

UDK 321.262+330.34(497.11)
Biblid 0543-3657, 61 (2010)
Vol. LX, No. 1140, pp. 113–126
Original Scientific Paper
November 2010

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The Impact of Human Resources on economic Growth and Development of Serbia

ABSTRACT

The research paper presents an attempt to clarify the relevance of the human capital concept in labour economics and theories of economic growth. The characteristics of human capital are compared with those of “owned” capital, while the aspects of market behaviour of individuals, households and companies in acquiring of productive skills are discussed. The process of acquiring productive skills has all the characteristics of investments including the problems of financing, measurement of inputs and outputs, and of rational choice between the available possibilities. The role of human capital in economic development is explained and the influence of disposable human capital on international trade and movements of production factors is considered.

Key words: human capital, economic growth, economic development, international trade.

Approach to the problem

Under the present conditions, the impact of human resources on economic growth and development is becoming crucially important. Therefore, the objective of this paper is to consider the use of the human capital concept in economy in general and then its impact on economic growth and development of Serbia. Besides, the article regards this concept that is being used in labour economics and economic growth theories, comparing the characteristics of human capital with the ones of the “owned” capital. By all this, it is necessary to show the aspects of market behaviour of individuals, households and companies in acquiring of productive and service skills in everyday work. Acquiring of all these skills by individuals has all the characteristics of investment. Further, this has to do with financing, costs (expenditure) measurement and performances, or actually with the rational choice between

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the available possibilities. Therefore, it is necessary to consider the role of investments on human capital, which, reversibly influence growth and development of some countries, including Serbia, in specific. Then, it is pointed to the influence of available human capital on international economic relations, or actually on international trade and trends of production factors on the increasingly globalised and turbulent market.

According to traditional economic theory, capital is the main driving force of economic development. By all this, one should keep in mind that it is defined in different ways. In the simplest terms, it can be defined as an accumulated physical and financial property that is used in goods production and in provision of services and information. Human capital is one of the factors of economic growth and development. This implies the investment in education and health of people for the purpose of increasing their production abilities. It also includes the investment in technology as a codified (recorded) human knowledge on production. All these production factors increase the overall production effects, but it necessary to invest in them as is the similar case with physical means of production.

Certainly, the purpose of this paper is not to systematically present the past knowledge of human capital based on the available economic literature. However, in one of its parts, the author will analyse, among other things, some dilemmas and the “unfinished business” in incorporating this concept in theories of labour economics and theories of growth and development economics, but also in educational and development policies of a contemporary state Serbia should be, too. Then, it is necessary to compare the characteristics of human capital with those of “owned“capital”.² Under the contemporary conditions, theory and practice are increasingly dealing with microeconomics of human capital or the market behaviour of individuals, households and companies, which are all acquiring production skills. “Incorporation” of knowledges and skills in a man in order to increase his production capabilities has the characteristics of investments that include the problems of financing, production performance and generally a rational choice between the available opportunities. It is important to see the role of investment in human capital for growth and development of an economy as the Serbian is, which is still being treated as a developing one.³ Besides, it is necessary to perceive the influence

² The differences result from the institutional assumption that the owner can use and sell that property within legal frameworks, what is not the case with human capital.

³ Serbia is a specific country by the characteristic of its economic crisis which had the following three stages: the stage of megainflation that was caused by the geopolitical shock, the stage of transition stagflation and the stage of transition shock. Transition stagflation and transition shock obviously show that it is necessary to establish a new sector for the sake of prosperity and survival of economy.

of available human capital on international economic relations, international trade and production factors trends. Then, one should emphasise the great significance of entrepreneurship, which connects human and physical capital with the contemporary technology. Taking into consideration their performances external and internal entrepreneurs can be treated as a special part of human capital. By all this, natural capabilities and experience are their main part that can be increased by education.

Concept of human capital in economic science and practice

The concept of human capital is not yet comprehensively accepted in economic science and economic practice in particular. The term “capital” is reluctantly used, since it obviously involves some ownership relations, what also includes the man as a thinking individual.⁴ However, one should keep in mind that human capital is by many elements different from “owned” one. It includes means of production and can be transferred by market transactions. The argument against the use of the term “human capital” in economic science is that this expression is not used in everyday economic language.⁵ Instead of human capital, the term “man value” was used for a long time. It also denoted some taxation systems as well as compensations for the reduced work capability or death of an individual. Today, this term is accepted and regularly used, but more in economic literature than in economic practice.

The main form for formation of human capital is education, but it is also a subject of other scientific disciplines, this particularly including pedagogy, psychology and sociology. In terms of the human capital concept, economic aspects include investment in production performances that are mostly measured in monetary units and they result from the market human behaviour. However, this obviously includes only one of all possible approaches in the educational process in the human society. Certainly, not only that education increases production performances but it offers the man the opportunities to develop himself and achieve greater social satisfaction. Implicitly, the man’s production skills produce results only if he willingly co-operates in their use.

In economic practice pointing to the motivation aspects of formation and use of human capital, however, seems to be the most important. By all this, one should keep in mind that the study itself or actually permanent education requires efforts that will be made only if there are specific motivation reasons.

⁴ Actually, it reminds many people of slavery and other forms of dependence where a man and his commitments can be bought and sold, what is unacceptable to the contemporary, civilised world.

⁵ Alfred Marshall, *Principles of Economics*, Macmillan, London, 1956.

This also applies to the already created human capital in economic and numerous non-economic activities that exert a great impact on the economy operation, its growth and development.⁶ Economic development includes not only the growth of national production scope, but also all necessary systemic changes in economy as well as structural ones.

On the other hand, the institutional factors that influence the market behaviour of both companies and employees are labour legislation and trade unions, state-funded education, and then integral pension and health care systems. All these factors exert an impact on the net earnings, employment, on the relationship between savings and consumption, what actually implies the size of investments to human capital. In various countries, the intensity of acting of institutional factors is different. Therefore, the influence of the behaviour of participants on the market is also different.

Interdependence of human and owned capital

The establishment of a size of investment in human capital causes the same dilemmas that appear in establishing owned capital. By all this, there is a principal question whether investments expenses should be taken or it should be the discounted sum of value that will be made by the use of capital. Actually, the capital that does not yield profit is not a value regardless of how big investments have been made in its formation. Anyway, the investment in human capital is more difficult to estimate by expenses (invested funds) in any form.⁷ Therefore, in establishing the size of investments in human capital it is more acceptable to take the present value of performances than it is the case with physical capital.

On the other hand, under the present conditions economic development includes the following:

- a) growth of material production and national income together with structural changes and changes in the operation of the specific economy with general upward development trend;
- b) a unity of developments and development, or actually the most general form of developments and development of economy;

⁶ The concept of economic growth is narrower than economic development, since economic growth is basically a component of development.

⁷ That includes tuition fees, supplies and book expenses, living costs during the period of training. This should be added the lost earnings that older students or course attendants could have made if they had got employed earlier. These expenses are covered by various subjects, but there are no accounting or statistical records about them as is the case with physical capital.

- c) any developments of economy imply numerous changes that are equally qualitative and quantitative;
- d) the caused changes are made under the impact of scientific and technical progress and changes of the social and economic surroundings.

In choosing the occupation and education, a “net” aspect of earnings plays a significant role. Sometimes it becomes prominent especially with those who do not ask too much efforts or offer better work conditions, while the studying efforts will be most often neglected. The analysis of the production function of formation and after that use of human capital is rather complex for many reasons. It is because of the education results in the creation of both consumer and production capital. The former is used to expand the choice of consumption during one’s lifetime. Although the effects of investment into human capital can be counted too, it is assumed that it has a full sense with the production of human capital. However, if the size of human capital is counted by taking expenses (and not discounted future performances) there is a problem to precisely separate consumer and production human capital.

In the production use of human capital implementing factors are significant and these are especially available physical capital and technology. All three factors are interrelated: new means of production that are more expensive involve modern technology, requiring a certain level of knowledge and skills of employees. Many experts assess that the decisions on investments in human capital that are made by individuals or their families are more difficult than it is the case with the investments in physical means of production. Thus, the choice of occupation is an investment for a long term where the demand for some work profile can be changed due to abrupt technological progress. However, in time and based on the costs principle the calculated value of human capital is growing to the utmost point after which the amortisation is bigger than new investments.⁸ In developed economies, differences in market behaviour of people will depend on their net property and human capital value in terms of a total of discounted earnings to the end of one’s work lifetime. By all this, it should be kept in mind that along with savings almost most usually one’s ownership property is growing as one is getting older, while human capital is diminishing. One should not neglect the fact that in developed economies new jobs are created almost only in human capital intensive branches.

⁸ In young age people study and work more than when they are older, or actually the older a man becomes the bigger is the subjective “value of leisure”.

Microeconomic aspects of investment in human capital

In the microeconomic approach to economic developments, it is assumed that participants in the market act rationally in accordance with the target function. By all this, they face the limitations in the form of prices they cannot influence upon as well as some production capacities in the form of a production function, this also including institutional conditions. The main participants in the market that are related to human capital are actually individuals, households and companies. On the other hand, the state also participates in funding and investing in human capital, but in microeconomics, it is not considered a participant in the market because it applies the economic criteria to a limited extent.

It is assumed that the clear function of a company is to make a net gain or profit. When a net profit is made, the differences in time are expressed by a market interest rate that is imposed to a specific company as well as other resource prices. Then it is assumed that the capital market operates perfectly, this meaning that loans will always be approved, which will be repaid from some future incomes. However, as for individuals the targets of economic acting are becoming more complex.⁹ Economic literature almost usually neglects the fact that besides preferences regarding higher pays and consumption people have also the ones related to the kind of jobs they do. Sociology is more open to this problem – it attempts to perceive and resolve the problems with the hierarchy of professions, what actually means to evaluate some better than others. Different professions necessarily make different physical and mental efforts, submitting themselves to unpleasant work conditions. Therefore, measuring by unit of time money pay is not the only criterion for successfulness of work performed by the chosen profession.

It can be assumed that a part of available production time of people is the one where production human capital is created and where it is used. The quantity of human capital that is created by unit of time depends on the ability of an individual, but also on the phase of the living cycle in which this capital is invested.¹⁰ Good results that are achieved in the previous phase of investment in human capital increase the effects of investment in the next phases of the life cycle. By all this, it is implied that the adjustment of wishes and ambitions in choosing a specific sort of human capital is very significant, and it is not only the quantity or duration of education. Thus, it is the choice

⁹ It is assumed with good reason that it the pay per unit of time — the bigger it is the higher level of consumption is.

¹⁰ There is a strictly defined sequence of phases where some kinds of human capital can be created — from the pre-schol training to completion of university studies.

of professions that requires certain affinities, but also the abilities in the educational process and in using the acquired knowledge in the work process.

In Serbia, one can have an additional insight into the formation and use of human capital by taking a survey of acquiring practical skills by studying during the work lifetime. Thus, the quantity of formed capital is measured by the time spent at work, or by years of work experience. However, taking into consideration the division of acquired working skills to general that can be used anywhere and special ones, which can be used only in a particular company there are differences between the interests of workers and interests of companies. The former tend to acquire as much as possible general skills while companies will tend to offer only those special skills. However, this is not always possible to apply in practice. Since they know the effects of work of some of their employees, in their policy of work education companies will pay them better when they think, from the aspect of their interests, that the educational process is completed. In this way, they can partly reduce the damage that occurs if their employee finds a job in some other company after he has acquired his general skill in the previous one. However, it is yet considered that the employee covers his general practical education himself since he is paid less in the first years of his work.

Human capital and economic growth

Physical capital that is expressed in money unit on the basis of actual investment has an exceptionally important role in explaining economic growth, and especially growth and development of transition countries. The second factor that explains economic growth is living work that is measured by the number of employees or, if the annual growth is measured, by the employee-year unit.¹¹ However, as the empirical research shows it is almost by the rule that a surplus of performances cannot be ascribed either to capital or to labour. That surplus has different names and is most often regarded as the result of technological progress and sometimes as the measure of lack of knowledge of the way and sorts of integral acting of all production factors. One of the possible explanations lies in the assumption that labour as a production factor is inappropriately specified. On the other hand, if the quantity of labour is expressed by taking into account the invested human capital it is obvious that in explaining the contribution to economic growth the role of labour would be greater than physical capital.

¹¹ The common contribution of both factors can be measured by applying the Cobb-Douglas function in order to present the annual growth of production performances as the result of the annual growth of capital and labour.

However, neglecting the function of human capital becomes prominent also in the way of forming the annual budgets of specific countries. In the social budget, expenses for education are, by the rule, regarded as expenditures and not as investments. Therefore, funding of these expenditures is not regarded as savings as is the case in the simplest budgets where it is assumed that investments should be equal to the savings. That certainly also makes effects on the conception of state functions in education, including the taxation system. Some countries apply various scientific methods and models that are used in research to count the size of human capital. Since different procedures are applied, different results are obtained. It is understandable that it is difficult to count the size of human capital by adding expenditures of households, companies and the state for education and training bearing in mind that it is not easy to separate those investments from the expenditures for other purposes (if investment in human capital also includes health care of employees it is even more difficult to separate the consumption part from the investment one). Therefore, more often is applied the procedure of defining the relationship between the increase in investment in human capital (which is, for example, measured by years spent in education) with the increase of the sum of discounted lifetime work incomes.

Two mechanisms of human acting exert an impact on growth. The first is production of one's own technological innovations (as is the case with the most developed countries) and the second is the imports of foreign most modern technology. However, if a country leads the way in creating new technologies the others will more rapidly keep up with it if they possess sufficient human capital. On the other hand, there is a dilemma whether human capital is important only when a new technology is adopted or when it is later used. All factors of growth are mutually complementary and interdependent. Therefore, one should keep in mind that a lack of one of them could decelerate growth.¹² In underdeveloped countries big investments in physical capital produce results only if they are rich in natural resources (oil, gas, ores), while human capital, technology and entrepreneurship is coming from developed countries. Entrepreneurship has also considerably contributed to attaining more accelerated economic growth.

¹² Thus, the investments in physical and human capital were big in the former Soviet Union, but due to the lack of entrepreneurship and possibilities to use the Western technology economic growth was very slow.

A new approach to growth and development

A new approach to growth and development of the Serbian economy should be based on a more effective and efficient use of human resources. In spite of a number of positive shifts in growth and development, Serbia's economy is still burdened with numerous negative indicators.¹³ In the period that will be characterised by rapid and abrupt changes not only in economic sphere, dynamic technological changes will be incorporated and they will bring about radical transformations in the economy and society. That future time will be permeated with rapid changes in the economy, which will be based on the following:

- a) growing significance of information resources;
- b) mutual linking of new technologies;
- c) the process of internationalisation of production, labour division and growing inter-dependence of producers within the global frameworks;
- d) the economic growth concept that would be primarily measured by the achieved results in raising the quality of life.

Economic growth is quantitatively expressed in various ways and most often, it is done by indicators of growth rate of GDP, national income, GDP per capita, national income *per capita*, etc.

A new strategy of Serbia's economic growth and development should necessarily be adopted since the devastating economic crisis in the last twenty years has made it lose its relative position impeding its new geopolitical positioning. That new positioning requires the achievement of economic growth and development. It is considered that the basic factor of growth is economy competitiveness, while its driving force is an efficient financial system. The new strategy of Serbia's economic competitiveness should rest on the following four pillars:

- macroeconomic management;
- microeconomic management;

¹³ For example, a comparatively high inflation rate (9.5 per cent), deficit of foreign trade balance (8.5 per of GDP), low level of investments in capital assets (19.4 per cent), volume of final consumption that exceeds the GDP volume (by 5.9 per cent in 2006), the unfinished restructuring and company privatisation (only about 60 per cent of socially-owned enterprises has been privatised, 96 big companies have been in the process of restructuring), low level of capacity use in the processing industry (averagely about 30 per cent), technological lagging behind the industrialised countries of Europe (as assessed by 5-6 technological years), rise in unemployment (991,807 persons), poverty index of 10.5 per cent (the poverty limit is 20 per cent) and other negative indicators.

- legislation and institutions of the system, and
- value system and business ethics.

In this process, no institution can replace the role a new government would play. The main task of the future government should be to work out this job, establish institutions and mechanisms and assign them with a task to carry out certain activities.

By using human capital in an appropriate way together with the use of physical capital as an investment basis, it is possible to forecast some greater shifts in Serbia's economy in the forthcoming mid-term period. Many Serbian economic experts forecast the following parameters:

- economic growth of 5-7 per cent annually;
- rise in the competition ranking of countries by 30-40 places;
- inflation to be less than 5 per cent annually;
- reduced foreign trade and current balance of payments deficits;
- the share of investments in GDP by more than 25 per cent;
- the share of exports in GDP by more than 40 per cent;
- reduction of the real unemployment rate to about 11 per cent;
- rise in the living standard, social care for elderly and disabled persons, etc.

All research studies that deal with the impact of human capital on growth and development show that under the present conditions human capital is almost and by the rule bigger than physical capital. This is particularly true keeping in mind that its rise in the time concerned, for example annually, is bigger than the rise of physical capital.¹⁴ Anyway, great attention is usually devoted to the inter-dependence of human and physical capital, this including technology and entrepreneurship, in generating economic growth. On the other hand, inducing of technology development when human capital is insufficient or ill-disposed can bring about great inequality in incomes, what reduces social cohesion and can cause political instability. Fore example, the economic developments in Serbia are much different from the declared objectives and tasks that are formally incorporated in "The National Development Strategy from 2006 to 2012". As provided for, till 2012 10 billion Euros of investments would be ensured annually. This should be achieved by the model of three thirds – one third from the domestic sources – from the profits gained by the economy, from the state and household

¹⁴ This explains the rapid recovery of the countries that suffered from vast destruction during the wars, since if the contemporary technology was available human capital could promptly make up the losses in physical capital.

budgets; the second third from the foreign direct and portfolio investments; and the third one from the credits to be approved by international financial institutions and by taking loans on the capital market. In this way, in the following three years investments in what is usually called fixed capital (capital assets) would be raised to 25 per cent of GDP.¹⁵

Taking as a basis the national economy it could be explored to what extent the key factors (technology, available physical capital and the level of physical development of the country) are inter-related and particularly to what extent they are related to the investments in human capital and what combinations produce the best overall results for economic growth of the country.

Human capital and foreign trade

In the contemporary circumstances, international trade has retained its old model of functioning. This means that the country that is rich in some products or some production factor exports the products that require its intensive use. On the other hand, such a country imports the products that require an intensive use of the factors it is deficient of. It implies that this directly includes production factors, too. Of course, the countries that are rich in capital tend to export in the countries that are rich in labour force, while labour force will migrate in the opposite direction. The inter-dependence of capital and foreign trade includes the Leontief paradox.¹⁶ It shows that the USA has exported the products that contained a lower level of capital per worker than those that have been imported. The explanations of this phenomenon have been different, and among others, one is that the theoretical approach is based on the incorrect assumptions. They have, however, insufficiently taken into account the possibility that human capital has been disregarded, which is (together with advanced technology) incorporated in the American export products. On the other hand, processed natural resources (oil, ores) have been dominant in imports and they are produced by the capital-intensive processing industry. However, in the prevailing practice the labour factor is expressed by unit of time regardless of human capital that is incorporated into the contents.

¹⁵ By this scenario, in three years Serbia would receive totally 18.6 billion Euros in foreign capital or 6.2 billion annually — a bit more through direct and portfolio investments and a bit less than three billion Euros in loans.

¹⁶ Edward Learner, "The Leontief Paradox", Reconsidered, *Journal of Political Economy*, 88 (3), 1980, pp. 495-503.

Thus, a large comparative advantage of industrialised countries lies in the industry branches that involve high contents of knowledge and information. On the other hand, those countries have imported products with high contents of human skills. Of course, labour productivity has grown faster in export than in import branches. Due to the high contents of industrial products in international trade, labour productivity has also grown faster in import branches than in economy in average, but the growth rates have been lower than those in export branches. Yet, the contents of research and development have exerted greater impact on comparative advantages of exports of industrialised countries than on the size of unit labour costs. However, today it is obvious that changes follow the direction of technological intensity, this also including higher contents of human capital.

Thus, taking into consideration human capital, it is evident that industrialised countries export factor-intensive products. However, as for production factor trends, the migration of highly skilled labour has been intensified to industrialised countries. This makes one conclude that human capital is cheaper, but also less valued in less developed countries. The people from those countries are more motivated to study and work than those in developed countries since the former ones willingly accept a lesser net pay for the same jobs than their colleagues in the latter countries.

Instead of a conclusion

In considering growth and development, one should assume that there are enormous regional and social inequalities in the world and majority of the mankind lives in privation, want and poverty. The contemporary development of new technologies should enable further rapid and dynamic development of industrialised countries but it should also give hope that poverty will be reduced and a more rational division of labour will be established in the new millennium. At the present level of knowledge of the science, there are three levels of organisation of any economy as a big economic system, and they are as follows:

- e) general economic balance;
- f) system stability; and
- g) system optimal level.

Apart from the new vision of Serbia's development, it is possible to more rapidly achieve its economic growth and development also raising the level of competitiveness and attaining a higher level of efficiency of the integral financial system. For example, the World Bank estimates that a share of a new sector in forming GDP should be at least 40 per cent in order to annul the negative effects of transition.

Mostly, economic growth implies an increase in production in Serbia's overall economy in terms of its total GDP in correlation to the overall population. The same factors of economic growth also apply to Serbia and they are the following:

- accumulation (of capital), what includes all investments in the country, equipment and human resources;
- population growth, and related to this, growth of available labour force; and
- technical progress or human knowledge and ability of its active use.

As regards growth and development of the Serbian economy in the present circumstances its starting position is not bad since it has the following characteristics: macroeconomic stability has been achieved, price and foreign trade liberalisation has been implemented, the banking system and public finances have been reformed, VAT has been introduced, the taxation system has been harmonised with the international standards, the fiscal deficit has been eliminated, legal security of companies has increased, GDP growth has been achieved, growth of foreign exchanges reserves and savings of population has been attained, etc. However, the missing link is an appropriate use of human capital in achieving economic growth and development of Serbia. This is the factor that is used insufficiently and therefore, its synergy effects have not yet been fully expressed. It is considered that that the impact of human resources on resolving the development and structural problems of Serbia's economy could be decisive in the forthcoming period. The greatest potential in the development of Serbian economy should be human resources, this meaning that the quality of education and permanent training of skilled labour should be reaffirmed. On the other hand, education and studying themselves require from an individual to make some efforts — he will come through them only if he expects a sufficient compensation in the form of higher net earnings in the future. In choosing profession, what also influences the quantity and a sort of the needed human capital, the main criterion could be the total earnings an individual can make. Besides, the increased migration of skilled labour is becoming more intense as a result of compounding of the globalisation process. It is considered that after the initial "investment expenditures" migrations are useful for individuals as for the immigration and emigration countries, this including the whole world economy.

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UTICAJ LJUDSKIH RESURSA NA PRIVREDNI RAST I RAZVOJ SRBIJE

APSTRAKT

Rad predstavlja pokušaj da se pojasni važnost koncepta ljudskog kapitala u ekonomiji rada i teorijama ekonomskog rasta. Karakteristike ljudskog kapitala se porede sa osobinama koje ima „svojinski,“ kapital, dok se razmatraju vidovi tržišnog ponašanja pojedinaca, domaćinstava i preduzeća u sticanju proizvodnih stručnih znanja. Proces sticanja proizvodnih stručnih znanja ima sve karakteristike koje imaju investicije, što uključuje probleme finansiranja, merenje uloženi sredstava i proizvodnje i racionalan izbor između mogućnosti na raspolaganju. Objašnjava se uloga ljudskog kapitala u ekonomskoj razvoju i razmatra se uticaj koji raspoloživi ljudski kapital ima na međunarodnu trgovinu i kretanje faktora proizvodnje.

Ključne reči: ljudski kapital, ekonomski rast, ekonomski razvoj, međunarodna trgovina.