

INVESTMENT IN TRAINING: PRODUCTIVITY AND HUMAN CAPITAL VALUE

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Abstract

The aim of the paper is to illustrate importance of investment into employees' training on the evidence from EU countries and the Czech Republic and its effects on their productivity and increase of human capital value. As Becker (1993) points out, many workers increase their productivity by learning new skills and perfecting old once while on the job. This investment can be very profitable however also risky because this value leaves a firm in case an employee decides to leave a job. Trained employees represent a competitive advantage for a firm however it is very important to invest in it effectively. Ineffective education and training can cause skills or education mismatch. Importance of training is presented and evaluated on secondary data from Eurostat as well as primary data collected between part-time student of the Faculty of Economics in Liberec and selected Czech companies. Results are analysed based on human capital theory as well as other alternative approaches are mentioned.

Key words: training, qualification increase, human capital, skill mismatch.

JEL Code: J01, J24, J31

Introduction

It is possible to distinguish human capital in a company and in a wider social context. Higher investments, the scale and modernity of human capital in the firm deliver an annuity, which is shared between a company and an employee and which is somehow a dividend then. A company is interested in specific human capital. Therefore, those who belong to it are first being promoted, and if there are layoffs, they are on the last row. An advanced human capital is an important competitive differential for the company. The company, however, has to reshuffle its business and managerial activities that this competitive advantage could be appropriately used. Human capital formation is linked to overall company strategy. Human capital along with structural capital forms covered by a term intellectual capital along with

financial capital creates the overall value of the company. It is perceived as a combination of tangible, universal capital (i.e. financial capital) and intangible elements in the form of intellectual capital.

Developing human capital is related to a need of companies to develop knowledge and skills of their employees. Staff training is a form of education, which, however, differs from formal education by directly connection with the work tasks and needs. It brings therefore returns for both, individuals and directly for the company. The benefit of this training is primarily economical. The training itself is a process, which consists of a series of individual steps that lead to the improved performance (Belcourt, Wright, 1998).

1 Forms of training

Depending on the job as well as on skill's needed, an employer can provide to employees both on the job and off the job training. On the job training of a less formal nature is likely to occur in all types of firms since it takes place while workers are actually on the job. It is usually connected with lower costs and using an advantage of practising of skill in working process. Methods use for off the job training is usually more formal, more often provided by external supplier and connected with higher costs. In general, on the job training is common mainly with workers however it has become popular approach also for office workers nowadays. No matter which method is used for an employer it is important that an employee increases level of skills or knowledge required for his/her job position. However the employer always bears a risk that this employee might leave a company and especially in case he/she gains a general training his/her increased value of human capital can easily be used in other firm.

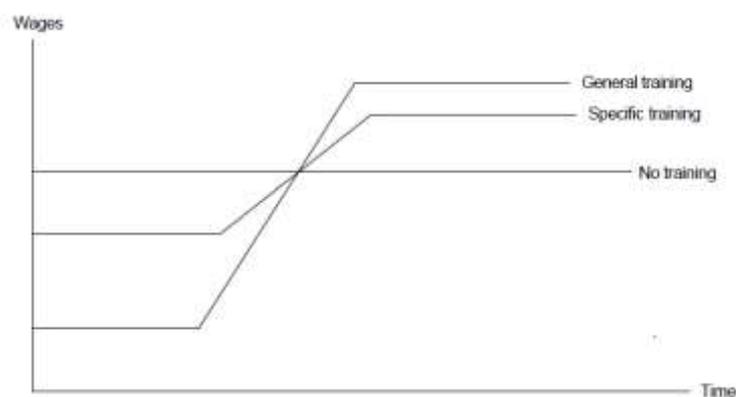
General and specific training

General human capital involves skills that are of equal value in many different organizations. An example might be learning a widely used word processing program. Specific human capital involves skills that are of value only to a single employer, either because they are a monopolist (the only employer of that type of worker) or because of special methods, routines and equipment with which workers must become familiar (Becker,1975).

General and specific training are really two ends of a continuum either than alternatives. In most cases a new worker simultaneously acquires some general skills and some that are specific to the firm. Despite our inability to separate the two types of training, the distinction is important for several reasons. It points out that the supply of skill may consist of components not generally useful in the economy as a whole. Firm-specific training

provides a reason for different patterns of worker attachment to employers by age, industry and occupation. It also has implications for the pattern of wage difference among workers. The relation of them illustrates the Figure 1. (Filer, Hamermesh, 1996).

Fig. 1: Current and Expected Gross Average Wages



Source: Harley, J. F. & Spletzer, J. R., 2005

1.1 Labour Code and Investment in Education and Training

Official ways of sharing costs for education and training of employees are defined in a legislative background. There is no doubt that according to theory of human capital investment in education and training brings benefits not only for individuals, but also for employers and the whole society (see e.g. Becker, 1993, Psacharopoulos, 1995). There are different ways of increasing of human capital level. Individuals can study in formal education or improve skills within on the job and off the job training. There usually are also shared some costs connected with education and training. In formal education students can study both private or public schools or universities. Both forms are connected with a different level of direct costs (including also tuition fees at private universities) as well as indirect cost (opportunity costs). Formal education is not only for individual needs. In situation when these forms of studying are in accordance with employers' needs, the labour code ensures for employees (an individual) some legislative advantages.

The legislation which officially covers relationship between training payer (employer) and an employee valid in the Czech Republic is called a Labour code and defines two situations. The labour code is as act which specifies rules for these two situations. According to Section 227 of the Labour Code (Part 10 – Care of Employees, Chapter II, Professional Development of Employees) the employer shall take care of employees' professional

(vocational) development. This shall include in particular: induction training and on-the-job training, professional practice for school graduates (internship), improvement of qualification and qualification upgrading. "Improvement of qualification" means ongoing updating of qualification by which the nature of an employee's qualification does not change and which enables him to carry out an agreed type of work (job); it also refers to qualification maintaining and refreshing. The employer shall bear the costs for improving qualifications of employees. Where an employee requests to take part in improvement of his qualification of a more financially demanding form, he may (be asked to) settle part of the costs.

"Qualification upgrading" shall mean a change in the level (value) of qualification; it shall also mean acquisition of qualification or an extension of qualification. Qualification upgrading shall be studies, training and other forms of education for the purpose of attaining higher-level education (qualification) provided that this conforms with the needs of the employer. Where greater or further rights have not been agreed or determined, an employee who upgrades his qualification is entitled to time off (relief from work) with compensatory wage or salary. An employee is entitled to time off in the necessary scope to sit for an entry examination. The employer is entitled to follow the course and results of his employee's qualification upgrading; the employer may stop granting a certain employee time off (relief from work) if the employee has become long-term unfit to perform the type of work for which he is upgrading his qualification or the employee, through no fault on the side of the employer, has not fulfilled substantial obligations relating to qualification upgrading without any serious reasons for a prolonged period. (Labour Code, 2006, last updated version)

On data collected within a pilot survey between students of Faculty of Economics, Technical university of Liberec (introduced in chapter 4) used in this paper it was identified that these two situations mentioned above are not frequently used between Czech employees and employer. The reason is probably based on demanding requirements for employer in case improvement of qualification or qualification upgrading is in accordance with employers' needs. Contrary to maintenance one's qualification, the improvement of this qualification is not understood as a duty of an employee. (Pichrt, Štefko, 2010) On the other hand, an employer can sign with an employee a qualification agreement according to it an employee is obliged to participate on costs of education or training in case he or she decides to leave a company. The maximum of years for this agreement is 5 years.

2 Influence of Training on Wages

No matter who pays the cost of education all participants realize this investment expecting future returns. It means as in formal education more trained people expect gains from their deeper experience and knowledge. The key benefit of higher amount of human capital of employees reflects to higher earnings. Much of the empirical research on the topic of human capital has analysed the relationship between education, training and wages. However, empirical research on training—the other key component of human capital—has lagged research on the economics of education. The human-capital model yields straightforward predictions about the relationship of on-the-job training to wages, wage growth, and job mobility; still, as will become clear, testing these predictions requires good longitudinal micro data (Frazis, Spletzer, 2005).

Models of competitive labour markets imply that wages paid to workers reflect their productivity (based on ideas of Becker's human capital theory). For example, if education makes workers more productive, then higher wages are paid to more highly educated persons. Similarly, if on-the-job training makes workers more productive, then trained workers should receive higher wages than workers with no training. But education and on-the-job training differs in one key aspect: most workers finish their schooling before entering the labour market, whereas most on-the-job training occurs during a worker's tenure with an employer. While education and on the job training are both productivity-enhancing investments, they potentially differ with regard to whether the worker or the employer pays the costs (Frazis, Spletzer, 2005).

2.1 Costs and benefits of training

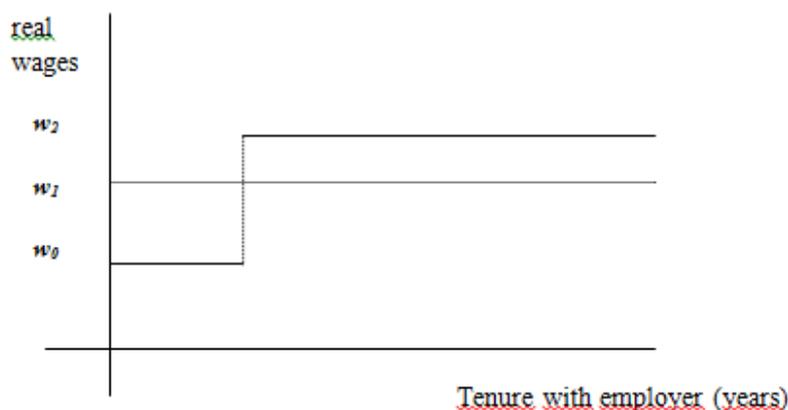
Training, as in case of formal education, is connected with various costs and benefits. However quite often is complicated to quantify and cover all expenses related to training and moreover to specify all benefits arising with skill's improvement. Where training is clearly a separable activity, its costs can be precisely identified. Where training takes place concurrently with production, the costs may be more difficult to measure. Some of the trainees' time as well as that of their supervisors or co-workers is devoted to training. Although the costs of informal (on the job) training are generally hard to measure, they probably total much more than those of formal training programs in the workplace and formal education required by employer (Filer, Hamermesh, 1996, Becker, 1975, 1993).

As Filer et al. (1996) points out whether employers or workers bear cost of the training depends on the nature of the training provided. Employers will not incur these costs unless

they expect enough extra output in the future to provide a rate of return equal to that obtainable on competitive investment. Workers will be unwilling to pay on the job training unless they can be assured of a higher wage later on. To the extent that these costs are expected to produce enough future benefits to provide a competitive rate of return, employers will offer training and workers will seek training opportunities. The costs associated with on-the-job training involve both direct costs, such as the salaries of the persons doing the training and any costs of materials, and indirect costs, such as the cost of taking trainees away from their current productive tasks. The benefits of on-the-job training accrue to both the firm providing the training and the worker receiving the training: because the worker is more productive after the training, the firm benefits from higher productivity and greater output, and the worker benefits from his or her higher productivity in the form of higher wages. One key theoretical issue regarding on-the-job training concerns the division of these costs and returns between the firm and the worker.

According to Figure 2, workers whose productivity is w_1 without training and w_2 after training but w_0 while being trained can „pay“ for their training by accepting wage w_0 during the training period and receiving w_2 after training is completed. Alternatively, they can always receive wage w_1 and let the employer both pay for and receive the benefits from the training (Filer, Hamermesh, 1996)

Fig. 2: Wages and Training



Source: Filer, R. K. & Hamermesh, D. S., 1996

3 Continuing vocational training in Europe

Since there are substantial economies of scale in conducting formal training programs, they tend to be run mainly by large employers (Filer, Hamermesh, 1996). The continuing vocational training survey (CVTS) provides comparable statistical results on training and non-training enterprises, the supply of and the demand for vocational skills, the need for CVT and the forms, content and volume of CVT, the use of enterprises' own training resources and of external providers, cost of CVT courses as well as the importance of initial vocational training (from 2005 e.g. apprenticeships). From the data presented by Eurostat it is possible to identify, that in analysed countries has been increasing the amount of money invested in CVT within European countries.

3.1 Training and Overqualification

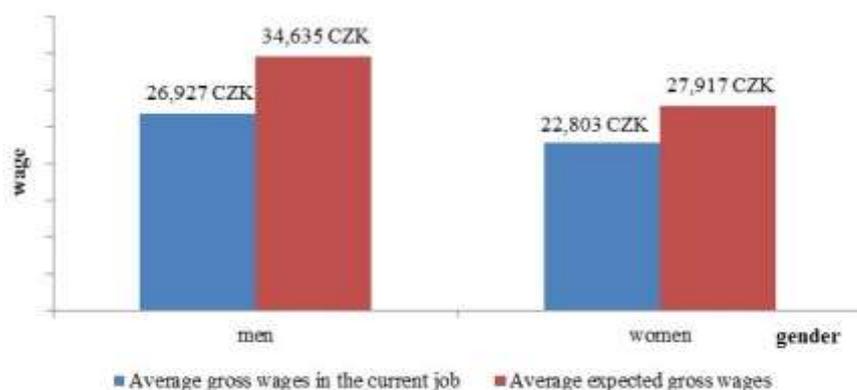
In case workers have higher qualification or skills than needed they do not effectively use their human capital. On the labour market this situation is named as job or qualification mismatch, both in vertical or horizontal dimension. Workers are overqualified (overeducated) if the skills they bring to their jobs are higher than the skills required for this job (see Groot,2000, Sloane, 2004, Hartog, 2000). As McGuinness (2007) emphasises there are several possible explanations of this situation. First, it can be a compensation for the lack of other human capital endowments (e.g. ability, experience, on-the-job training), or in other words overeducated workers are substituting formal for informal human capital or are less capable than adequately educated individuals. Also in this human capital perspective, overeducation can stem from the deliberate choice of over schooled worker entering low-skill job as an opportunity for initial experience as an additional human capital investment (Urbánek, 2012). Job or qualification mismatch is a reason that individuals are not paid enough for their level of human capital and they do not use it effectively.

4 Results of the survey about training and education: primary data analysis

For the reason to analyse importance of investment in human capital in connection with firm's education and training there were collected data between part-time students who represent those experienced at the labour market and increasing qualification in the same time. In the academic year 2013/2014 there was run a piloted survey including all part-time students at the Faculty of Economics, Technical university of Liberec. These students were questioned personally at the faculty during their lectures. Students were from all years and both degrees,

bachelor and master. From the survey there was collected more than 160 answers (and 133 were those who study and work in the same time, which is around 50 % from all part-time faculty students) in the academic year 2013/2014. The aim of their questioning was to find out data about their position on the labour market in connection with a level of their education, field of their job position or relation to the support (and co-financing) of education and training of their employees. Part-time students were chosen as respondents which are in a position of students nevertheless they have an experience from the labour market because they work in the same time. As mentioned above legislative background between employees and employers in connection with education and training of employees is covered in the Czech Republic by the Labour code. From two situations defined in the Labour code, namely “improvement of qualification and qualification upgrading”, the second could be the case of respondents. From the results of this survey we can see that only 4 of more than 130 working respondents confirmed that their employers support their increase in qualification formally. Respondents were also questioned about current real and expected earnings to illustrate how they feel their level of current and potential qualification (from secondary to tertiary education). The difference between gross earnings in current job and gross expected earnings illustrates Figure 3.

Fig. 3: Current and Expected Gross Average Wages of Part-time Students in 2013/2014



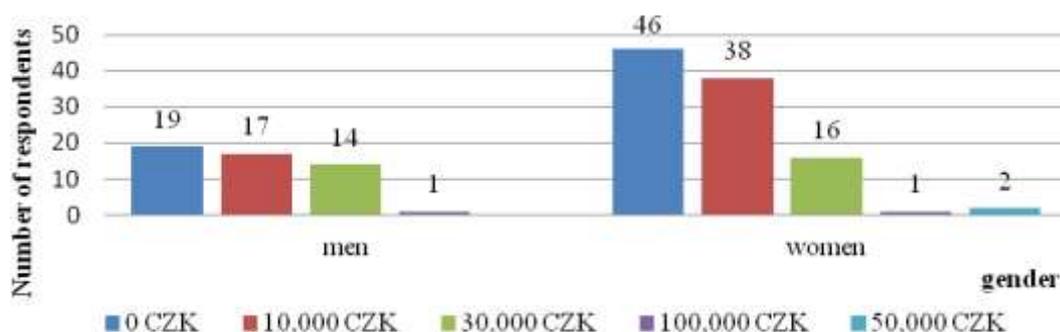
Source: author's own adaption

It is interesting that both groups of respondents, men and women expect increase of earnings after finishing their master degree at the Faculty of Economics, Technical University

of Liberec. However after analysing information about effects of their working position, more than 50% of respondents answered that they do not expect any change of their position after finishing a degree. Based on studying of theoretical background about overqualification, it is possible to conclude, that in case students do not move forward in their job position after finishing the university, they become overqualified and their investment in human capital will not be used as effectively as possible.

In the theoretical part there was also pointed out that a key issue of investment in training is costs and their sharing between employees and employer. From the results we identified that in majority individuals invest in qualification upgrading and they do not get any financial from an employer. Within this survey respondents were also asked about other private investments in training among the company. From the Figure 4 it is possible to see, that more women than men respondents admitted further investments in education in training outside their company (which is connected with structure of respondents where more part-time students are women). We can see that most of the respondents do not invest any additional sources to their further education in training in 2013, however there were 2 women which invested in 2013 more than 50,000 CZK. The survey analysed the topic in much deeper perspective, however due to the extent limit for this paper, other results cannot be here present and will be the output of following research publications of authors.

Fig. 4: Costs Spend on Education Outside the Company



Source: author's own adaption

Conclusion

The paper briefly touches some aspects of investment in training in theoretical and practical framework. Based on experience of human capital theory investment in education and training ensures high returns however it is also connected with high uncertainty and risk especially

from companies' point of view. Presented data show that individuals feel importance of increasing of level of education as well as private investment to further training. Nevertheless results also show that in case of qualification upgrading employers are careful with participation on this qualification upgrade. Usually they do not classify it in accordance with the job need. Thus employees who receive i.e. university degree based on own needs might become for their current job overqualified. It causes that their investment is not such effective as in case they would find a job requiring university degree. In this paper limited by its extend we were able to touch only few aspects of this phenomenon. These issues will be an objective of further research of author.

References

- Becker, G. S. (1975). Human capital: a theoretical and empirical analysis, with special reference to education (2d ed.). New York: National Bureau of Economic Research: distributed by Columbia University Press.
- Becker, G. S. (1993). Human capital: a theoretical and empirical analysis, with special reference to education (3rd ed.). Chicago: University of Chicago Press.
- Belcourt, M., & Wright, P. C. (1998). Vzdělávání pracovníků a řízení pracovního výkonu (1. ed.). Praha: Grada.
- Filer, R. K., & Hamermesh, D. S. (1996). The economics of work and pay (6th ed.). New York: HarperCollins College Publishers.
- Groot, W., & van den Brink, H. (2000). Overeducation in the labour market: a meta-analysis. *Economics of Education Review*, 19, 149 – 158. Retrieved January 4, 2012, from <http://www.elsevier.com/locate/econedurev>.
- Hartog, J. (2000). Over-education and earnings: where are we, where should we go?. *Economics of Education Review*, 19, 131 – 147. Retrieved January 4, 2012, from <http://www.elsevier.com/locate/econedurev>.
- Labour code. In: No. 262/2006 Coll. 2006.
- McGuinness, S., & Bennett, J. (2007). Overeducation in the graduate labour market: A quantile regression approach. *Economics of Education Review*, 26, 521 – 531.
- Pichrt, J., & Štefko, M. (2010) *Labour Law in Czech Republic* (1st ed.). Netherlands: Kluwer Law International.
- Psacharopoulos, G. (1995) *The profitability of investment in education: concepts and methods*, World Bank: Working Papers.

Sloane, P. J. (2004). Much Ado about Nothing? What does the Overeducation Literature Really Tell us?. Overeducation in Europe. (11 - 45). Cheltenham: Edward Elgar.

Urbánek, V. (2012). Overeducation and Earnings – Labour Market Mismatch. ACC Journal, 8, 209 – 217.

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