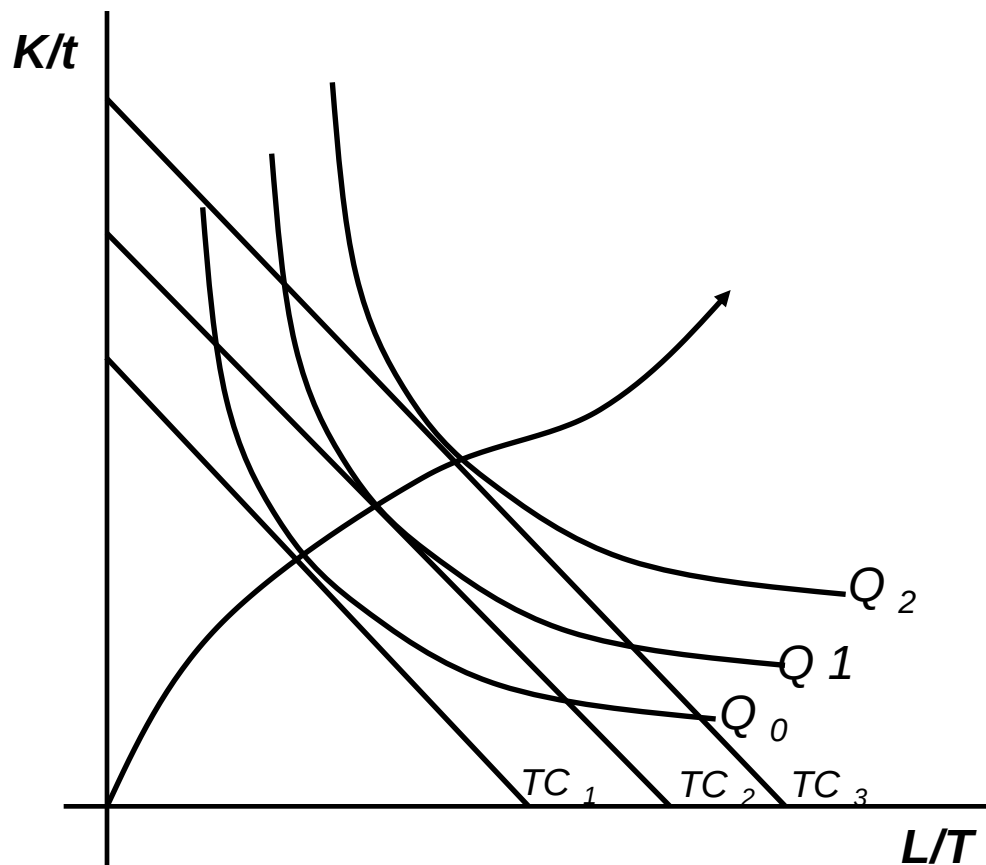
Cost optimum

$$MRTS = \frac{w}{r}$$

Cost optimum

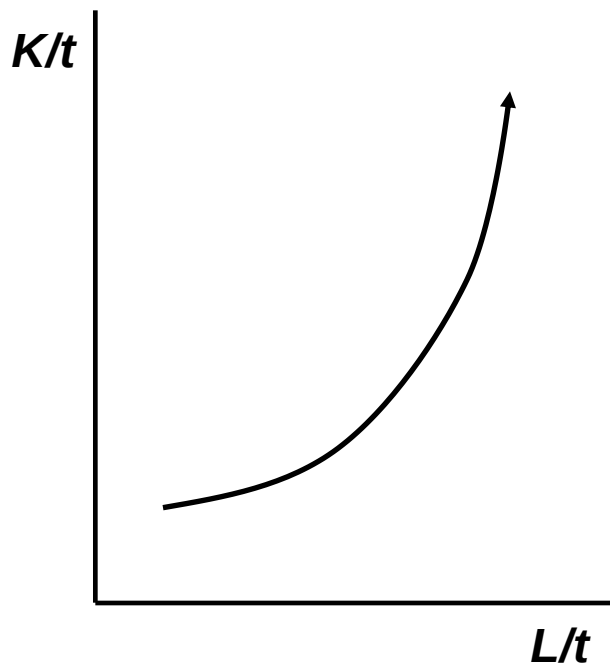


Curve of growing output

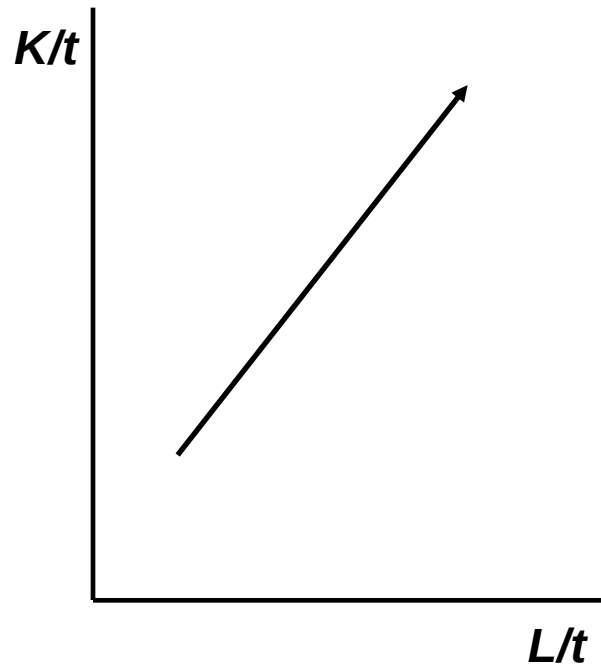


Alternative curve shapes

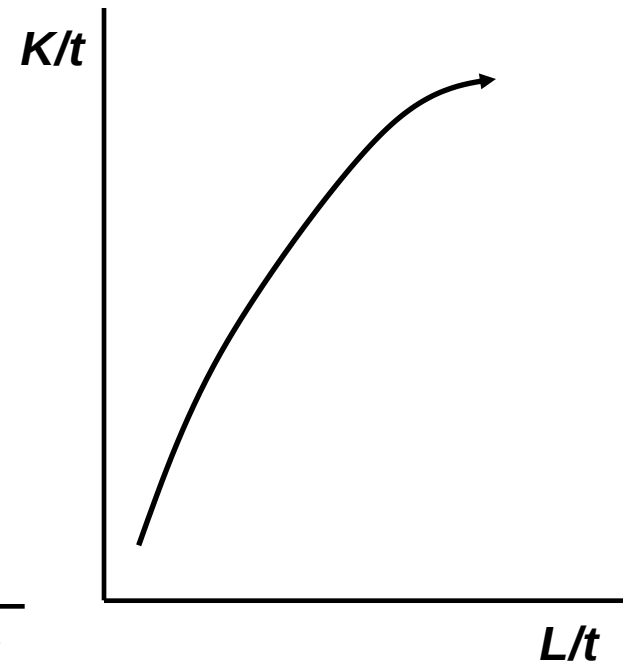
(a)

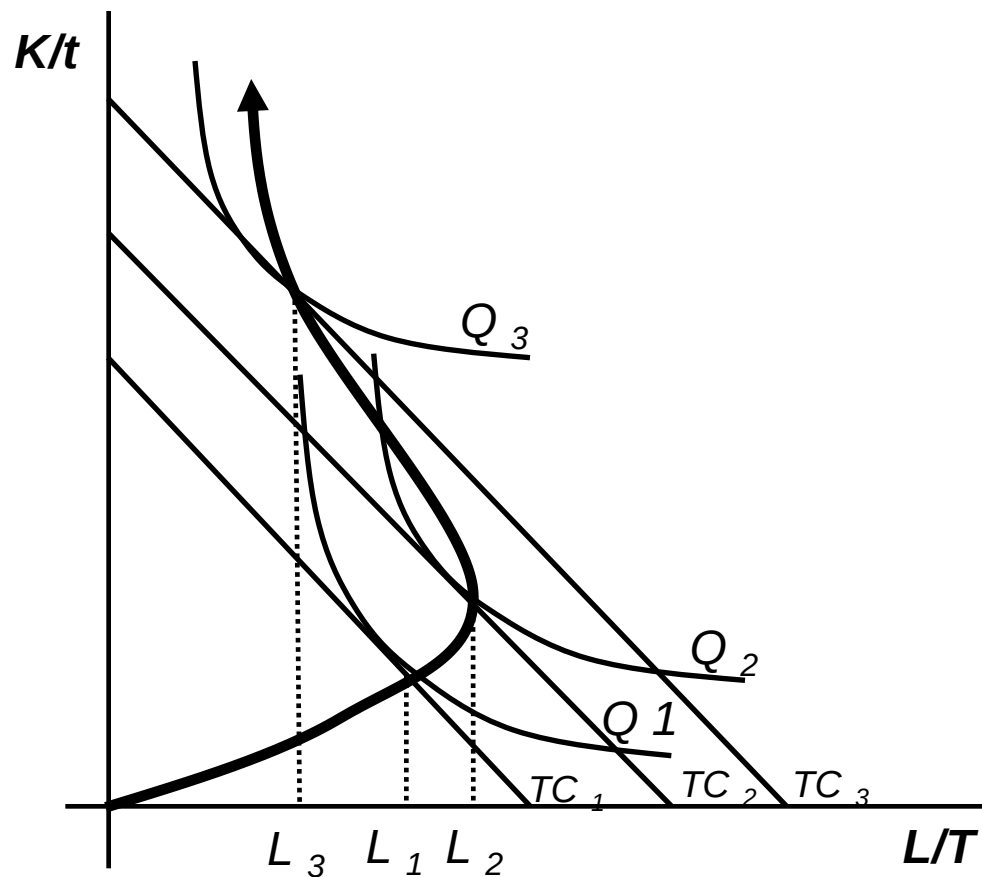


(b)



(c)





Returns to scale

- Constant returns to scale

$$F(T-k, T-l) = T \cdot F(k, l) = T \cdot Q$$

- increasing returns to scale

$$F(t-k, T-l) > T \cdot F(k, l) = T \cdot Q$$

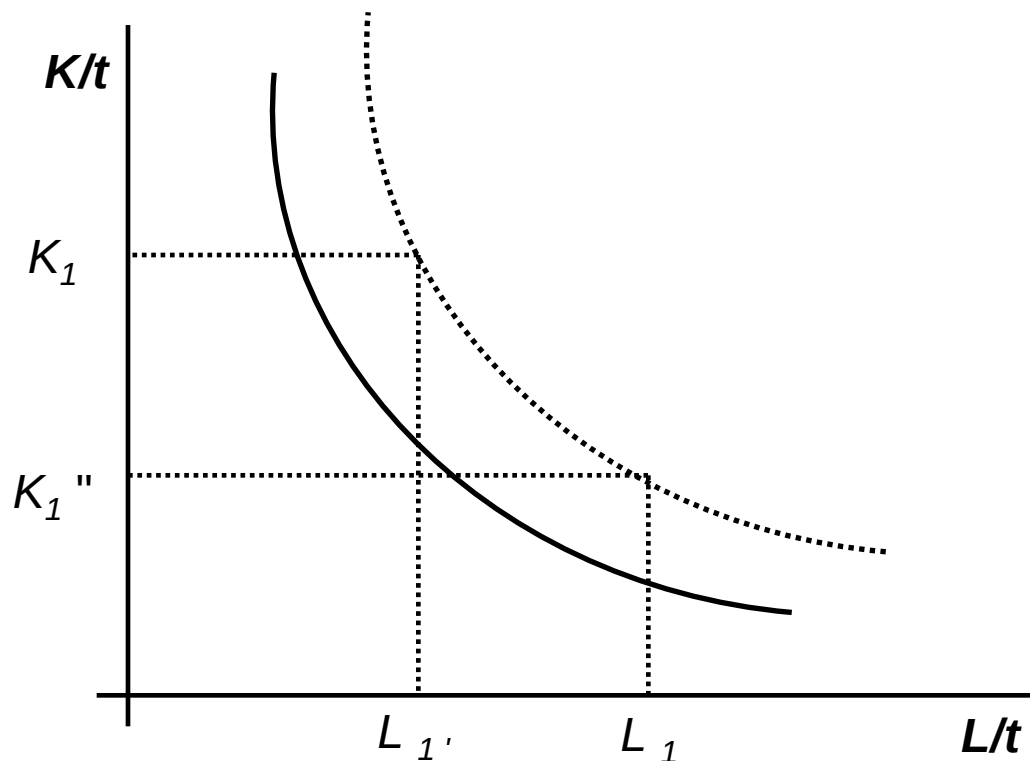
- Decreasing returns to scale

$$F(T-k, T-l) < T \cdot F(k, l) = T \cdot Q$$

Technical Progress

- *Neutral technological progress*
- *Capital intensive technological progress*
- *Labor intensive technological progress*

Technical Progress



2 Costs



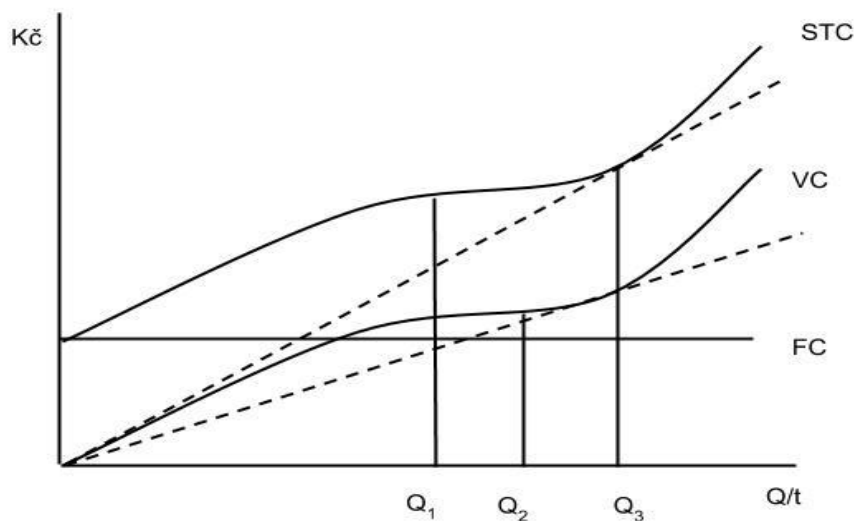
INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

The training program for operational competitiveness

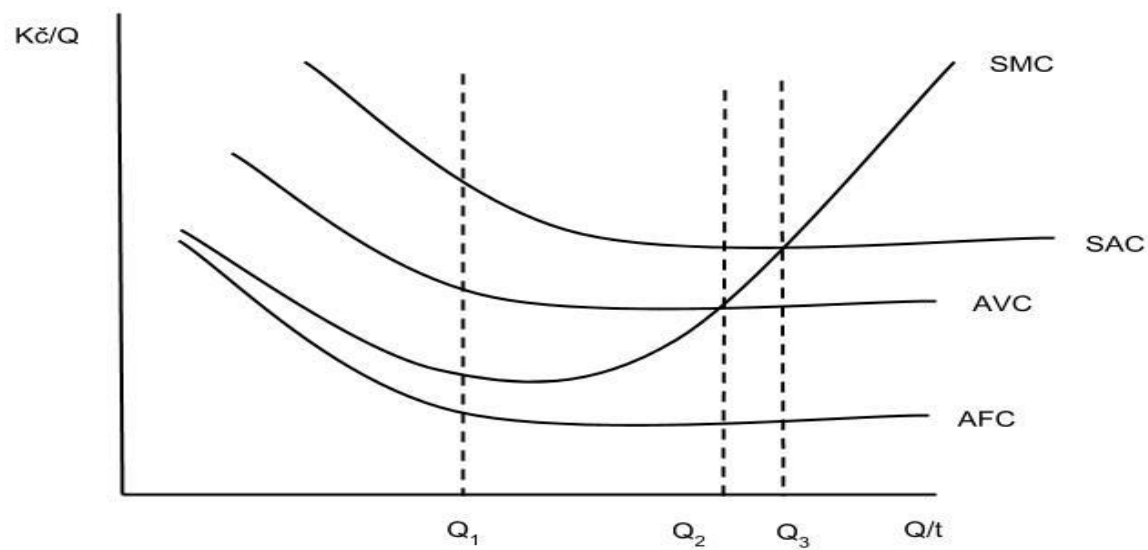
Project Name: innovation master degree program of study faculty military leadershipu

Project registration number: CZ. 1.07/2.2.00/28.0326

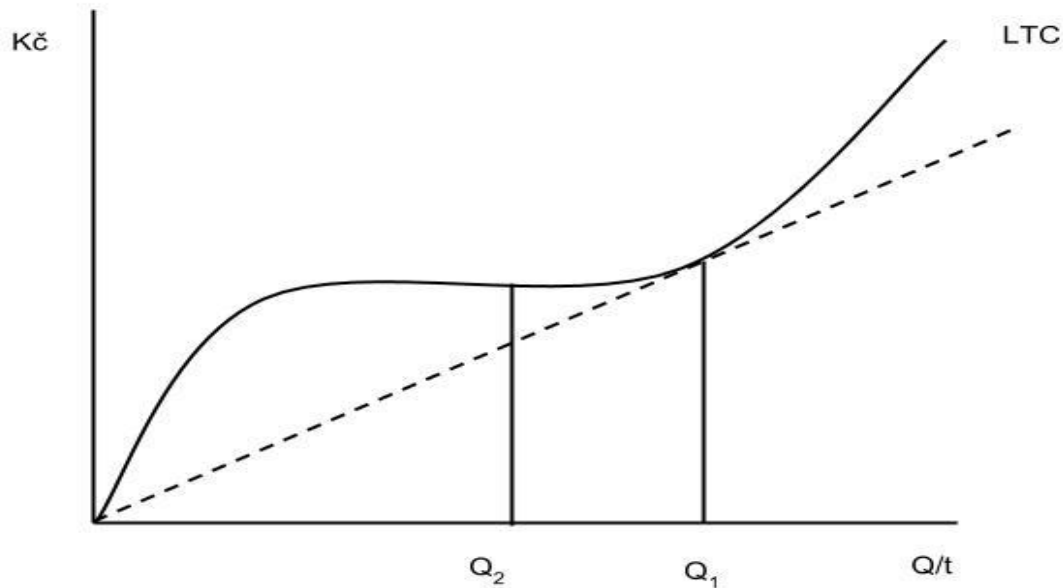
The total cost in the short run



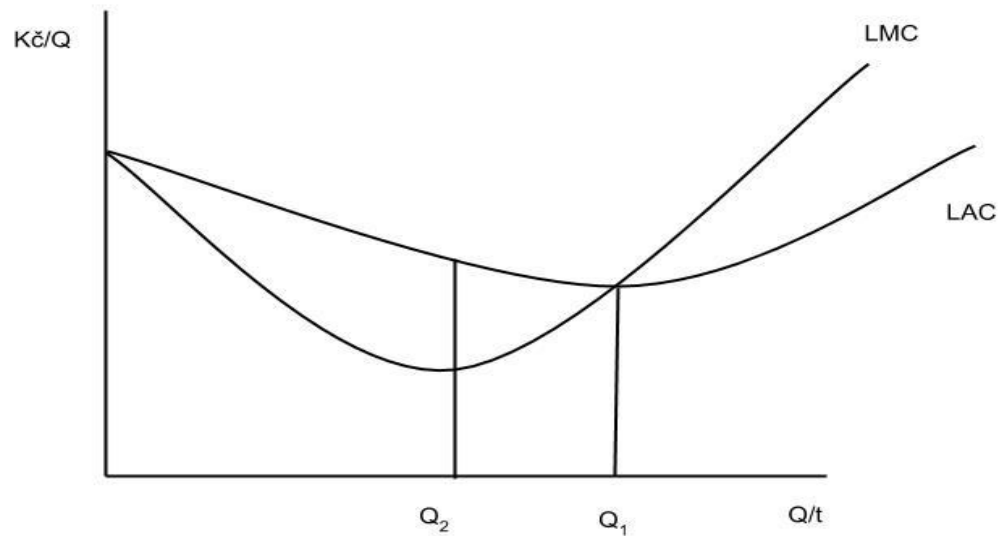
Unit costs in the short run



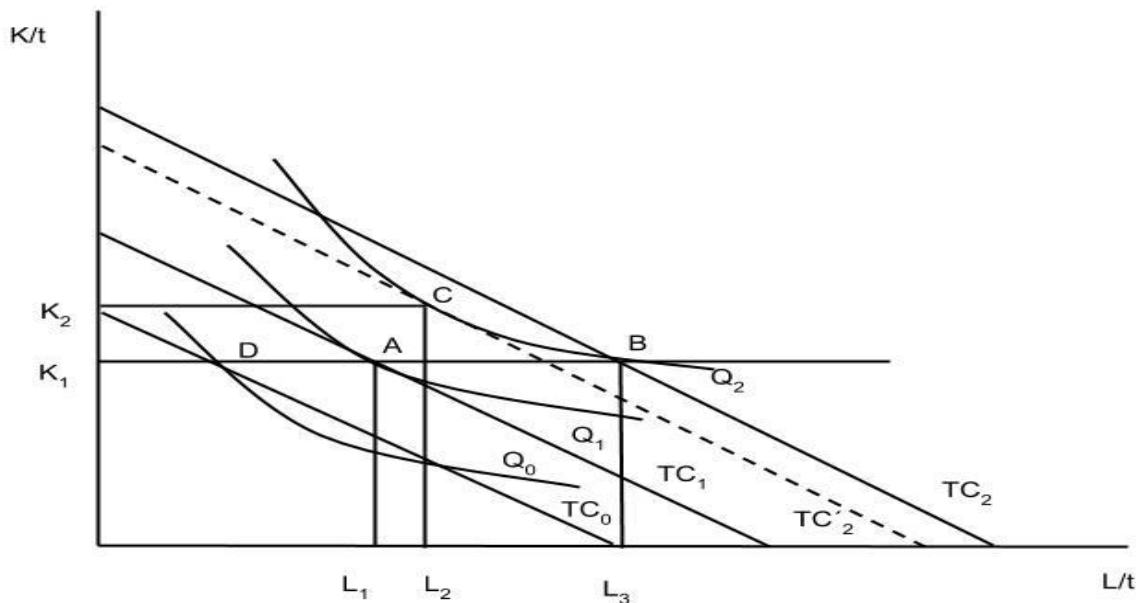
The total cost in the long run



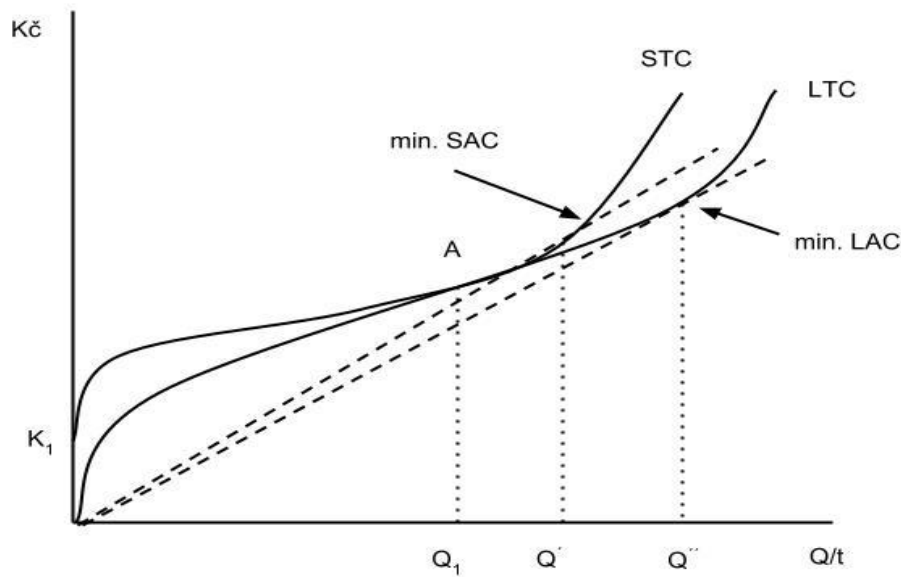
Unit costs in the long run



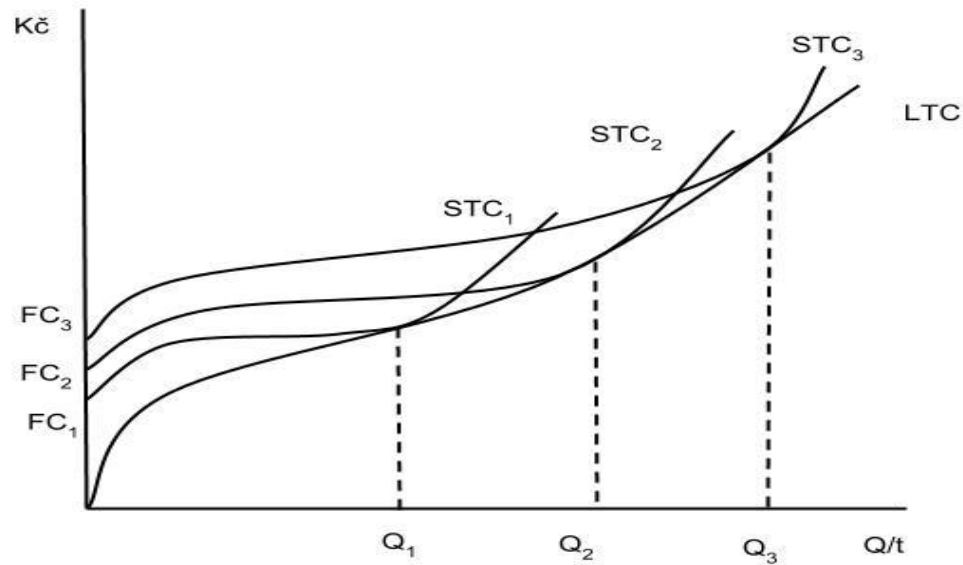
The differences in the cost of production of the same output in the short and long run

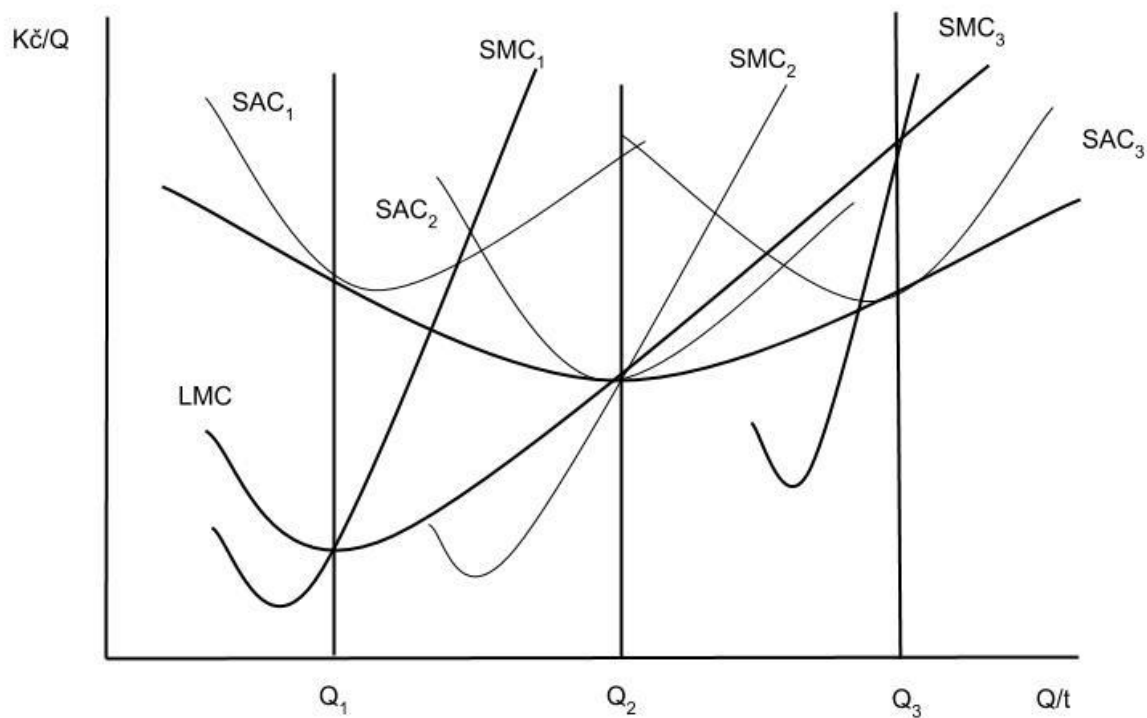


The total cost in the short and long run

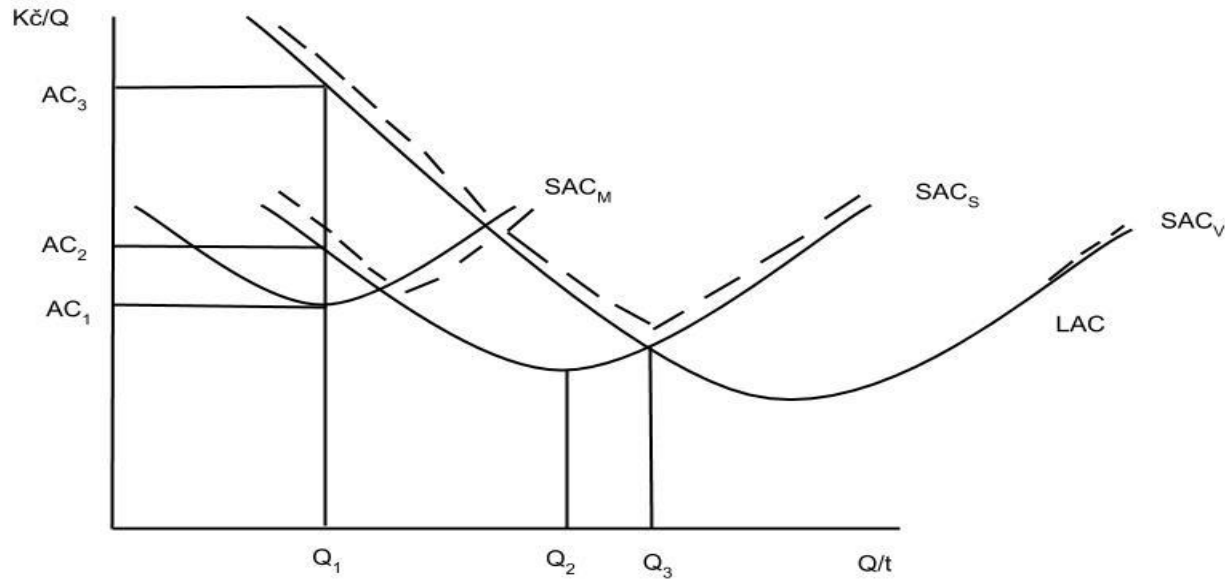


LTC and LAC curve

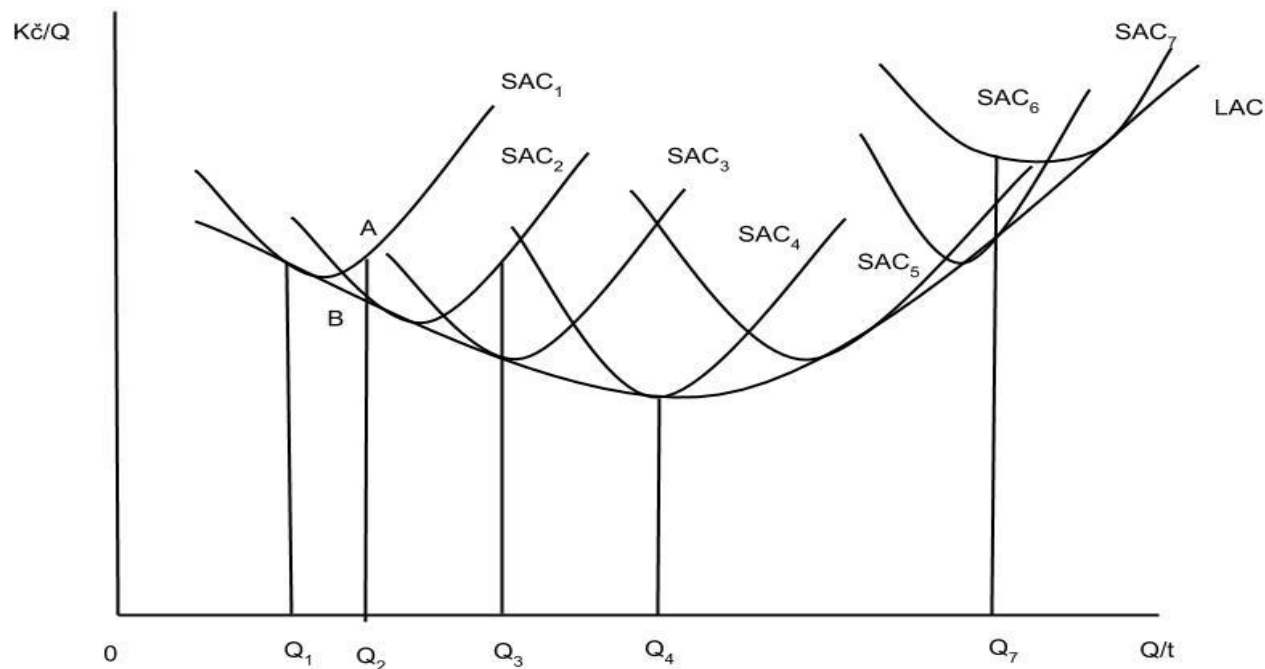




Three sizes factory



Large number of firms



3 Revenues



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

The training program for operational competitiveness

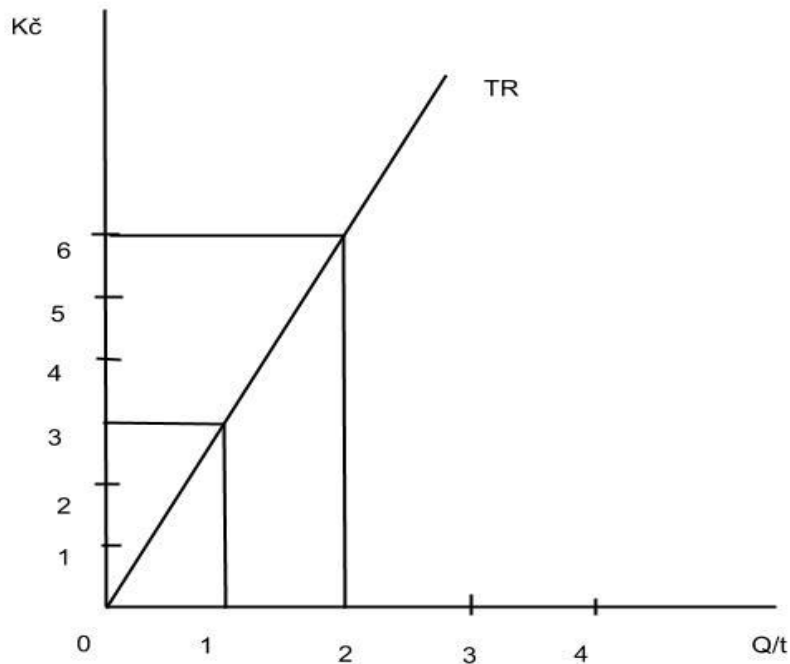
Project Name: innovation master degree program of study faculty military leadershipu

Project registration number: CZ. 1.07/2.2.00/28.0326

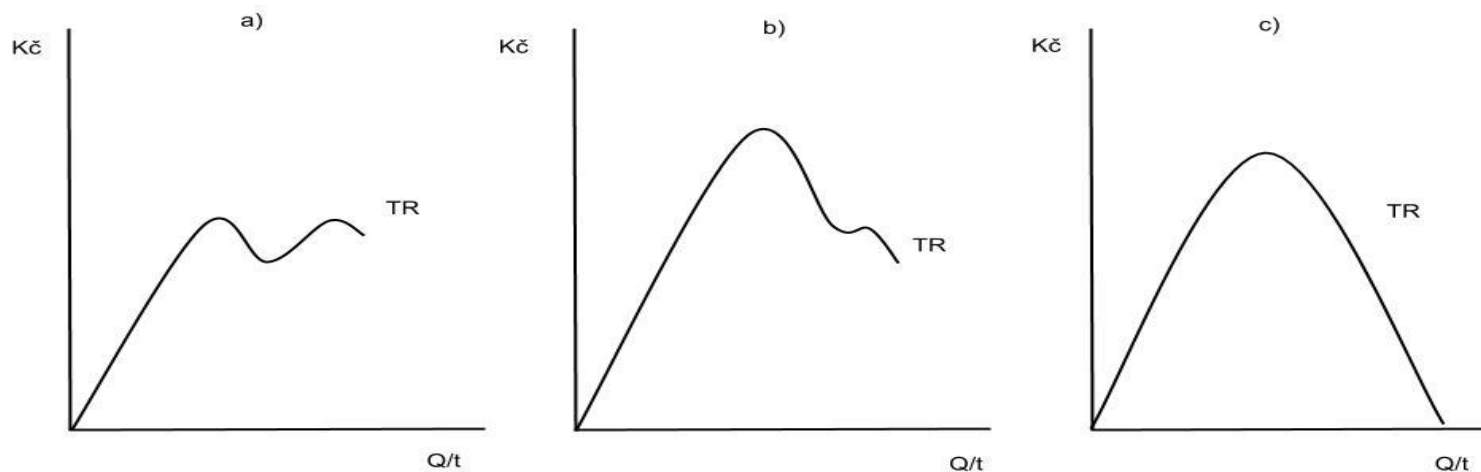
Total revenue

- $TR = P \times Q$
- Depends on the type competition

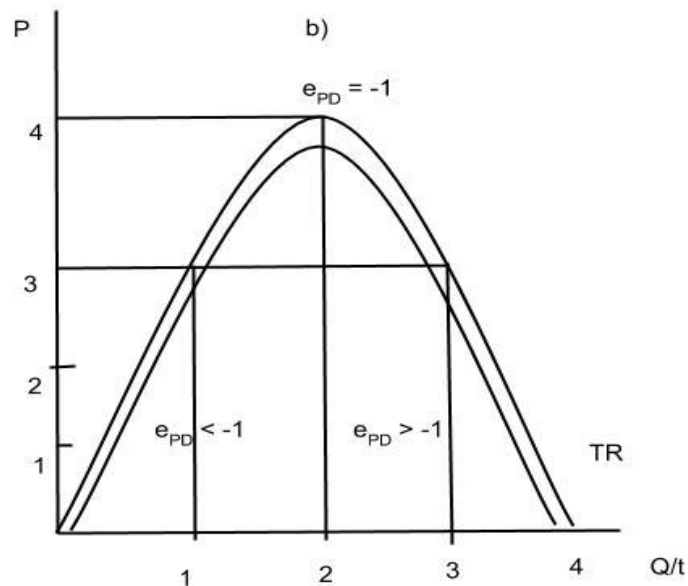
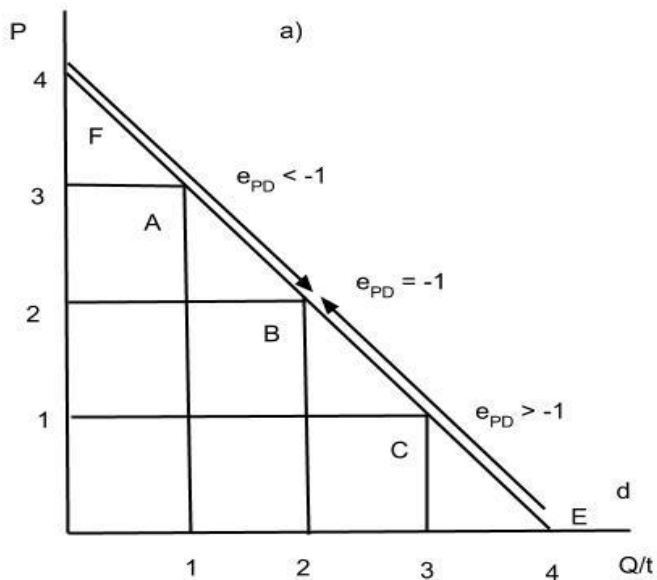
Total revenue in perfect competition



Total revenue function in imperfect competition



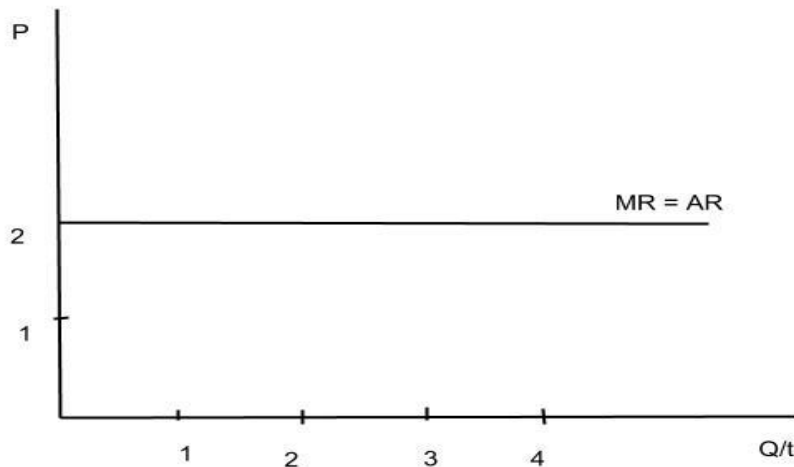
The relationship between price and demand



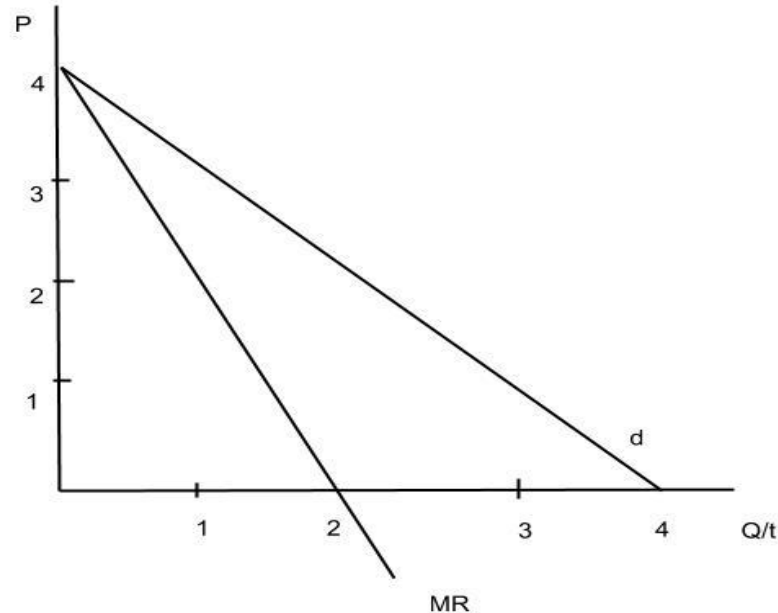
Marginal revenue

- $MR = \frac{dTR}{dQ}$

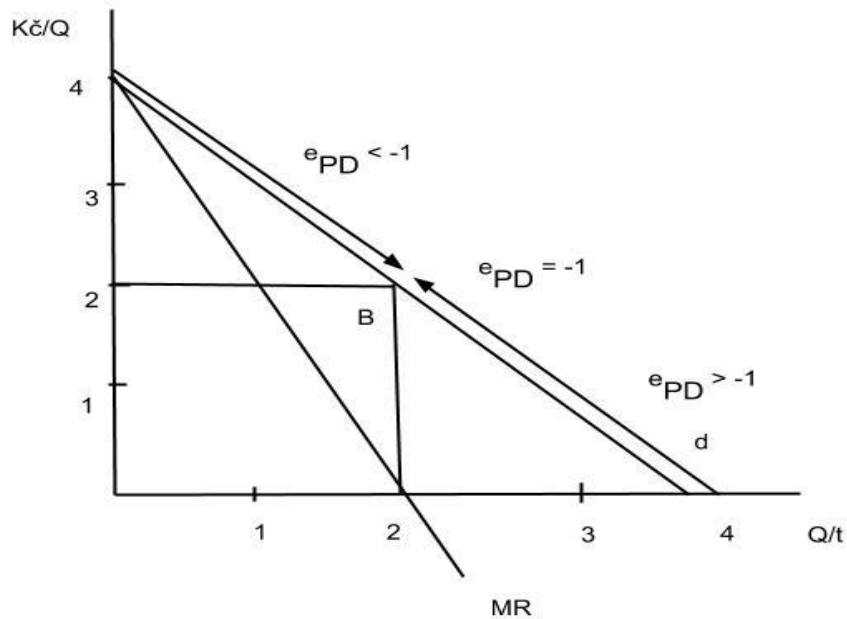
The average and marginal revenue in perfect competition



The average and marginal revenue in imperfect competition



Linear elasticity



Thank you for your attention



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ