

ECONOMICS OF EDUCATION

Sponsored by a Grant TÁMOP-4.1.2-08/2/A/KMR-2009-0041

Course Material Developed by Department of Economics,
Faculty of Social Sciences, Eötvös Loránd University Budapest (ELTE)

Department of Economics, Eötvös Loránd University Budapest

Institute of Economics, Hungarian Academy of Sciences

Balassi Kiadó, Budapest



Author: Júlia Varga
Supervised by Júlia Varga

June 2011

Week 2

Human capital

Investment decisions by firms

Types of on the job training

Marginal productivity of trainees increases:

in all (many) firms → general training

only in the firm providing the training → specific training

$$MP_t = W_t$$

'n' number of periods the trainee meant to be employed in the firm

training period: initial (0) period, non-training periods: n-1

On the job training

$$MP_0 + \sum_{t=1}^{n-1} \frac{MP_t}{(1+i)^t} = W_0 + k + \sum_{t=1}^{n-1} \frac{W_t}{(1+i)^t}$$

Returns to firm training labour

Costs to firm training labour

k = direct costs of training

$$MP_0 + \sum_{t=1}^{n-1} \frac{MP_t}{(1+i)^t} = W_0 + k + \sum_{t=1}^{n-1} \frac{W_t}{(1+i)^t}$$

$$\sum_{t=1}^{n-1} \frac{MP_t - W_t}{(1+i)^t} = G$$

$$MP_0 + G = W_0 + k$$

$$MP_0 + G = W_0 + k$$

Indirect costs of training: the difference between what could have been produced **MP'**₀ and what is produced (**MP**₀):

$$MP_0 - MP'_0$$

$$C = k + (MP'_0 - MP_0)$$

$$MP'_0 + G = W_0 + C$$

General training

$$MP'_0 + G = W_0 + C$$

$$G=0 \rightarrow \sum_{t=1}^{n-1} \frac{MP_t - W_t}{(1+i)^t} = G$$

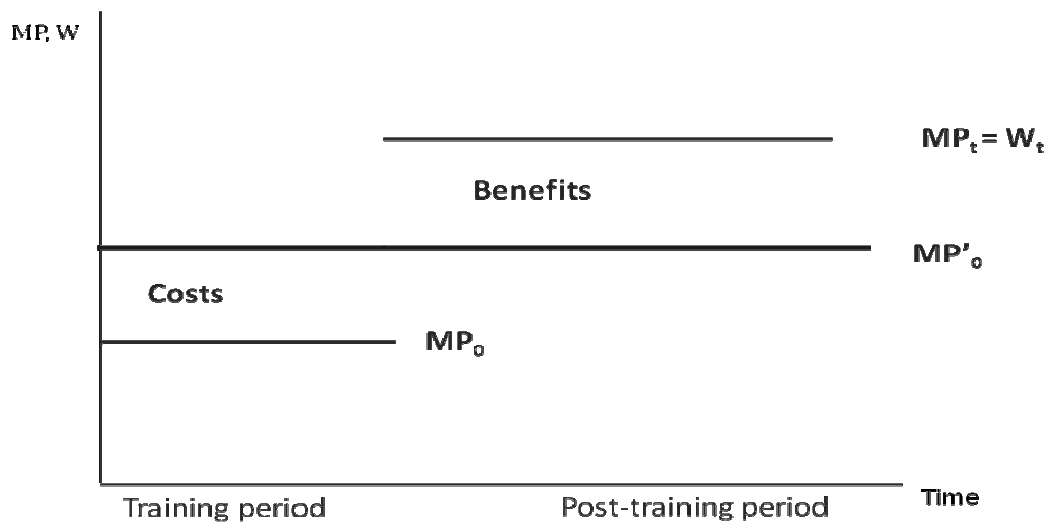
$$MP'_0 = W_0 + C,$$

$$MP'_0 = (MP'_0 - MP_0) + k$$

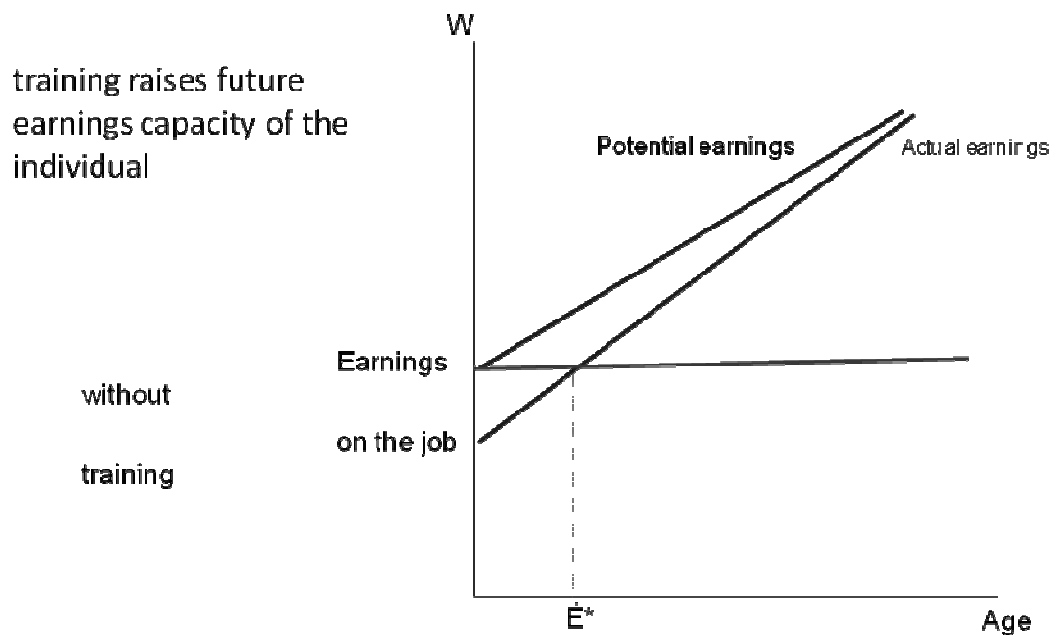
$$W_0 = MP_0 - k$$

Employees pay for general training by receiving wages below their (opportunity) productivity by the total cost of training.

General training – firms could not capture any of the return



General training – employees pay for general on the job training

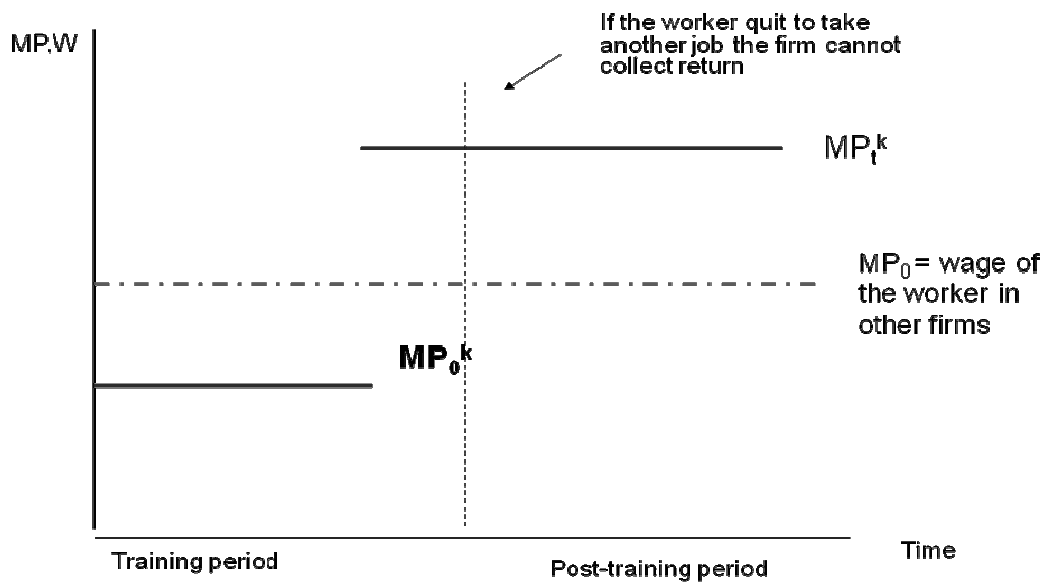
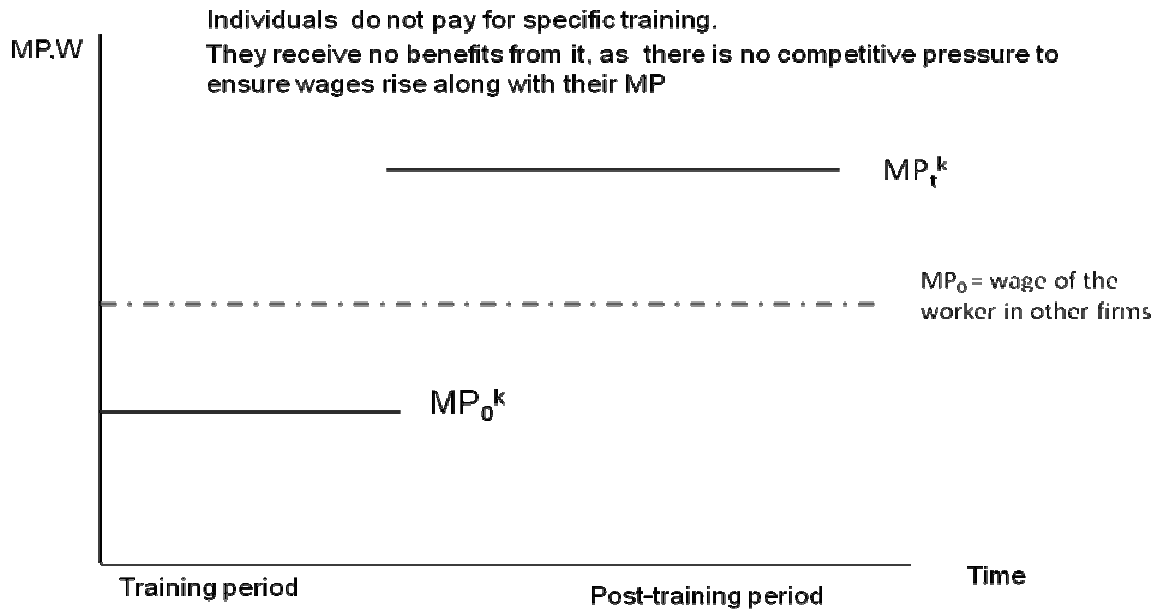


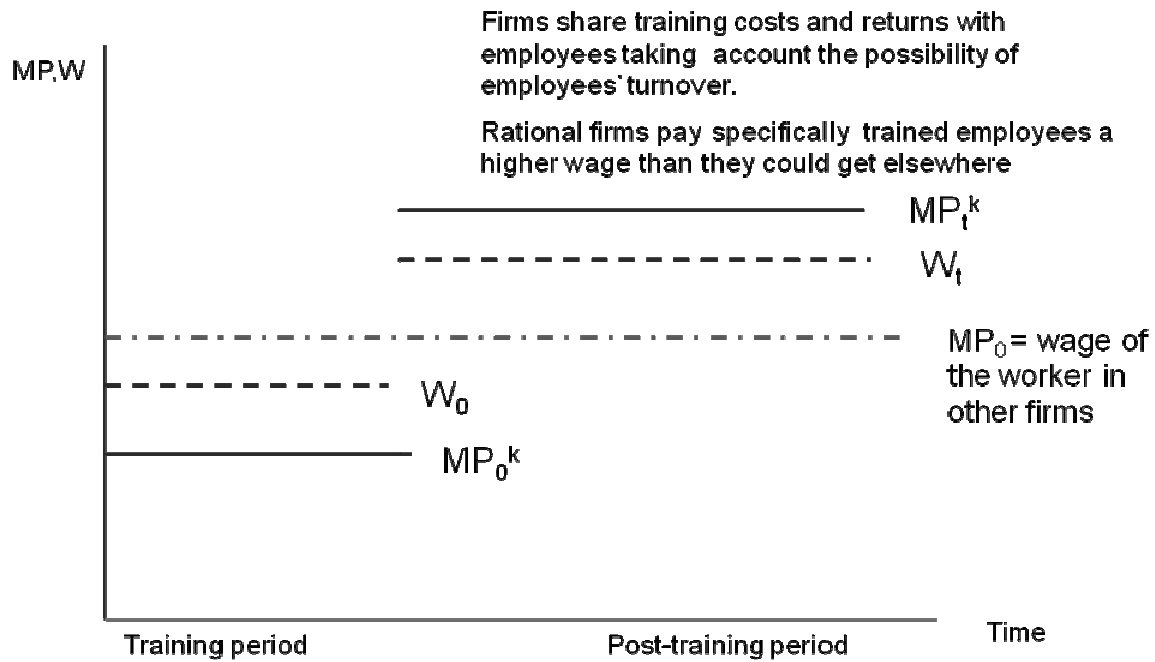
Firm – specific training

Marginal productivity of the employee:

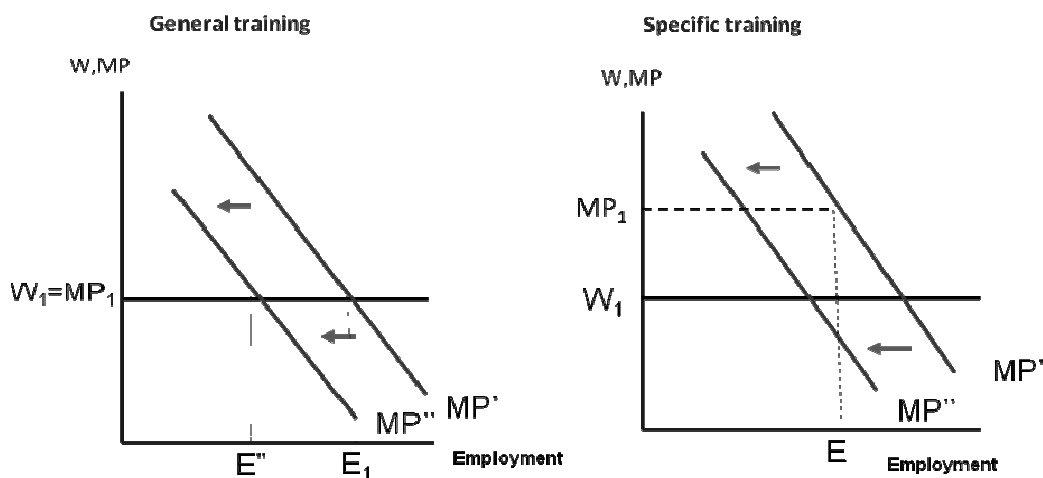
- without on the job training: MP_0
- after training, in the firm providing training: MP_t^k
- after training, in other firms: MP_0
- during training: $MP_0^k < MP_0$

Specific training





The effect of a decline in demand on employment with general and specific training



A decline in MP will reduce employment for those whose real wage = MP' initially, but will not necessarily reduce employment for those whose real wage < MP' initially