

**UNIVERSITAS CAROLINA  
PRAGENSIS**

Charles University in Prague  
Faculty of Social Sciences  
Smetanovo nábřeží 6  
110 10 Praha 1



**Institute of Political  
Studies**

158 00 Praha 5, U Kříže 8  
TEL: 251 080 111  
TEL/FAX: 251080265

INTERNATIONAL ECONOMIC AND POLITICAL STUDIES  
Masters Thesis

*Irena Cerović*

Human Capital and the Transition in Serbia:  
Accumulation, Allocation, and Implications for  
Development

**Academic supervisor:**  
Doc. Ing. Tomáš Cahlík CSc.

**Date of submission:**  
9 January, 2006

### Statement of Authenticity

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains nothing which is the outcome of work done in collaboration with others, except as specified in the text and where due acknowledgement has been made."

  
Signature

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Date

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## **Abstract**

Developed industrial economies have faced challenging transformations over the past decade, stemming from the increased global interdependence of economic systems and greater reliance on rapidly changing technology. Along with the reassessment of the bases of modern society came the realization that human knowledge and ability to learn have become a key asset for development and growth. As developed economies reform to adapt to this new reality, they are joined by post-communist countries facing added challenges of political and economic adjustments. This study looks at the paths open to the country that was among the last to enter this process in Europe. Serbia's current situation with respect to human capital is assessed and examined in light of the global processes taking place around it, and its unique challenges are presented. The conceptual approach of the study involves looking at Serbia's human resources in terms of their quality, quantity, and distribution between sectors of differing productivity. This is done through a survey of educational reforms, skilled emigration, and forces determining the allocation of human capital. The study shows that there is a need to adopt an integrated strategic vision of human development as a vital component for the success of the transition. It presents this goal as a conceivable reality.

## List of Abbreviations Used

**DEM** – deutsche mark  
**DSS** – Democratic Party of Serbia  
**ECTS** – European Credit Transfer System  
**EHEA** – European Higher Education Area  
**ERA** – European Research Area  
**EU** – European Union  
**EUR** – euro  
**FDI** – Foreign Direct Investment  
**FRY** – Federal Republic of Yugoslavia  
**GATS** – General Agreement on Trade and Services  
**GDP** – Gross Domestic Product  
**ICT** – Information and Communication Technologies  
**IDP** – Internally Displaced Person  
**ILO** – International Labor Office  
**IMF** – International Monetary Fund  
**MOES** – Ministry of Education and Sports  
**NATO** – North Atlantic Treaty Organization  
**NGO** – non-governmental organization  
**OCHA** – Office for the Coordination of Humanitarian Affairs  
**OECD** – Organization for Economic Cooperation and Development  
**OMC** – Open Method of Cooperation  
**PISA** – Program for International Student Assessment  
**ROR** – Roundtables on Reform  
**SANSA** – South African Network of Skills Abroad  
**SEE** – South East Europe  
**SFRY** – Socialist Federative Republic of Yugoslavia  
**TIMSS** – Trends in International Mathematics and Science Study  
**TOKTEN** – Transfer of Knowledge through Expatriate Nationals  
**UN** – United Nations  
**UNDP** – United Nations Development Program  
**UNESCO** – United Nations Educational, Scientific, and Cultural Organization  
**UNHCR** – United Nations High Commissioner for Refugees  
**UNICEF** – United Nations Children's Fund  
**USD** – United States dollar  
**USSR** – Union of Soviet Socialist Republics  
**WUS** – World University Service

**PART I. INTRODUCING THE TITLE**

## **Human Capital and Economic Growth**

A simple definition of human capital is that it "refers to the productive capacities of human beings as income-producing agents in an economy" (Hornbeck and Slalomon, 1991, p.3). In other words, human capital is the economic potential of individuals, which helps them achieve a better quality of life and generates certain benefits for the societies they live in. The latter benefits can, according to the Neo-Classical understanding of the relationship between the micro and macro realms of economic activity, be considered as only secondary since the maximization of individuals' utility is the essential engine of the economy, or they can be placed in a concrete context and analyzed accordingly. This paper looks at the relevance of the social returns to human capital for growth and development in the case of Serbia's transition economy. It examines several important areas that may contribute to these returns and looks at specific policies to improve them. Let us begin with a brief overview of the development of theorizing in the area of human capital.

The concepts of human capital and knowledge were first formalized into an articulate economic theory in the early 1960's, with the works of Theodore Schultz (1902-1998) and Gary Becker (1930- ). These two economists were the first to argue that resources spent on education and training should be treated as investments rather than consumption, as they yield returns in the future. These investments could then be gauged against their present value, leading to an ostensibly useful cost-benefit analysis. While the idea that there is economic value in human knowledge and skill reaches to back Classical Political Economy and Adam Smith, there has obviously been a considerable delay in expressing this idea in a theory. Several explanations exist.

First of all, there has been considerable disagreement in the first stages of the development of the idea. Whereas J. S. Mill and Marshall on one side considered that "acquired capacities" should be distinguished from the person of the human being, and that only the former should be treated as capital, on the other side Smith and Fisher believed that human beings themselves represent capital and that by investing in education, they are investing in themselves. (Baptiste, 2001). Second, it is often difficult to differentiate between investment and personal consumption, and this is very much the case concerning educational expense. J. M. Keynes, for instance, believed that education was mainly a household expenditure and therefore should not be treated as investment. The dominance of Keynesian economics through the 1930's and 40's thus

precluded the further formulation of a theory on human capital. Finally, it also took some time for western economies to get to the stage when such a theory emerged as important. According to Briggs, this only occurred with the post-World War II economic and technological boom that suddenly necessitated skilled labor on an unprecedented scale. (Briggs, 1987).

Since then, human capital theory has become a widely accepted approach to education as well as overall policy towards human resources, on levels ranging from schools to firms and to government. Along with "globalization", the phrase "knowledge economy" is among the terms most commonly used to describe today's dominant economic system. According to Ernst & Young, "more than 50 per cent of Gross Domestic Product (GDP) in the major OECD economies is now based on the production and distribution of knowledge" and in the United States, "more than 60 per cent of workers are knowledge workers". (Ernst & Young, 1999). International development institutions such as the World Bank have also begun to place great emphasis on the importance of knowledge for economic development. Underpinned by several examples of economic boost that are probably related to investment in human capital, most prominently the Irish "economic miracle" of the 1990's, these developments gave rise to a number of works exploring the link between human capital and economic growth. However, atop exclamations that the 21<sup>st</sup> century is "the century of human capital", this crucial relationship remains controversial.

In particular, while it may not be all that difficult to determine private returns on human capital investment such as education (indeed, Mincerian wage regressions<sup>1</sup> have been noted and studied in various segments of labor economics), it can be much more difficult to do so with social returns. Firstly, there is the obvious difficulty of deciding upon the correct measure of human capital. While earlier studies usually focused on "flow" measures, primarily enrollment rates, most contemporary ones use a "stock" approach and take mean years of schooling as a proxy for total human capital. Quite apart from the problem of choosing which of the two general approaches yields more reliable results, there is then the second difficulty of accounting for the quality of the education and training received. In addition, most analyses must rely on data that make

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<sup>1</sup> Mincerian wage regression - the statistical relationship between market wages, education and experience, developed by Mincer in 1958.



comparative analysis across countries or regions and through different periods of time nearly impossible.

One fairly stable conclusion, however, seems to be that the social returns to human capital vary widely across countries. In particular, it seems to be the case that the returns are somewhat higher in high-income countries than in low- or middle-income ones, which is a contradiction to the law of scarcity – one would expect a resource (in this case, knowledge) to have higher value and generate greater returns in environments where it is scarce, and yet this does not seem to hold for human capital. Several explanations are possible.

For one, “threshold externalities” seem to exist in human capital, indicating that there may be a “critical mass” of human capital required for investment in it to yield a positive return. (Drazen, 1990). In other words, investment in education can only begin to pay off once a sufficient number of people have been educated. Alternatively (or additionally), poorer countries may face other, exogenous hurdles preventing higher returns on human capital. One such commonly noted obstacle is technological deficiency – it is often argued that there can be no great benefit to modern training without modern technology to go along with it, and it would make sense for human capital to necessitate certain physical assets to which to apply its skill. In addition, the absence of such technology may lead to human capital being put into unproductive, socially wasteful, or rent-seeking activities, which may even have a negative effect on growth. Another commonly cited requirement for the beneficial effects of investment in human capital to materialize is the prior existence of the essential pre-requisites of capitalism – solid institutions protecting property rights, and access to capital markets. (Braguinsky, 2005). Finally, as we shall see later in this paper, it is possible that a certain social structure may lead to an *allocation* of human capital which is such that this form of capital is not utilized in the most efficient or socially productive way.

In their 2003 paper, Mamuneas et al deal with several of these factors and build a model that examines the returns to human capital across countries, while allowing for non-linearity and taking into account numerous relevant contributing forces. In particular, they account for technology changes, and deal with the impact of political and economic freedom on the output elasticity of human capital<sup>2</sup>. With respect to economic freedoms,

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<sup>2</sup> In other words, their impact on the extent to which human capital will have an effect on growth.

they find significant results concerning the effects of trade orientation on the impact that knowledge has on growth. Their finding constitutes “to the best of our knowledge ... the first systematic empirical confirmation of the often cited proposition that greater exposure to international trade brings access to foreign technology that complements human capital and raises its marginal contribution to aggregate production.” (Mamuneas et al, 2003. p. 14.) In terms of political freedoms, however, the results are not nearly as strong. Following Rodrik, Mamuneas et al take participatory democracy as a meta-institution facilitating all others from Rodrik’s group (property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance, institutions for conflict management), and use political and civic freedoms (according to the Freedom House index) for approximating it. They find no evidence that having more of these freedoms improves factor productivity. As we are dealing with Serbia in this paper, we will be looking at a country with a very poor record on both economic freedoms (mainly due to the international sanctions) and political liberties (over five decades of authoritarian rule), and we shall see that the latter was very important as well, which means that the lack of political freedom either had an indirect effect not captured by the study, or that it affected the stock, or quantity of human capital rather than its impact on growth.

The main and most relevant conclusion of Mamuneas et al is that the social returns to human capital can be either higher or lower than the private returns. The former will be the case if more human capital leads to technological progress or to a reduction in counter-productive social variables such as crime or corruption, or at least to “more informed political decisions”, while the latter will occur if education fails to improve productivity and only raises one’s social status. In addition, they find that the social returns on human capital are highest in high-income economies (especially the Asian Tiger economies very open to international trade), while they are mostly zero (and in some cases even negative) in lower-income economies – leading to the conclusion that high-income countries face certain positive externalities not present in low-income ones. An important role here could be played by the quality of education in these countries relative to the lower-income ones.

Within the European Union, the need to meet the challenge of the emerging knowledge-based economy has been recognized, and numerous measures and initiatives dealing with employment in the EU exist. In other words, the challenge has become identifying

the particular kind of investment into knowledge that will yield positive social returns. The need to invest in human capital was particularly outlined in the White Book on Growth, Competitiveness, and Employment (Delors, 1993) emphasizing four main areas of concern: entrepreneurship, employability, adaptability, and equal opportunities. In addition, active labor market policies and their coordination are essential within the EU, especially with respect to the free movement of labor, making this a community concern. Labor mobility is thus a question of great importance, whereby elimination of legal and administrative barriers, facilitation of language knowledge, cooperation in education policies, mutual recognition of qualifications, as well as a common approach immigration all become vital in achieving the Union's goals of improved economic performance and balanced regional development.

This paper tackles most of these concerns and applies them to the context of Serbia, a country currently undergoing economic and political transformation and aspiring to EU membership in the future.

## Introducing Serbia

Serbia entered the transition process in October 2000, after the massive electoral victory for democratic forces ended the thirteen-year authoritarian rule of Slobodan Milosevic. Prior to that period, it was one of six republics of the Socialist Federative Republic of Yugoslavia (SFRY), and through it enjoyed a very peculiar status in the Cold War world. As a communist one-party system, it was naturally linked and ideologically very close to the block of Eastern European countries controlled by the Soviet Union. On the other hand, its breed of socialism was home-grown under the leadership of Josip Broz Tito<sup>3</sup>, who severed all direct political and military links to the USSR already in 1948. The country went through the Cold War as officially unaligned with either side (it was the founder and only European member of the Movement of Non-Aligned Nations), and this status allowed it the economic benefits of trade with both sides of the iron curtain, as well as generous direct assistance from the United States of America. In addition, Yugoslavia's economic system was considerably more market-oriented than that of other socialist countries – never a real command economy, many of its 'socially' owned companies actually produced profits, its agriculture was not collectivized, and the standard of living of its population was quite high. When in 1989 communism began to collapse across Eastern Europe, however, Yugoslavia found itself in an unsustainable situation. While it might have been the socialist country that would have adapted to capitalism and democracy the easiest, it ended up starting the reform process last and in much poorer shape than most other post-communist countries had been in in 1989. Serbia thus has a mixed pre-transition legacy: part of it can be traced to the period of state socialism and is, on the one hand, burdened with problems fairly similar to the challenges that other post-communist countries faced<sup>4</sup> and, on the other, keeps within it some elements of a market economy and a liberal political regime, which should presumably facilitate the transition. The other part of Serbia's pre-transition legacy

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<sup>3</sup> An important figure in the Yugoslav fight against fascism, Tito emerged as the creator of post-war Yugoslavia and ruled it almost single-handedly until his death in 1980.

<sup>4</sup> Such as the ownership structure, inefficient and obsolete production methods, out-of-date structure of the economy (focus on heavy industry), remnants of principles of economic autarchy, extremely strong trade unions, and other issues stemming from decades of forced wage equality. Reforms result in shocks caused by price liberalization, privatization, bank reform, opening up markets to foreign competition, lack of qualified staff, rising unemployment and inflation, and the emergence of previously unknown income inequality, all creating a large group of transition losers.

comes from the period between 1990 and 2000, and it is marked by conflict, international isolation, massive population movements, economic collapse, and overall societal decay.

The former part of this legacy allows us a basis for comparative analysis – as members of the camp formerly known as Eastern Europe each followed vastly different paths along their way of restructuring and reform from essentially quite similar systems, there is a great body of material to draw from for formulating conclusions and analyzing various choices and mistakes. Having another former Yugoslav republic, Slovenia, aboard the block of countries that are today part of the European Union, is an additional aid to understanding the processes taking place along the transition from this particular type of socialism. On the other hand, the numerous problems stemming from the decade of conflict and isolation pose a considerably greater analytical challenge. In addition to the fact that these developments occurred much more recently and that the vast majority of their implications have yet to be enumerated, documented, and quantified, there is very little basis for reasonable comparison. The countries that were themselves involved in the conflict, such as Croatia and Bosnia-Herzegovina, are both still grasping the impact it had had on their development, and the divergence stemming from the different shape and nature that the conflict had in each of them pose an additional challenge (referring to which of them experienced the most actual fighting on its territory, which of them met with resulting population exoduses or inflows, which of them faced the greatest changes in their political/administrative structure as a result of the conflict, and the very different dominant interpretations of their own role in the conflict).

While no actual hostility took place on Serbian soil (with the exceptions of the guerilla war led in Kosovo in late 1998 and the first half of 1999, and the 1999 NATO air strikes that cannot really be classified as "fighting"), the war was acutely felt throughout the period. The most direct and visible consequences of the 1990's devastation were economic ones. Over the course of the decade, Serbia attained the following: the title of world champion in monthly inflation (January 1994:  $3.13 \times 10^8$  % per month, over 60% per day, around 2% per hour), the highest nominal-value banknote ever printed (500,000,000,000 Yugoslav dinars), United Nations-imposed economic sanctions, and one of the biggest organized robberies in recent history – the state's debt to the population based on the citizens' old foreign currency savings accounts exceeded 7

billion deutsche marks. In addition, two banking pyramid schemes rose and fell in the form of Jugoscandic and Dafiment banks – the former taking off with around DEM 300 million of the population's money and the latter with around DEM 1 billion – both of them owned by people very close to president Milosević. (G17, 2000).

The social breakdown that accompanied the economic collapse is more difficult to quantify, but its impact will be felt, at best, just as severely. One very concrete development is the huge population movement – Serbia and Montenegro is among the countries with the highest number of refugees and internally displaced persons (IDPs) in Europe – a total of over 600,000 (according to the UNHCR, 377,000 and 262,000, respectively). Outward flows are harder to estimate, but they have certainly been just as remarkable (see Part III). Another aspect was a complete shift in the allocation of wealth and power and a complete mismatch between the socially and economically 'higher' classes – this status inconsistency in Serbia was quite far removed from the transition paradox described by Csepeli and Orkeny as the shift "from unjust equality to just inequality" (1992). While the bulk of the population was impoverished, a small group of people greatly capitalized – a class of *nouveau riche* was created, eager to show off the hold it had on all official sources of authority. With a tremendous rise in crime, the second half of the 90's saw the proliferation and consolidation of this class, which had by 1999 fully established itself as economically superior, politically connected, and socially as the chief creator of norms and values. While a somewhat similar development took place in many other transition countries (and would seem to be a reasonably expectable side-effect of liberalization), in Serbia this was not merely a class of persons who profited by manipulating their social position in privatization processes (although such cases are, of course, present as well). It was a class heavily involved in wars and atrocities, some of them from deep within the hierarchy of police and military forces. This is a crucial element, since it not only legitimized this class as the elite in a time of conflict, but also made it much more difficult to dismantle, by raising the stakes they had in maintaining their status.

The effect this has had on the dominant value system is multi-faceted and complex, but it certainly contributed to creating a general conviction that personal talent and effort do not pay off, that the truly clever and able people are the ones using manipulation and illegal activities for personal gain, and that whoever held a claim on substantial wealth could not have acquired it in an honest way. A key consequence of this kind of value

system is the reluctance to invest in personal improvement and the disbelief in the effectiveness of education and training. This view was officially encouraged by diminishing shares of GDP invested in education and the overall disregard of this sector by the authorities.

When in 2001 a democratic government was formed, its scope for thorough reform was drastically limited by the consequences of the systematic social devastation of the country. With a strong drive and high aims, the government quickly caused a panic in the segments of society that had come to consider themselves completely untouchable. A painfully clear message was the assassination of Prime Minister Zoran Đinđić, the chief engine and main driving force of reform, on March 12<sup>th</sup>, 2003. While the result was clearly not what those who shot him had hoped for, the pace of change certainly decreased since then, and some of the formerly threatened groups had been restored to safety.

With respect to the labor market, the effects of all of the mentioned developments are clearly visible. While employment in the country followed a steady increasing path from World War II to 1989, throughout the 1990's, labor in Serbia underwent shocks and disruptions similar to those facing other segments of the economy. Marked by a severe reduction in economic activity, this period also saw the lack of necessary economic reforms and structural adjustments, and the huge flows of people (in the form of the influx of refugees and internally displaced persons as well as the outflow of skilled workers) created a highly unstable labor supply, in terms of both volume and structure. Official labor market policies had the sole purpose of protecting those employed in state and public enterprises (who represented the bulk of the electoral pool and the main pillar of political support to the incumbent government), while at the same time the informal, or unofficial, labor market was growing ever so rapidly. (Stojic-Atanasov, 2003).

Five full years into the transition, labor market reform in Serbia is still in its initial phases. Persistently high unemployment continues to be one of its main features – official estimates place it at around 30% (Stojic-Atanasov, 2003), but the real number is quite difficult to estimate and probably differs considerably from the official one. On the one hand, due to the size of the gray economy, many persons are officially registered as unemployed (in order to gain access to the social benefits attached) while they are in fact employed or self-employed; on the other hand, the number of persons officially treated as employed but who are in fact not economically productive at all (i.e. they are

employed only nominally in state-owned enterprises, who place them on long-term, often unpaid leaves of absence in order to avoid formally laying off workers) is considered to be high as well. The Labor Force Survey estimated unemployment in 2004 to be 18.5%.

In terms of the structure of unemployment, the vast majority are secondary school graduates, while a total of 71,823, or 10.8% of the unemployed, have tertiary education (37,063 vocational, 33,248 undergraduate university degree, and 1513 graduate and postgraduate degrees).

Another striking characteristic of the Serbian labor market is the slow decrease of employment in the state and public sectors, accompanied by an even smaller increase in employment in the private sector. In addition, the labor market continues to be marked by large technological surpluses (i.e. persons with outdated skills and qualifications), high participation of the gray economy, low labor mobility, and it is still affected by the large flows of migrants in the 1990's. Flexible forms of labor are relatively rare. (Stojic-Atanasov, 2003).



**PART II. THE ACCUMULATION OF HUMAN CAPITAL: EDUCATION**

### **The Role of Education in the 21<sup>st</sup> Century**

The rise of the information age has made contemporary society different to any that came before it in many ways. In addition to eliminating distance through immensely enhancing communication and increasing the pace of life, the reliance on technology and rapid technological change as a vital economic driving force has rendered growth dependent on education more than ever before. The increasing complexity of life and the specialized knowledge required to manipulate the technology behind much of our development have both placed a significant emphasis on education – more specifically, on adjusting our education so that it is better able to meet the needs of the emerging society where knowledge and skill become ever more important assets.

In this framework, an important shift in the perceived and desired role of education in society occurred. Whereas previously the chief task of education was to facilitate social and intergenerational reproduction, it is now increasingly viewed as the vehicle for creating the human capital necessary for the productive development of society. Accordingly, the new approach to education meant that it was to become inclusive rather than selective – in other words, the emphasis should now be not on selecting the few that should attain the highest education and weeding out those for whom such qualifications would be unnecessary, but on including as many people as possible into the system and pushing them through it as far as possible.

This section of the paper deals with changes in education systems and their functions in the context of human capital on three levels – the broad European and global agenda; the agenda in transition economies, focusing on Central European countries; the agenda in Serbia and the challenges which it is confronted.

## The European Agenda<sup>5</sup>

One important consequence of the inclusive approach to education in terms of system design is a shift of emphasis away from higher education and towards early education, in order to include and retain as many persons as possible. This means considerably greater education expenditures, as well as several important challenges.

The first challenge posed by inclusive education is adapting the system to deal with diversity. Aiming for a 100% enrollment rate in primary education means including many children who were previously not considered a high educational priority – this applies primarily to children with various forms of disability, but in many cases also to other minority groups, such as children of immigrants, girls, or the Roma. The aim of getting the vast majority of children enrolled in primary schooling to continue their education all the way to university level means channeling a lot of energy into an early education that will prepare them for this, which in turn requires a system that will equally prepare children with different learning mechanisms, varied intellectual abilities, and vastly diverse backgrounds. In other words, modifying systems that have hitherto served to identify those who should continue onto the next level of education into systems that naturally take *all* pupils to that level.

In order to find the best possible indicator of the successfulness of different education policies, one needs to first identify the ultimate goals that society needs education to fulfill. With respect to developing human resources and building human capital, the information age has brought with it one key element that has demanded the reform of traditional education systems across Europe – *uncertainty*. The uncertainty in question here refers to the unpredictability of the skills one may need in the future, due to rapid technological changes. In this context, it would make little sense to teach highly specialized knowledge that would become obsolete before one even completed one's schooling. Therefore, one of the key components of the new approach to education is to teach children and pupils certain abilities that will prepare them for grasping and managing new situations and unpredictable problems, rather than to transmit specific

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<sup>5</sup> Due to the very rapid and multi-faceted development in this area, there are precious few integrated overview documents. Rather, this section is based on an extensive list of EU, OECD, and UNESCO documents, each of which deals with a different specific aspect of education development, and therefore they are not included as in-text references. The full list of relevant documents can be found in the bibliography. For the reader's information, the most useful and most comprehensive document for beginning a further survey on education is the Education Council's 2001 report *The Future Concrete Objectives of Education and Training Systems*.

knowledge and particular skills. This challenge is made a little easier by the recent rapid development of psychology and pedagogy, which helped clear our understanding of how people think and react in different problem situations. In addition, a major aim of education is enabling students for continued learning throughout life, through both formal and informal channels.

Taking this as a general guideline for what is expected of modern education in Europe, the most reliable tool for assessing education systems and policy requirements is the OECD's Programme for International Student Assessment (PISA), and analyses of its results. PISA tests are designed to measure precisely the general abilities and transferable skills that are necessary for finding one's way through modern society. With nearly 50 participating countries, it is an excellent guide to what are the policies that successfully achieve the set objectives.

Two rounds of PISA tests have taken place so far – in 2000 and 2003 – and it will continue to take place every three years, with a tendency to attract a larger number of participating countries in each round. The tests are taken by 15-year-olds in their own schools, gauging their abilities in mathematics, reading, science, and problem solving. The tests are designed to create a basis for comparison between countries, but also along particular schools, socio-economic environments, and through time. Unlike the results of national and international competitions in specific areas, PISA measures cross-curricular skills and focuses on the application rather than the presentation of knowledge. In addition, PISA reports about student motivations, learning strategies, and their self-assessment.

The results from both 2000 and 2003 do shed some light on the attainments of different education systems. In particular, as might be expected given that the tests are of a cross-curricular nature, the country results seem to be quite similar for the different areas tested, at least on the top and bottom extremes. For instance, Finland, Hong Kong, and Korea appear at the very top in all of the surveys, while Indonesia, Tunisia, and Mexico are usually on the bottom end. Serbia has only taken part in the 2003 testing, and its students ranked among the bottom in each tested area.

The geographical spread and the socio-cultural disparity between the countries falling into either of these groups are, perhaps, surprising. The OECD has published several comprehensive reports on the results of both testing terms, and has come up with

several clear conclusions. One of the most striking finding of PISA surveys, for instance, is that comprehensive education systems convincingly out-perform systems that involve student tracking. (OECD, 2005). This seems to be in line with the theoretical argument for an inclusive system – systems that group students without selection for an extended time (in Finland, comprehensive education lasts nine years) and postpone both specialization and stratification achieve outstanding results.

Several sub-topics have also gained relevance in the global/European educational context. One of the most important ones is the already mentioned emphasis on *lifelong learning*. Due to the unpredictable nature of future demands on human resources, the formal education one receives needs to be such that it enables one for independently learning new skills in the future – the skills one will need within the future given technological framework. In addition, lifelong learning means that the education system is designed so that it allows transfers between fields and types of education on various levels, rather than closing down opportunities once a student has made a certain choice. This is particularly important when markets are such that an individual may want to change his or her profile several times over a lifetime. In this context, adult education becomes very important as it allows persons to add new skills or qualifications, or to update their knowledge in their own field. One thing that education systems must then do is allow and recognize various forms of informal education, by acknowledging certificates or granting particular programs recognition provided they fulfill certain quality standards.

Another important topic is *quality assurance* in education. Once it is recognized what is meant by education quality (an education that promotes lifelong learning and supplies individuals with the skills and abilities to solve problems in unfamiliar situations), and once the standards for measuring it have been set (first and foremost, the PISA), the imperative of building a system that will produce such quality arises. The challenge is, of course, that such a system needs to be developed indirectly, rather than through top-level directives and orders. It necessitates a complex system of evaluations and self-evaluations of schools, students, and teachers, and then targeted policies and interventions in necessary areas. The results are only visible after a long period of time.

The third big sub-topic in contemporary education debates is the role and position of *teachers*. The main concern here is the impact of the time lag between teachers and students – in essence, the labor force being created in today's schools will only fully take

part in economic activity in a decade or two, while the labor force that is working on its creation has received its education one or two decades ago. How do we prepare teachers today for building skills that will be required by the economy forty years from now?

In essence, the role of teachers in the new education concept changes from merely transmitting knowledge to researching child development, contributing to the creation of the curriculum, and working on self-improvement and own professional development. The curriculum itself should no longer be just a set of facts and skills that students should master by the end of a given year of schooling, but a more flexible system that is partly created by the teachers and schools themselves. For quality standards to be maintained in this setting, the later achievements of students educated according to a certain curriculum are measured and assessed.

A topic cutting across all different areas of debate in education is *accountability*. According to the elitist concept, education was considered a privilege and the existence of schools in the local community was a special advantage to it. Schools as institutions were therefore not commonly held accountable for the long-run development of their pupils. In a democratic concept of education, parents and the local community are treated as stakeholders of the system, whose interests are served by schools, which should in turn become accountable to them. In this framework, the question of the extent of education decentralization becomes an important one – on the one hand, a degree of decentralization is necessary to ensure accountability, but on the other, heavily decentralized systems preclude the possibility of fixing potential problems from the center.

### The New European Dimension

While education is not an area included in the EU domain of common policies, a definite “community paradigm of education policy” (Halász, 2002) has existed for some time, as a necessary supplement to the harmonized, or at least more closely coordinated policies (e.g. employment). The coordination of policies external to education was ultimately what prompted closer attention to be paid to education itself, since it is the key tool in achieving many established EU goals, particularly in the field of employment. Thus, since the 2000 European Council in Lisbon, the paradigm was given a new and more formal life with the extension of the so-called “open method of coordination” (OMC) to

education, extended to the candidate (now member) countries in 2002. The key envisaged value of this approach is its facilitation of policy learning, while at the same time respecting treaty provisions that place education strictly into the national domain. Under OMC, education *systems* rather than *policies* are harmonized, with international comparisons putting pressure on countries to adopt some of the best practices that may emerge. (Halász, 2003).

The new EU member states from Central Europe bring with them their own experiences and expectations in this area, many of which might pull away from greater integration. As we explain below, education for these countries played a significant symbolic role in reasserting their national independence following the fall of communism, and they have already raised voices against the perceived "federalization" of Europe in other areas. However, the EU has also played a significant role in helping these countries' education reforms financially throughout the transition period, and the initial resistance is not likely to be a serious impediment since the EU is unlikely to move towards closer harmonization of education policies. A more important issue might be building the capacity of the new member countries for working with the new mechanisms of "democratic experimentalism"<sup>6</sup>.

However, by far the most relevant educational area in the EU perspective concerns the transferability of higher education. The so-called Bologna Process is seen as leading to an ever-so-quickly emerging European Higher Education Area (EHEA), and already the 1998 Sorbonne declaration recognized it "as a key way to promote citizens' mobility and employability and the Continent's overall development." In the 1999 Bologna Declaration, the 29 signatories outlined specific objectives that they pledged to achieve by 2010:

- Adoption of a system of easily readable and comparable degrees
- Adoption of a system essentially based on two main cycles, undergraduate and graduate
- Establishment of a system of credits - such as in the ECTS<sup>7</sup> system
- Promotion of mobility by overcoming obstacles to the effective exercise of free movement
- Promotion of European co-operation in quality assurance

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<sup>6</sup> The *political* learning involved in the processes of democratic transition and European integration (Sabel, 2001)

<sup>7</sup> European Credit Transfer System

- Promotion of the necessary European dimensions in higher education

The pledge was underpinned by the shared belief that “a Europe of Knowledge is now widely recognized as an irreplaceable factor for social and human growth and as an indispensable component to consolidate and enrich the European citizenship, capable of giving its citizens the necessary competencies to face the challenges of the new millennium, together with an awareness of shared values and belonging to a common social and cultural space.”

Since the signing of the Declaration in 1999, many new interested countries joined the process (totaling 45 after the 2005 Bergen meeting), and the agenda itself expanded to include the promotion of lifelong learning, the involvement of higher education institutions and students, the promotion of the attractiveness of the EHEA (Prague Communiqué), as well as doctoral studies and the promotion of closer links between the EHEA and the ERA (European Research Area) in the building of the “Europe of Knowledge” (Berlin Communiqué).

Let us now take a look at how these compare to the key developments in education in post-communist transition economies, and then in Serbia itself.



## Education in Transition

In a 2002 overview of the changes taking place in the education systems of post-communist countries since 1989, Johanna Crighton described the current state of education in the region with these words: "The unchanging classroom has ... become a symbol of comfort and stability, presided over by middle-aged women tired of 'reform' without resources, who see their first duty not as innovation but to the safe-keeping of children, old-fashioned values like discipline and the unchanging 'correctness' of textbooks and timetables in a sea of chaotic change." (Crighton, 2002). Such a description draws a picture of Central European education that is indeed grim – one that implies that if any changes have taken place at all, they were only cosmetic and the essence of the system is still the same, the "unchanging classroom".

Before one leaps to a strong criticism of education policy reforms in the region, however, it would do one good to be aware of the difference between the indicators pointing to the characteristics of education policy, and those depicting current education as such. (Halász, 2003). Education policy not only necessitates an entirely different method of evaluation than, say, that used for assessing current education quality, but it is also a very long-term commitment that cannot be truthfully assessed by its immediate results.<sup>8</sup> Indeed, current education will almost never reflect the current education policy, except in cases where the latter has been stagnant for a long time. Nevertheless, we would still anticipate that, in transition, at least some changes ought to have taken place quite quickly, and that school atmosphere should certainly be among them – in other words, classrooms should by now be bustling workplaces striving to develop a culture of learning, and certainly not "symbol[s] of comfort and stability".

In this section, we look at the developments in the education systems of Central European countries since 1989. We examine the approach taken to reforming this fundamental sector, the typical circumstances surrounding the reform, the main stages of the process, the key areas undergoing change, as well as the impact of the changing international environment of education in the European context. We assess the challenges faced by countries of the region in tackling the field of education, and the main methods selected for dealing with them.

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<sup>8</sup> In fact, Radó (2001) has suggested that in situations of reform, quality is likely to decline rather than improve in the first period of transition.

As we made clear in the previous section, education reform is certainly not peculiar to post-communist transition countries. Unlike political democratization, privatization of the economy, or nation-building, it is not an obvious area in which extensive and deep systemic change is on first sight necessary for successful transition and integration into the democratic capitalist world. However, already a brief second-order analysis clearly showed that an education system that would be able to successfully support the new economic and political order needed to be dramatically different from the one created to sustain a command economy, which itself had not adapted to the changes that have been taking place across the globe for several decades. It was also clear that this could not be achieved by a mere elimination of the ideological elements of the previous regime from the curricula or even by more far-reaching content changes if conducted on their own. What was necessary was a fundamental overhaul of the structure of the system of education provision and all of its components, including content, roles of key actors and stakeholders, management methods, and system of governance, beginning with a clear vision of the aims of education in the new democratic system. Most post-communist countries in Europe have taken serious steps towards thoroughly restructuring their education systems for meeting their new goals, and all of the new European Union member countries among them have come a long way along the path of education reform.

In fact, reform of the education sector has turned out to be just as, if not more complex than reforms in other, more conspicuous elements of the new system. The reforms carried out in these countries bear very little similarity to education reforms conducted in the developed countries of the west, in terms of scope, extent, motivating forces, limiting factors, and the timeframe in which they were conducted. Like the transition itself, education in transition finds itself most of the time in completely uncharted territory, in an uncertain political and social environment, and under high pressure to conduct fundamental changes with little strategic guidance and insufficient support from the overall system of governance.

### The External Environment of Education Reform

Let us first look at the climate in which education reforms have commenced and developed in most of the countries in question. One of the first noticeable features is that, simultaneously with the grim view of education in the region illustrated by the quotation in the opening paragraph of this section, there is a surprising degree of

popular satisfaction with the system. While most other structural problems are generally recognized for what they are, education has continued to be a source of pride for many countries in the region. (Rado, 2002). The typical view is that the above-standard education or "brainpower" is the only comparative advantage these countries have vis-à-vis the west.

Such an image is the result of the different approach that most people in the region use to evaluate education effectiveness, which is reflected in quantitative rather than qualitative measures of education success (very roughly, the number of people that acquire an education and the number of years they spend in the system, rather than the practical value of the education they receive), as well as in a tendency to value factual and abstract knowledge over practical skills applicable in everyday life. Thus for many Central Europeans, the high enrolment and completion rates and the relative success of students from the region on international olimpyads (primarily in mathematics and science) are sufficient signs that their education systems are fulfilling their duty and that the only conceivable problem with them is insufficient funding. Many such convictions remained firmly in place even after the first international evaluations of the practical skills of 15-year-olds from the region (the 2000 PISA testing) showed disappointing results. These uncritical beliefs continue to pose a problem to policy-makers striving to improve the education and training systems in their respective countries. (Rado, 2002).

In terms of the typical theoretical conceptualizations of education policy and reform in the region, Rado distinguishes between four general approaches: egalitarian, elitist, free market, and democratic, corresponding respectively to emphases on "the same for all", "quality for those who deserve it", "quality for those who can afford it", and "quality for all". (Rado, 2001, p.21). The common feature of these approaches (the importance of which varies across the region) is that their very diversity tends to work against accepting policy advice and recommendations from developed countries or institutions perceived as "western", since they are seen as threatening the national educational traditions.

A key difference from education reforms in developed countries is not only the far-reaching structural nature of the reforms in Central Europe, but also that reform moves which otherwise might logically follow one after another in a stable system, here needed to all be made at the same time. In addition, since the socio-economic system that education is supposed to serve was itself in the process of being created simultaneously

as education was being changed to adapt to it, the education system has necessarily been shaped "in anticipation" and not only in response to its outside environment. This means that policy makers have often had to return to initial solutions and sometimes change them completely, to reflect developments in other sectors of society.

Another problem peculiar to post-communist nations is the absence of a vision of overall human capital development of the nation, and indeed the absence of a history of strategic thinking in the isolated policy components that exist in its place. In all of the countries in question, the social, labor, and education policies are fully independent of each other and appropriate regular communication channels between them have not been adequately set up. In addition, within these sectors, there is hardly any previous experience of strategic planning to draw on, since according to the socialist ideology these sectors were "unproductive", represented merely the "superstructure" to the economic base, and thus necessitated no systemic strategic approach to them. (Radó, 2001).

Due partly to this legacy, the main tone of the post-1989 education reforms was political and ideological, aiming to free education of political (party) control, to establish legitimacy in the system, and to build an education that is able to assist with the project of nation-building. These were the overriding tasks of the first stage of education reform in these countries, as we will see in the next sub-section.

Finally, an immensely important disadvantage of undertaking education reform in the course and as a component of an overall socio-economic transformation is the absence of reliable information on the system of education and indeed of any established mechanism for transmitting the information that does exist through the system. Whereas the reforms that take place in education in the west usually stem from a long process of deconstruction that includes systematic research, evaluation, and information sharing (indeed, more serious reform is usually not even considered unless the information regularly gathered points to a problem in the existing system), in countries of Central Europe education reform takes place "in the dark", and laying the foundations for informed policy making is in fact one of its aims, as part of the overall process of transition. (Radó, 2001).

However, we should also mention that the transition situation brings some benefits for education reformers as well. Firstly, the long stagnation in the field means that these

countries might now be able to skip several stages in building a modern education system, feeding on the experiences that other countries gained over many years of gradual reconstruction. Second, the 1989 revolution generated an immense amount of positive energy in the region, which meant both that public support for far-reaching changes was easier to ensure than it might have been the case had the system been in a more stable situation, and that many participants in education were keen to put their creativity to test, after having followed central orders for so long. (Rado, 2001).

### The Main Stages of Post-Communist Education Reform

Three general stages of education reforms in Central Europe are usually identified. We have already mentioned that in the immediate aftermath of the systemic change, there is likely to be great momentum but little resembling a strong vision – the education system typically followed the changes taking place in other sectors, which initially had to do with the two key aspects of democratization and privatization. In education, this primarily meant wiping out all elements of communist ideology and eliminating the tight controls over the system, as well as the emergence of private education; some of these elements were codified in the new education laws that also characterized this first stage (typically occurring in the 1991-1993 period). (Rado, 2001). In addition, in line with the emphasis on national revival, there was also a strong trend present towards seeking out traditions from the pre-communist period and building them into the system (Crighton, 2002), as can be seen for instance in the emergence of numerous church-operated schools (Rado, 2001). Another feature of the first stage of reform is the strongly felt participation of actors that are in some way external to the national education system, such as nongovernmental and international organizations. (Crighton, 2002). Finally, most countries commenced extensive decentralization efforts in this stage, as part of the democratization drive.

The second stage is where an actual comprehensive policy takes shape. Papers are written, strategies drafted, and proposals made, and the system gradually becomes more coherent. Finally, in the third stage, which some countries are already in, the solutions made are revisited, feedback is analyzed, and changes are made where necessary. (Rado, 2001).

### The Key Areas of Education Policy in Transition

Radó defines five key areas in which education reforms have taken place during the transition: (1) Decentralization and liberalization; (2) Education quality; (3) Ties between education and the labor market; (4) Education financing; (5) Equity. (Radó, 2001). Let us briefly look into each of them.

As mentioned, *decentralization* was among the changes many countries initiated already in the earliest stages of reform; in certain ways, in these early stages decentralization may have been considered somewhat of a panacea for education issues and later needed to be more thoroughly worked out. The process essentially refers to introducing government sharing of responsibility with other actors to a greater extent (and not merely to changing the position within the system of government where decisions are made), and it was conducted by two principal routes. The first, termed the "democratic-political management system" (Radó, 2001, p. 66), emphasizes the political dimension and is based on the notion that educational decision-makers and decision-making bodies require legitimacy – thus they are typically selected on elections. A shortcoming of this approach, taken by Poland and Hungary, is that the bodies so elected often lack management capacity, particularly at lower levels. The second approach, the "administrative-professional management system" (Radó, 2001, p. 66) resolves this problem by making appointments on the basis of professional expertise, but suffers from a democratic deficit in governance. This is the approach adopted by the Czech Republic and Slovenia.

Closely related to decentralization is what Radó calls *liberalization*, referring essentially to the inclusion of actors other than the state, namely markets and NGOs, and to widening the choice of the modes of education provision on offer through marketization.

The second broad policy area is *quality*. We have already dealt with the perception of education quality that was common in these countries in the beginning of the transition in the first parts of this chapter. Here we can reiterate that the approach that worked well in a command economy and that focused on factual knowledge and allowed for little application of practical and problem-solving skills left very deep marks on student performance. The new concept of quality is very broad and differs significantly from the previous concept of a "high standard" education; this much is certainly true of other European countries as well. According to this new definition, quality means not better

average academic achievement, but rather “that students successfully acquire the key competencies needed for work and daily life, in addition to the desire and motivation to learn.” (Halász, 2002).

In Central Europe, incorporating the new concept of quality into education policy means entirely changing the teaching environment and moving to a “differentiated classroom”, characterized by flexibility, acknowledgement of differences, an individual approach to learning, ongoing and varied assessment, variety of methods and materials, responsiveness to student needs and interests, sensitivity to special needs, and an interactive approach. In addition to the necessary changes in pedagogical methodology, quality concerns in the region include adjusting education aims to the changing needs of society and the expectations of parents and children, making the student assessment system objective, reliable, and valid, as well as placing teachers in new roles and therefore reforming the system of their education and in-service training. Concerning teachers, the new vision includes the following key characteristics: expertise, pedagogical know-how, understanding of technology, organizational competence and collaboration, flexibility, mobility, and openness. Finally, the question of regulating the content of education, by means of curricula, standards, or assessment, and the extent of its possible and/or desirable decentralization, is a quality concern in its own right. (Radó, 2001).

An area of equal importance as quality is the closer alignment of education to the *labor markets* in the region. One of the consequences of the rapid economic opening and transformation in these countries is that their education systems, which necessarily require a much longer time to transform, lag behind their new economic needs and gradually begin to hold back further development. This is due to the twofold effect of the economic transition, whereby the economy develops and needs an additional supply of skilled labor, and at the same time, education in itself gains economic value – with wage liberalization, the returns on education rose suddenly and dramatically. In the process of adjusting to the new labor market (characterized by more self-employment and part-time work, a growing share of small and medium enterprises, increasingly spreading information and communication technologies, and higher labor mobility), three aspects of the adjustment need to be dealt with. These are: (1) modernization, referring primarily to updating the content of education so as to better prepare students for work; (2) structural reform, referring to school structure and the different education types and levels (in our

region, mainly the problem of the rigid division between general, vocational, and technical secondary education, hindering the expansion of tertiary education); and (3) systemic reform, meaning primarily the different institutional and governance arrangements facilitating relations between education and employment (one important issue for systemic reform was already mentioned in this chapter – the need to better integrate the policy sectors of labor, economic development, and education, in order to generate a comprehensive approach to human capital development). (Grootings, 1995, quoted in Radó, 2001).

Education financing is a permanent concern of education systems worldwide, and even more so in the former centrally planned economies of Central Europe, where the sector's inflows were reduced due to the general economic decline during the transition, although most governments strove to maintain education a priority. The difficulty is that the education systems in these countries are typically extremely inefficient, as they do not fit into the new economic structure and have no legacy of concerns over efficiency in the past. Other than searching for additional sources of funds for education, governments have the options to reform their systems of resource allocation (e.g. adopting a per-pupil financing formula) to make them more efficient, or to resort to policies designed to decrease costs. A difficulty with the latter is that it is likely to be quite tricky politically and that it requires a considerable initial investment in order to reap the benefits in the future. Finally, a key consideration is the cost-effectiveness of the education system (i.e. how does public investment into the system translate into learning, systemic, labor market, and social outcomes), which remains to be explored in the future, when more information is generated to aid its measurement. (Rado, 2001).

Finally, the policy area in which probably the least progress took place is education *equity*. After five decades of living in a system that declared itself as first and foremost fair and equitable, education in the region today reflects both the hidden inequality that existed throughout the period of state socialism and the new and intensified differences in status based on financial condition, ethnicity, gender, and physical or mental condition. So far, countries of the region have dealt with equity issues almost solely through adopting structural reforms such as centralization, standardization, or tougher education input regulation. Most experiences of other countries indicate that such policies usually do not improve the situation, and may worsen it; instead, policies that tackle the roots rather than the results of poor equity are needed. Governments need to



build the capacity of their education systems to account for individual learning needs (e.g. children with disability) and to adapt to the needs of various groups in education (e.g. minorities, most notably the Roma). A whole range of issues remain to be dealt with in this area, from overall quality assurance, assessment and evaluation that would identify inequalities, handling regional disparities, and dealing with discrimination, to providing the conditions for multicultural leaning, integrating students with special needs into regular education, providing financial assistance, and generally creating an inclusive system of education. (Rado, 2001).

In this section, we showed some of the key aspects of education reform during transition – an endeavor both quantitatively and qualitatively different from the education reforms that often take place in developed countries. We saw that, while the initial conditions for reform may not have been altogether favorable (due mainly to the popular perceptions of education and the path dependency of various formal and informal institutions), there were also some early strengths of the education systems in Central Europe, as well as some benefits to be utilized. One of the key problems of education in the region, which persists to this day, is the lack of a comprehensive vision of human capital development: the policies that should be coordinated to jointly help build this unique form of capital in the region are instead typically fragmented and conducted in isolation from each other.

Let us now look at the problems Serbia is facing more narrowly, while bearing in mind that the external environment of education reform in Serbia, and thus some of its main challenges, closely resembles that of the transition economies described at the beginning of this section. The actual developments within the system differ, however, and the following section presents the details of their implications.

## Education Dilemmas in Serbia

In dealing with education in Serbia, one must begin by returning to the basic distinction between the two approaches mentioned in the beginning of this chapter. One approach sees education as a vehicle for social and intergenerational reproduction, while the other assigns it a role in building the human resources of a country and so contributing to its economic development and social cohesion. One can safely say that, today, it is still unclear which of these two approaches is followed by the Serbian education system.

Some of the problems of education in Serbia are shared by all former East European countries – the legacy of a long period of state monopoly over education; the low level of education investment; the heritage of numerous state-driven “reforms” (nominal, rather than systemic) the main effect of which is a general reluctance to reform and a perception of reforms in education as uncalled-for “experiments”; the neglect of the development function of education; the lack of student and teacher mobility; the legacy of curricula that are not applicable in practice and in life after schooling. However, as we shall see in this section, there are also a series of peculiarities and added challenges to reform in this country. Let us begin with a brief overview of the system and the background to its current state.

### Education System Overview

The education sector in Serbia includes preschool, primary, secondary, and tertiary schooling, engaging 1.2 million children and youth and employing 120,000 – altogether directly involving nearly 20% of the total population<sup>9</sup>. The basic structure of the system is as follows:

- Non-compulsory preschool education, attended by approximately 25% of pre-school aged children<sup>10</sup>
- Eight years compulsory primary education – children are enrolled in the year in which they turn seven years of age, and the system is comprehensive in terms of

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<sup>9</sup> As elsewhere in this paper, the figures refer to Serbia without Kosovo. Montenegro, which together with Serbia forms the State Union of Serbia and Montenegro, has a separate education system and no federal education authority exists.

<sup>10</sup> The 2003 Law on the Bases of the Education System planned for the introduction of compulsory preschool education as of 2007; the amendments to the law introduced by the new government in 2004 moved this forward to 2006 – however, since the preparations for this innovation are likely to require a substantial period of time, it is uncertain whether the government will be able to meet this self-imposed deadline.

ability, gender, and specialization. At the end of primary schooling, students pass an internal (school-developed) graduation exam ("matura") and only those wishing to pursue secondary education take entrance exams. There is no general external leaving examination.

- Selection is first introduced upon enrolment into secondary education: based on their primary school grades and/or an entrance examination, students enroll into general secondary schools (gymnasiums) which last four years, or vocational schools which last either three or four years. In gymnasiums, students take a general graduation exam at the end, but again there is no integrated external leaving examination.
- Tertiary education is split between academic higher education (universities) and vocational "further" education. The former lasts eight to ten semesters (with two semesters per academic year), and the latter four semesters. Enrollment into both is typically based on a combination of secondary school results and an entrance examination.
- The private sector is not well developed. Excluding international schools, there are 6 private universities (each with several faculties), 4 independent faculties, 14 post-secondary vocational schools (mainly sport management and beauty schools), 15 secondary schools, and one primary school. Private primary schools have only been legally allowed in 2003. (Kovács et al, 2005).

Concerning mobility within the system, around 90% of those who complete primary schooling enroll into secondary schools, and about 25% into tertiary education. The drop-out rates are quite high at all levels, however, especially at tertiary level, and at secondary especially among members of the Roma community, in rural areas, among children whose parents are of a lower socio-economic standing, and among girls. (Kovács et al, 2005).

The language of instruction is typically Serbian; however, in areas also inhabited by national and ethnic minorities, primary education must be fully provided in the language of the minority as well – this is the case with Hungarian, Albanian, Slovak, Romanian, Ruthenian, and Croatian languages; instruction of Bulgarian and Romany only as mother tongue subjects is optionally available. (MOES, 2002).

After this very general and brief overview of the structure of the system, we should explain that there are currently three forces that can be traced in current developments in education. First, there is still a very strong legacy of the system prior to 1990, since the basic structure outlined above has not been changed since that period. Second, the 1990's saw a sharp decline in education investment and spending (more than proportionate to the contraction in the GDP), as well as strong centralization of the system, and both of these trends are still felt in education today. Finally, the post-2000 period saw the introduction of first far-reaching systemic reforms in education, then their partial abolishment and return to the 90's and 80's system in some areas following government change in 2004, and finally also some re-instatement of the reforms commenced in 2001, notably in the field of higher education.

That the Serbian education system is in desperate need for reform needs no special explaining. As we have seen above, even the systems of far more market-responsive countries in Europe have undergone major reforms recently, or are still undergoing them, and the system in Serbia has been additionally devastated by the economic and social collapse of the 1990's. In addition, education in this country has the added task of supporting its journey through democratization and international integration – much more fundamentally so than, say, the European higher education reforms through the Bologna process.

During the period of Slobodan Milošević's rule, education suffered extreme cuts in financing. With the decline in the GDP and the influx of a large number of refugees, per pupil spending fell sharply – most notably in secondary education, where it shrank by 57% between 1990 and 1999. This was reflected in the overall decline of education quality, and most conspicuously in teacher salaries, which in October 2000 amounted to roughly USD 1.00 per day (increasing to roughly USD 130 per month in the next year, and today amounting to roughly EUR 250 per month). (MOES, 2002)

In terms of education effectiveness, the signals sent from the first international tests in which Serbia participated (PISA and TIMSS<sup>11</sup>, both in 2003), simultaneously the first real evaluations of the outcomes of the education system, could not be any clearer. On PISA, Serbia ranked among the worst in all of the areas tested, indicating that its students did not possess the basic analytical or problem-solving skills. The TIMSS

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<sup>11</sup> TIMSS - Trends in International Mathematics and Science Study

showed that students from Serbia possessed an above-average ability to absorb and memorize data, but were far below average in applying their knowledge to solve specific problems.

Long before these results were made public, however, there have been clearly observable signs that the education system is not effective. One such indicator is the average length of university study – while most undergraduate programs last four years, students typically spend seven to eight years at university before graduating. (Kovács et al, 2005). With university education, a further problem is the inability to gauge the actual drop-out rate of each generation, since the number of graduates per year is not measured against the number of students enrolled in their generation.

Primary and secondary education also lack a systemic monitoring of output. Prior to the reforms of 2001, absolutely no achievement indicators were even planned on being introduced, while it was well known that students typically relied on additional privately taken classes to provide the knowledge their schools required but failed to supply – pointing to a system that is not only ineffective, but also highly inequitable, where student performance is closely tied to their parents' socio-economic status. It is estimated that around 30% of secondary school students use private tutoring, and about 10% of primary school students. (Kovacs et al, 2005).

Another vital component of the education system that was entirely neglected in the past is teacher education and training. Teachers receive very little preparation for their pedagogical roles in schools, since their initial training is based almost entirely on the study of academic disciplines – there is no professional education aimed specifically for teachers, except for teachers of the first four years of primary schooling. In addition, the in-service professional development system is such that teachers are not required to take part in it, and even when they do, its results are not adequately monitored. Unsurprisingly then, the role of teachers in schools is fully reduced to implementing (or rather transmitting) a centrally determined curriculum – there is no room left for teacher initiative or participative learning. (MOES, 2002)

Finally, the Serbian education system suffers from a very poor physical infrastructure. While many schools were fully refurbished after 2001 with the help of the European Agency for Reconstruction (EAR), a large proportion still lack a library and very few have a proper ICT infrastructure (in 2001, one computer was present per 230 primary school

students and per 64 secondary school students; 20% of secondary schools had any form of internet access, and only a few had uninterrupted access to it). Universities also lack adequate ICT, as well as laboratory equipment and libraries, but here there are significant differences between faculties as some are better able to secure funds from outside sources than are others. (MOES, 2002).

### The Education System after 2001

As the first democratic government took office in 2001, education reform was quickly set as one of the top priorities for the country's economic and social recovery. A team of experts, psychologists and pedagogues previously involved in various NGO's that fostered education development and implemented numerous workshops and seminars to promote creative and participative approaches to learning, was gathered in the Ministry of Education and Sports (MOES) with the task of developing an education system that would support the democratic development of the country.

The new ministry set its goal as the "three Ds": decentralizing, democratizing, and depoliticizing the education system. The actual policies to be undertaken were outlined through lengthy public debates and a thorough discussion process with education stakeholders entitled the Roundtables on Reform (ROR). The ROR took place in October and November 2001 in 65 towns in Serbia, included 8,600 participants (among them parents, students, teachers, school principals, school psychologists and pedagogues, members of school boards and local community representatives) and concerned the key issues of education reform: school democratization, curriculum reform, teacher training and professional development, and evaluation. (MOES, 2002). Based on the results of these discussions, as well as on debates within professional circles dealing with education and experiences of other European countries, in 2002 the MOES came up with a key strategy document outlining the direction of the reform in detail, *Quality Education for All – the Way to a Developed Society*. On the basis of this and several other policy papers, a new Law on the Bases of the Education System was passed in parliament in 2003.

The key features of the new law included an extension of compulsory education to nine years, grouped into three three-year cycles each with its own aims and outcomes, a thorough curriculum reform that introduced elements that were to be developed by schools themselves, a new role for teachers within this decentralized system

accompanied by a well-developed mechanism for teacher licensing and advancement based on professional development, and the establishment of an Education Council and a series of centers that would carry on the professional work in education regardless of political developments (such as licensing, approving school curricula, and conducting school evaluations). In addition to the law itself, several supporting legal acts were adopted, including the National Core Curriculum for general education, the Specific Curriculum Framework for the first two years of primary education, the Guidebook for Teacher Professional Development, etc. In short, the effort that commenced in 2001 for the first time represented a serious attempt to frame Serbian education in accordance with global and European trends, following the approach to education as a key element in the building of human capital necessary for successful development. The publication *Quality Education for All* explains the role of education in creating human and social capital and presents a solid overview of human capital theory, as well as a clear idea of the direction in which the education reform should go if it is to meet the challenges of the global knowledge economy. In addition, the MOES demonstrated a willingness to improve education equity and for the first time proposed measures dealing with special needs groups, including an affirmative action program for including Roma children into the formal education system.

The modern view of education also began to be expressed in other publications, not directly related to the MOES. One such example is the government's Poverty Reduction Strategy, which placed a strong emphasis on education as a means of investing into the future development of the country. In 2004, after early elections ended the term of the incumbent MOES, the leaving ministry team came up with another lengthy publication, *Quality Education for All – Challenges to the Education Reform in Serbia*. This paper was intended to explain the steps taken once again, and to clarify the path ahead to any new team that would hopefully continue with the reform along similar lines.

The changes implemented in the 2001-2003 period met with surprisingly little resistance and the 2003 Law was passed with the support of all of the parties constituting the so-called "democratic bloc" in Serbia (including the Democratic Party of Serbia, DSS, which by then was an opposition party). However, with the government change in 2004, the education reform suddenly seemed to be among the first things the new government intended to halt. Indeed, one of its first steps was to pass amendments to the 2003 Law that reversed its essence and in fact reinstated some of the solutions from the 1990's

and 80's – the curriculum reform was abandoned, teacher professional development was excluded, primary education was returned to eight years, and the institutions established by the Law were all but officially disbanded. The new education minister came from the neo-conservative clerical wing of the DSS, and introduced these measures without any prior policy analysis, public debate, or professional assessment. Instead, minister Ćolić proudly exclaimed that from now on, the emphasis will again be on *what* children are learning rather than on *how* they are learning. Within a few months, the same minister attempted to abolish donor-financed teacher training seminars (explaining that she did not understand why teachers needed “communication seminars” at all), expounded on the negative influence of computers and the internet on child development, and finally eliminated Darwin's theory of evolution from the primary school curriculum (since it was “no more scientifically sound” than her own belief in Creationism). Although minister Ćolić was forced to resign after this, education reform was hardly continued with vigor. Political influences continued, and the new minister was assigned to the post in exchange for merging his party with the Prime Minister's DSS. While the current approach is not the distinctly clerical insistence on going backwards in education solutions, it is far from understanding the full responsibility played by education in social and economic development.<sup>12</sup> Rather, the solutions offered are the ones that bring with them the most political points, and no radical cuts are proposed.

The one quite progressive move was the adoption of the Higher Education Law in 2005, which, although essentially a watered-down version of the proposal drafted by the previous government, cleared the way for Serbia to join the Bologna process and start implementing the ECTS.

However, the net effect of the recent developments in education has been the creation of a high degree of confusion and misunderstanding in the relevant public (among students, parents, teachers and other education professionals), as well as a diminished interest in educational issues on the part of the general public. The different, indeed conflicting effects of the three significant forces present in education create a highly unstable picture and one cannot say with certainty what the outcome will be. In addition, Serbia also suffers from the distorted public perception of education (like in other post-

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<sup>12</sup> For instance, the new MOES education development strategy paper consists of three pages, listing the general major educational concerns in bullet-point format and offering no policy guidance or direction of any kind.



communist countries, many believe that the sole problem of education in their state is the lack of funds and low teacher salaries), as well as a common reluctance to modernizing reforms that may be seen as threatening the national identity. In the period of 2001-2003, this reluctance was only bridged by a very cautious and democratic approach of the Education Ministry, and in the future the trust of key stakeholders will be one more degree harder to obtain.

**PART III. ACCUMULATION OF HUMAN CAPITAL: EMIGRATION**

### The Flight of Human Capital: Controversial Views

The migration of highly qualified persons across country borders first received considerable public attention in the 1960's. Debates started on the "brain drain" from developing nations to more prosperous ones, chiefly in the form of south-north migration, and concern over the detrimental effects on the economies of sending states was widely expressed. Piyasiri Wickramasekara of the International Labor Office defines brain drain as "the permanent or long-term international emigration of skilled people who have been the subject of considerable education investment by their own societies" (2003). In addition to losing this investment into the education and training of human resources that end up elsewhere, such migration has the negative effect of depriving developing countries of a possibly scarce and very valuable asset – the knowledge and skill required for successful development. While skilled migration is hardly confined to the developing world, its effects are clearly more severe there than in, say, Canada.

In fact, in today's knowledge-driven world, most migration *is* skilled migration. Many destination countries have introduced visa policies especially designed to attract professionals and highly education persons – Canada and Australia have long had a "point system" in place for immigrant visas, and many other countries, including the Czech Republic, are joining them. These systems assign a certain point value to several important variables to ensure that the most desired profile of immigrants will also be the ones most likely to arrive. The variables typically include age, marital status, language ability, education level, years of professional experience, and occupation (with the occupations in short supply in the destination country carrying more points). In addition, migrating can be costly (in terms of direct pecuniary costs, as well as emotional, time, and opportunity costs) and from the point of view of source countries, those who are financially better off (and this usually means those with better jobs and higher educational achievement) will be most likely to leave.

A second generation of brain drain debates was sparked in the 1990's with the increasingly global economic environment drawing with it large movements of skilled individuals, especially those versed in information and communication technologies (ICT). The context of these debates has been very different from that of the 1960's and 70's, however. In addition to globalization and the "information revolution", the population movements of the past decade overlapped with the transition to market economy in a large part of the world, and they also frequently concerned temporary or

circular migration rather than permanent settlement. With this shift came the realization that several positive effects of such migration could be possible. It is this last element that gave rise to a growing body of literature dealing with "brain circulation" rather than "brain drain", and on policies that would facilitate a further shift away from the latter and towards the former.

Namely, more and more studies mentioned the beneficial impact of remittances (money sent by family members residing abroad to their families in the home country), of return capital in the form of foreign direct investment (FDI) on behalf of expatriates, of the positive contribution of an international education when graduates returned to their source countries after acquiring valuable training and experience elsewhere, and clearly a need emerged to reassess the common view that once a country lost some of its people to emigration, they were lost for good.

This chapter will firstly introduce and evaluate the most oft-presented arguments concerning both the negative and the positive aspects of skilled migration as well as commonly suggested policies for managing them (this section), and secondly portray the situation in Serbia using available data and drawing conclusions on the applicability and usefulness of the various arguments for this country (next section).

#### Arguments against skilled emigration

The most straightforward way that outward flows of skilled persons can have a negative impact on their home countries is if they result in a shortage of expertise in certain vital areas of society. If, for instance, all qualified heart surgeons were to leave a given country, the resulting loss in human capital could be devastating. While this may not often be the case in practice, alarming ratios of highly qualified individuals have fled their homes in search of better employment opportunities abroad. For instance, 75% of all Jamaicans with higher education reside in the United States, while three-quarters of all African emigrants have tertiary education. In addition, those who leave are very often not only the *most* educated, but also the *best* educated (e.g. graduates of top schools) and the most qualified in other respects. This is often also the most innovative segment of the population, who would be creating jobs for their compatriots had they stayed in their countries of origin – adding an opportunity cost to the physical decrease in human capital. (The Economist, 2002a)

The fiscal loss of the educational investment into potential emigrés is another direct cost of brain drain – its “fiscal externality” (Docquier and Rapoport, 2005). In many developing countries with net emigration, education is public and this cost is thus borne by the taxpayer. The budgetary loss is additionally exacerbated by the fact that skilled emigrants would have been among the highest wage-earners in their home countries (though they would be earning considerably less in relative terms) and as such would have been among the largest tax contributors. The shrinking of the tax base as a result of brain drain is particularly noteworthy in countries such as India, where the (emigrant) share of the population comprising 0.1% of its population makes for 10% of its national income. (The Economist, 2002b)

Indirectly, the diminished stock of human capital, especially of ‘the cream of the crop’, may result in a long-run lower growth rate and decreased productivity in the source country, as we saw in the previous chapter. This “intergenerational externality” of brain drain is matched by an intragenerational one – the possibly lower wages and productivity of the unskilled labor remaining in the country, due to the loss of a complementary (skilled) labor force in the production process. (Docquier and Rapoport, 2005)

The competition for human capital across borders is also likely to increase wage differentials in countries of net emigration – if it wishes to retain its talent, a poor country will have to pay it a premium that makes for a considerably higher multiple of its average national wages than a wealthier country would. (Wickramasekara, 2003) Yet another possible undesirable effect of skilled emigration is a “technological externality” through which a country that loses a share of its intellectual capital lowers its chances of attracting foreign direct investment and of fostering investment into research and development. (Docquier and Rapoport, 2005).

Finally, the most tangible potential benefit of skilled migration – remittances sent back to the host country – is not such a clear gain either. For one thing, it is not entirely sure that they can ever compensate for the losses incurred by losing the most capable fraction of the population, which is also the highest net-contributor in taxes. One of the few studies dealing with the question in fact concluded that they could not – not only do remittances tend to decline over time, they also generally stem more from unskilled migrants, who less frequently take their families along and who find integration into the host country more difficult and longer. Another study even found certain negative effects

of remittances to Turkey, most conspicuously the resulting overvalued currency and the inflation of the prices of land. (The Economist, 2002a).

The presented arguments are merely the most common ones, but they are sufficient to show that genuine concern over the effects of brain drain on sending economies in the developing world is not entirely unfounded. Let us now look at some of the cases in which the emigration of intellectual capital leads to beneficial results.

#### Arguments for skilled migration

Most broadly speaking, it makes sense to think that the freedom to move to where employment opportunities and rewards for talent are more stimulating should not have negative effects. That the limitation of freedoms, especially ones that in a perfect world with perfectly efficient markets would be pareto-improving of welfare, is simply counter-intuitive to most mainstream economists today. Under this scenario, persons would emigrate from countries that have a large over-educated and under-employed labor force, and the move would be efficiency-improving. Yet, having enumerated so many negative externalities to brain drain above, more specific arguments in favor of skilled emigration are needed.

A commonly cited one is that the promise of better employment opportunities through emigration may increase individual educational investment in potential sending countries. Then, as not all of the people who gain this additional education end up emigrating, the stock of human capital after emigration might actually be higher than if there is no such promise at all. The reasons why people who invest in education may not emigrate are many and varied, ranging from restrictive immigration policies of receiving countries to changes in individual motives, but some empirical evidence of higher education levels resulting from investments being made under emigration uncertainty does exist. (Baine et al, 2002)

Another possibility is for skilled emigration to actually increase, rather than decrease, the wage level in the sending country. With the top part of the skilled human capital gone, the remaining skilled labor will find its talent in high demand, and according to the logic of scarcity, this shortage should be accompanied by higher pay for the demanded skills.

An argument already partly discussed above concerns the benefits of remittances sent home by emigres. Indeed, the IMF has estimated that developing countries get a total of about \$100 billion in remittances per year, which is considerably above any other form of

assistance they get. (IMF, 2005). The use that this money is put to is not always clear, but there are direct gains for the source countries if the recipients of remittances buy locally-produced goods with it. In addition, it is not uncommon for remittances to specifically be designated for development projects, such as improvements in the infrastructure of a local community being funded by groups of its members living abroad. (The Economist, 2002b).

There is also a fairly clear benefit if former expatriates return to their home countries, bringing with them new technology, skills gained through additional education, training, or experience abroad, as well as new ideas and business opportunities. While they might still prefer to keep their savings abroad, being highly sensitive to local economic and political developments, there should be a sufficient technology spillover to make return migration attractive to sending countries.

However, even if a country's human capital does not return permanently, there are more ways in which these skilled persons can, and often do, contribute to the economic development of their home countries. For one thing, they may constitute a trans-national community with considerable economic power that can be used to the betterment of conditions in their state of origin. (The Economist, 2002a). They may travel home frequently and keep strong ties, contributing to a brain "circulation" rather than "drain" – investing directly, acting to promote trade between their source country and their host nations, indirectly transferring skills home through keeping in touch, or creating networks of expatriate professionals. All of these do occur in practice quite often, and this is perhaps the strongest argument that skilled emigration does not necessarily mean a brain drain – such claims essentially rest on the assumption that migrants sever nearly all ties to their home country once they decide to leave, and this is certainly not the case in the age of easy and cheap communication.

The technology boost in India and China has been strongly supported, perhaps even initiated by these countries' expatriates living and working in the United States. In addition, professional emigrants from many parts of the world network among each other and so participate in the scientific and economic life of their home country – examples include the South African Network of Skills Abroad (SANSA), the Thai Reverse Brain Drain project, the Global Korean Network, and many others made easier by the widespread availability of the Internet. These kinds of "scientific diasporas" can play a very important role in the development of source countries. (Wickramasekara, 2003).

Therefore, while it is far from clear-cut that the emigration of skilled individuals has positive effects that outweigh the losses, there are certainly ways in which sending countries can attempt to reap the maximum benefit of their position, sometimes in cooperation with major host countries. The next sub-section presents some policies available to both.

### Viable policy options

Retention has for long been the sole focus and only pillar of attempts to combat brain drain from developing countries. Logical as it may seem, ultimately the only possibly effective way to do this (short of placing direct restrictions on the fundamental right to free movement, through, for instance, exit visas or special permits) is to eliminate the cause of skilled emigration and make the country an attractive place for employment. However, the inadequate reward for talent in developing countries is precisely what is driving its highly skilled people out, and it is quite unlikely that countries can deliberately change this over a reasonable period of time. There are other possible policy responses, and the ILO has identified six of them, grouped into "the 6 R's": *return* of migrants to their source country; *restriction* of international mobility to own nationals and foreign workers; *recruitment* of international migrants; *reparation* for loss of human capital; *resourcing* expatriates; *retention* through education sector policies and through economic development. (Lowell and Findlay, 2002; quoted in Wickramasekara, 2003). As stated before, retention is usually not the most feasible policy, and the same is probably true for return – several studies show that it "appears relatively limited" and "is often more a consequence than a trigger of growth". (Docquier and Rapoport, 2005)

In addition, the benefits to a source country from return migration depend on several factors, and are not always equally desirable. Depending on the motives of returnees (according to Cerase, these can be failure, conservatism, retirement, or innovation)<sup>13</sup>, the time pattern of the returns (whether they are permanent or not, and if not, how often and under what conditions they occur), the timing of returns (how much time returnees spend abroad before the return, which influences the extent of the potential human capital contribution to the source country), and their nature (whether returnees come back of their own free will or not). (Wickramasekara, 2003). There are also two direct negative consequences of return migration. First, it reduces the flow of remittances, and

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<sup>13</sup> Cerase, 1974. Quoted in Wickramasekara, 2003



it would then be necessary to calculate the trade-offs in order to determine the relative benefits of return more precisely. Second, it "closes the migration cycle" (Wickramasekara, 2003) – when persons return to their country of origin, they no longer act as beacons for new emigrants, and thereby shut off the potential benefits of skilled emigration.

The most common overall conclusion of recent literature on skilled migration, therefore, is that it is probably best to forge policies that target circular migration, or "brain circulation", as the solution that could utilize its benefits while minimizing its costs. Through brain circulation, entrepreneurs, scientists, and other highly skilled persons use their knowledge for their countries' economic betterment and as such are not a complete loss to them (indeed, in cases of highly innovative and effective diasporas or other forms of international communities, they could be a very valuable asset) and yet are able to exercise their choice and enjoy the best return on their talent. Policies such as dual citizenship or direct programs like the United Nations development program's TOKTEN (Transfer Of Knowledge Through Expatriate Nationals) help foster this goal; other suggested routes for action both by sending and receiving states are listed in the table reprinted below.

Do's	
Sending countries	Receiving countries
<ul style="list-style-type: none"> <li>• Incentives to remain and return</li> <li>• Promote linkages with nationals abroad: promote diaspora networks</li> <li>• Promote short term movements of professionals using GATS Mode 4 and other means<sup>14</sup></li> <li>• Attain fast growth and diversified economy</li> <li>• Targeted investments in human capital to compensate for losses experienced</li> <li>• Dual citizenship and diaspora recognition arrangements</li> <li>• Greater emphasis on R&amp;D and creation of centers of excellence with support from receiving countries</li> </ul>	<ul style="list-style-type: none"> <li>• A brain-circulation friendly visa regime</li> <li>• Promote networking with home countries and support diaspora for source country development</li> <li>• Reduce student fees especially from major source countries</li> <li>• Follow ethical recruitment practices and regulate recruitment companies</li> <li>• Honor and promote GATS commitments</li> <li>• Encourage temporary movements of qualified staff</li> <li>• Divert technical assistance to education and training fields</li> <li>• Support diaspora arrangements</li> </ul>

<sup>14</sup> "Mode 4" refers to the part of the General Agreement on Trade and Services (GATS) regulating the movement of workers abroad in order to provide services.

<ul style="list-style-type: none"> <li>• Incentives to attract expatriate investments</li> <li>• Information about opportunities at home</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness-raising of nationals on the contribution of skilled migrants to the host country</li> </ul>
<b>Don'ts</b>	
<ul style="list-style-type: none"> <li>• Excessive reliance on administrative controls</li> <li>• Suppress democratic and human rights</li> <li>• High taxation of returnees</li> </ul>	<ul style="list-style-type: none"> <li>• Restrictive visa practices which discourage temporary departures or brain circulation</li> <li>• Brain waste through monopolistic practices of professional associations</li> <li>• Mass recruitment campaigns in at-risk countries</li> </ul>

Reprinted from: Wickramasekara, 2003

## The Brain Drain from Serbia

Following the above outline of major arguments and policies for handling skilled emigration, let us take a look at the situation in Serbia and gauge it from the perspective of the recommended options.

### The Background: Historical Emigration Waves

Former Yugoslavia has a long history of migration, both external and internal. Its roots and causes are manifold, but as a rule economic reasons prevailed as both push and pull factors – on several occasions in the past century, an economic boom in the west actually coincided with a slump (or worse) in Yugoslavia. Over much of this period, however, Yugoslav emigration mainly followed the main European migration trends. An overview of the general “waves” of emigration in this context follows, based on the work of Vladimir Grečić.

1. The stage of emigration culminating in the 19<sup>th</sup> century and ending after World War I was directed mainly at overseas destinations (the Americas and Australia).
2. This trend continues after World War II and into the 1950's – most of the roughly 200,000 post-war Yugoslav emigrants had not left their country in an organized fashion and, finding themselves refugees in a devastated Europe, the majority moved elsewhere by the end of the decade. Major destinations included the United States, Canada, Argentina, Brazil, Australia, and New Zealand.
3. The flow of Yugoslav migrants into Western Europe begins in the mid-60's and lasts until the economic crisis triggered by the 1973 Oil Shock. In this period, the number of emigrants from former Yugoslavia in Europe rises from about 40,000 to 1,150,000.
4. With the onset of economic difficulties, European countries introduce a set of restrictive migratory policies and the number of migrant workers from Yugoslavia decreases somewhat. At the same time, a repatriation effort takes place and about 30,000 Yugoslavs are returned to their country of origin per year between 1973 and 1979.
5. In the mid-80's, however, European countries are experiencing a technological and economic boom, while the conditions in Yugoslavia begin to worsen. Despite restrictive policies for immigrant workers, about 30,000 Yugoslavs, this

time mainly skilled workers, are employed in Western Europe per year during the 1980's.

6. Finally, the 1990's bring about the collapse of Yugoslavia and the emigration wave from the 'rump' Federal Republic of Yugoslavia (today Serbia and Montenegro) reaches its peak. Highly skilled persons dominate the overwhelming tide of emigrants, culminating in 12,500 people leaving in 1993 only to overseas countries. It is estimated that in this decade alone, around 17,000 university-educated people left the country to the Americas, Australia, and New Zealand. The number climbs to about 30,000 if Europe and other destinations are included. (Grecic, 2002).

After this overview of the key emigration patterns, let us take a look at some of the main factors that contributed to the exodus of the 1990's.

1. The war in neighboring Bosnia and Croatia

While there has been no direct armed conflict on the territory of Serbia proper, the war that took place in the neighboring republics and with the direct (albeit unofficial) participation of Serbia in it was a strong impetus for leaving the country. First, the obvious threat of mobilization was a trigger to numerous young men to leave, made worse by the practice of compulsory military service.<sup>15</sup> This practice did not only drive men out of the country – it prevented them from coming back once they had been officially recorded as draft dodgers. Many of these men have graduated from universities at home or abroad, and have sought to emigrate in order to avoid the costs of losing a year of their career to providing military service to a country whose government they did not consider legitimate.

The conflict also acted as a powerful "push factor" for emigration through flaming up destructive nationalism and creating seemingly unbridgeable cleavages between ethnic groups. This meant the flight of families that included an ethnic mix from among the warring parties (intermarriage across religious and ethnic lines was not uncommon in former Yugoslavia), as well as of whole families of minority nationals (Hungarians, Slovaks, Romanians, etc.) who, although not directly involved in the outburst of ethnic

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<sup>15</sup> Although the twelve-month compulsory military service did not immediately mean one would be sent to fight in the war, it was a threat present throughout the 1990's, even in the peaceful period of 1995-1998 (in that case, it referred to the possibility of being sent to serve in the Kosovo province, where conflict had been looming since the 1980's).

rage, found themselves in a seriously disadvantaged position, while they also had a mother land in which they could integrate fairly easily.

## 2. Lack of democracy

While Serbia also has a large 'traditional' emigration from the period immediately following World War II (comprising chiefly the descendants of persons who fought with the *chetniks*, on the opposite side of Marshal Tito in Yugoslavia's internal conflict during World War II), the continued authoritarian rule of Slobodan Milosevic sent many former dissidents abroad. They had been hoping and planning for an end to their struggle, and were disappointed when the post-1989 society in Serbia had no role for them to play, and indeed did not differ much in its intolerance of opposition than the regime preceding it. With each year that Milosević stayed in power in Serbia, increasing numbers of artists, writers, journalists, lawyers, and academics fled the country with resignation. The period of his rule having been politically much more turbulent than the communist era, rays of hope occasionally illuminated the otherwise generally silent intelligentsia, and each time they failed, a new wave left the country – many never to return.<sup>16</sup> In addition, Milošević's grasp on the free media and political opponents gradually tightened in time, and by the end of his rule he already verged on truly totalitarian rule. Each new drop of repression added a new reason for his political opponents to give up the struggle and look for better careers abroad.

## 3. Economic collapse

By far the most significant driving force of emigration in general, and skilled migration in particular, is the condition of the economy and the opportunities available for rewarding talent. With the increase in inflation and the beginning of economic decline already in the 1980's, many who had the skills that were in demand elsewhere left Yugoslavia.

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<sup>16</sup> Several such points of rising expectations followed by massive disappointment can be identified in this period. The first and probably least relevant were the first 'free' elections won by Milosevic in 1990. This was followed by large-scale anti-war demonstrations on March 9<sup>th</sup>, 1991, which ended with the jailing of the then main opposition leader Vuk Drasković. Hopes flew high again when the Dayton agreement ended the war in Bosnia and settled the borders of Yugoslav successor states in 1995, which was accompanied by the lifting of sanctions and a rise in the living standard. The first ensuing chance for political change came in the winter of 1996-7, when hundreds of thousands of protesters stormed the streets of all major cities for three months, defending opposition victories on municipal elections – although these victories were ultimately ceded by Milošević, the opposition coalition that had won them disintegrated within months. This period was followed by the war in Kosovo and the NATO air strikes, which in the end left Milosevic at a point of no return and resulting in his ultimate ousting in October 2000.

These included doctors, engineers, and other highly trained professionals. With the onset of economic sanctions, hyperinflation, and overall economic collapse, a fundamental uncertainty regarding the future state of the country's development and an individual's employment prospects in it set in. This was the period of the height of emigration, as virtually anyone with the means to leave did so, either temporarily or permanently. Of those who stayed, almost all of the highly skilled and talented expressed a desire or explicit plan to leave as soon as circumstances allowed them.

#### 4. International isolation

A very important factor that should not be neglected here is in part related to all of the factors mentioned above, yet it offered an additional element and impetus to emigrate. The FRY was under various forms of UN, EU, and American-imposed sanctions between 1991 and 2001, which have done more than express political disassociation from the Milošević regime and harm the economy.

The most direct effect of the sanctions was indeed economic – the financial isolation ended all official trade, and a fraction of the economic decline can be attributed to this (although it is immensely difficult to measure this fraction, given all other detrimental developments<sup>17</sup>). The harmful effects that a trade embargo can have on the effects of human capital on growth have been addressed in the first chapter. The sanctions also meant that remittances, estimated at some \$100 million per month (Garfield, 2001), were either stopped or sent through less formal and unsafe channels. The financial isolation had the added effect of signaling an insecure investment environment, and, just as significantly, boosting the gray economy. Sanctions left loopholes that allowed the skilled to manipulate them and smuggle foreign goods into the country. As the sanctions lasted longer, the number of firms allowed to trade was shrinking and they were increasingly linked to the Milosevic government. Thus while virtually everyone engaged in some form of illegal activity during this period, the benefits thereof were severely unequal and certain groups close to Milosevic made their fortunes this way. (Garfield,

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<sup>17</sup> Garfield (2001) mentions two surveys that attributed the economic decline to the following factors and in the following proportions: the study conducted by the G17 institute estimated that 4% of it was attributable to the state break-up, 15% to UN sanctions, 4% to EU sanctions, 10% to hyperinflation, and 6% to the 1999 NATO bombing; the study conducted by the Center for Policy Studies assigned the contributions as 9% due to sanctions (UN, EU, and US), 12% due to hyperinflation, and 2% due to the bombing. (p. 28).

2001). This was also the birth of the so-called "import mafia", remnants of which are still present among lobby groups today.

In terms of human capital, and quite irrespective of the question of the effectiveness of the sanctions, one key impact occurred in an area in which it was surely not intended. The cultural and intellectual isolation of the country during the sanctions was perhaps their most important long-term result. UN sanction between 1992 and 1994 included a suspension of scientific and cultural exchanges, a strict visa regime had been in place since 1992, and the rules for academic and intellectual isolation were ambiguous, leading to some institutions and organizations completely cutting off ties, while others (a stark minority) attempted to support opposition-minded intellectual development. However, the net result was that "professionals were barred from international travel, denied scientific information, cut off from international research funding, shunned by professional organizations and excluded from the international mail system. Many of the people most capable of responding to the country's humanitarian needs were thus limited and discouraged from acting" (Garfield, 2001, p. 12). Obviously, this provided a very direct impetus to leave – at least for those able to do so.

#### Dealing with Emigration in Serbia

From the outline above, it should immediately be clear that the one thing Serbia does have is a large diaspora – some even estimate that of all ethnic Serbs, about one-third live abroad as *émigrés* (Grečić, 2002). Even if the actual numbers are probably lower, this is still a large body that could potentially play an important role in the country's development. This is not new information to policy-makers – in fact, one of the key obstacles to a constructive development in relations with the diaspora is that it has already been used and abused numerous times in the past. Throughout the 1990's wars, far away from their home country and usually exposed to interpretations of the conflict through western media, some *émigrés* turned to Milošević and sent considerable amounts to 'assist the country's defense'. Needless to say, the government was quick to betray their trust and any funds sent as 'loans' were never to be seen again.

With the beginning of the transition to democracy, the new government attempted to gain the support of the emigration and invited many to return. While there has been no serious study conducted on the response, some famous returnees may have served as inspiration to others – in Đinđić's government, several key ministries were headed by

professionals who returned from emigration (Božidar Đelic was finance minister, Kori Udovicki was energy minister and later also briefly governor of the National Bank, and Dragan Domazet was minister of science and technology). The government formed in 2004 established a new ministry to deal with the question – the Ministry for Diaspora – but their accomplishments remain unclear so far.

Some brain circulation efforts have also been initiated recently, such as the Brain Gain Program organized by Austria's World University Service (WUS) and aiming to attract emigre guest lecturers to teach courses in Serbia, Montenegro, Kosovo, and Bosnia-Herzegovina. As they are very recent developments, we have yet to see the results of such initiatives, but they do indicate a desire to move in the right direction.

Some steps have been taken by the Serbian government as well. Dual citizenship was introduced very early in the transition, and in 2005 the government passed a bill granting amnesty to young men who have evaded military service and spent years abroad in fear of being prosecuted if they returned. That such policies are only being enacted now is another indication of the extent of the problem – the flight of skilled persons was not only triggered by the severe crisis in the country but also tacitly supported by the Milošević regime<sup>18</sup>, whose electoral base lay among the less educated segments of society.

Although ultimately the only solid way to attract people back is through rapid economic growth and political stabilization, there is plenty of room for policies that reduce the damaging effects of skilled emigration and boost some of its benefits. In light of "brain circulation", one more open question is the still highly restrictive visa regime on the part primarily of the Schengen states. There has been some talk recently of facilitating the temporary movement of scientists and professionals through relaxing the visa requirements a little, but many of them will remain reluctant to travel for as long as any short-term visit visas are in place, as the frustration related to obtaining them does not stem only from the administrative procedure in place (which may indeed be somewhat loosened), but also from the long waits and other related processes that many find degrading.

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<sup>18</sup> Through, for instance, severely prosecuting those who fled to evade military service and simultaneously disallowing dual citizenship, meaning that many of these men were virtually forced to give up their Yugoslav nationality. In addition, the opinion of the regime of "brain exchange" or any similar effort was quite clear in the branding of anyone with ties abroad as "the fifth column" and such policies as, for example, a fee for exiting the country (a fairly small amount but payable every time one crossed the border; abolished immediately after the coming to power of democratic forces).



In conclusion, while the emigration of skilled persons is not an adverse development *per se*, the circumstances surrounding the phenomenon in Serbia were such that they typically accentuated its negative impacts and precluded many related benefits. The last decade of the 20<sup>th</sup> century created the economic, social, and political conditions for a long-term exodus of many, including whole families of minority groups, academic researchers, scientists, and politically democratic-minded persons. Since the main push/pull factors are economic, there are no clear signs yet that the outflow has stopped, but it should be expected to slow down as the pace of economic recovery improves. In addition, initiatives are now taking place to utilize the existence of a large diaspora and reap the benefits of brain circulation and exchange. The lifting of visa requirements for short visits to Schengen states would be a helpful step in this direction.

**PART IV. THE ALLOCATION OF HUMAN CAPITAL**

## Approaches to Human Capital Allocation

The previous two chapters dealt with the challenges posed by the insufficient or inadequate accumulation of human capital – insufficient in cases of severe brain drain, and inadequate in situations when the education system is not structured to be responsive to challenges of the post-modern era. We now adopt another, somewhat different take on the complex issue of human capital as a source of economic growth in a developing economy.

The main question in this chapter will not be how to build policies that will shape the mass of talent available in a country into the most socially productive form, but rather on what this talent chooses to apply itself to, and under which conditions. It looks at the impact that a certain allocation of human capital can have on a country's development – in other words, how the different occupational choices of talented and educated persons can affect its prospects. It is a difficult question to address since in practice countries usually face the problems of mis-accumulation (in the form of poor educational traditions and practices) and mis-allocation (in the form of talent being applied to adverse uses) at the same time, and the effects of these forces cannot be separated. It is presented here as an interesting and useful addition to the already described challenges of human capital, and as an aspect of it that adds an extra element of complexity. Namely, the majority of issues dealt with under this heading are not resolvable through well-targeted policies; rather, they largely depend on the cultural patterns and social relations of the population. In this framework, we will first look at the approaches taken to the problem of allocation in a more general context, and then return to Serbia and present data relevant to determining the factors behind the allocation of human capital in this country.

### Allocation of Human Capital in a General Context

In his 2004 essay, Braguinsky cites the examples of post-war Japan and post-communist Russia as two countries embarking on the transition to capitalism without any 'institutional infrastructure' needed for the endeavor – neither country had a stable mechanism for protecting property rights, and neither had even nascent financial markets. Notwithstanding the length of time that has passed since the commencement of these two endeavors, one has clearly been far more successful than the other has, and Braguinsky makes a case for attributing this differential to human capital – not its accumulation, but its *allocation*. To do this, he begins by accepting a rather loose

definition of human capital, which includes what he terms "relational capital", often also referred to as *social* as opposed to *human* capital. In other words, he adds the component of relations and ties between people as something that can add to the productive capacity of individuals.<sup>19</sup> In essence, he shows that the form that this relational capital component takes in a given society determines whether that society will be able to use its human capital productively or not. He goes further to say that, if this is not the case, human capital may take a form that would be *destructive* to a country's development. This is a highly interesting proposition which, if true, may help explain the differences in the pace of development between transition economies.

In the case of Japan, capitalism was built entirely by private entrepreneurial initiative in the face of bureaucratic inefficiency. Braguinsky (2005) uses the example of SONY, where the founder's relationship with his father-in-law and the latter's reputation in Japanese society proved to be the critical factors for the success of the young company, to demonstrate how "relationship banking" successfully circumvented the obstacles posed by the lack of a stable institutional system. Personal relations and connections here worked to channel investment into a productive entrepreneurial venture that otherwise might have failed due to the absence of a formal institutional support mechanism. In other words, human capital was effectively used as collateral and was thus able to fuel growth on its own, and even contribute to the creation of a capital market and kick-start the development process. (Braguinsky, 2005). Hence, it would be possible for human and social capital to form the spark for growth.

However, as the example of Russia shows, this cannot always be achieved. The country emerged from seventy years of socialism as an example *par excellence* of successful mass public education. The number of university graduates and the overall stock of human capital in 1989 were extremely high. (Braguinsky, 2005). Yet, fifteen years into the transition, the country is still not considered a competitive capitalist market economy – clearly, there were factors present that prevented a Japan-style scenario from occurring. The discussion of post-communist education systems earlier in this paper offers an explanation based on the extent to which the acquired human capital was adjusted to the needs of the modern economy. This is not the only possible interpretation, however – one of the contributing forces mentioned by Braguinsky is the

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<sup>19</sup> Gary Becker, the founding father of Human Capital Theory, accepted this extension of the term as well – in an interview to Line Zine, he agreed that, in his opinion, social capital was a form of human capital.

massive brain-drain that occurred as the Iron Curtain fell; another is that the abundance of natural resources in Russia encouraged competition to be based upon rent-seeking and influence, rather than innovation. Most importantly, however, the socio-economic system of the Soviet Union was structured in such a way that it eventually shut off all access to property rights and legal protection to innovating entrepreneurs and created a closed oligarchic system.

Unlike in Japan, where "reputational" capital played a key role, in post-Soviet Russia everything depended on one's political capital and connections. This was a clear legacy of the communist system, where an insider position in the political hierarchy was necessary to implement one's economic capital – in other words, bare financial wealth meant nothing (and was indeed quite unlikely) without a hold on some, at least low-ranking political title. This peculiar kind of symbiosis between two normally separate sets of actors represented the most important asset for getting on in life, and ended up becoming the essential obstacle to an early development of capitalism. Under such conditions, privatization created what Braguisky calls "windfall wealth", essentially sealing off control over financial resources and fully establishing a system where "insider trust" is the single most valuable asset, which then clearly cannot be extended beyond the limits of the closed circle or used as collateral for entrepreneurial development as in Japan. Finally, this kind of system is politically in equilibrium, resulting in a situation where relational capital has effectively hindered, rather than encouraged, the establishment of the conditions for capitalist development.

Braguisky's paper illustrates that, given a certain socio-economic legacy, a country can bring itself into the position that its economic elite, ostensibly the most productive segment of society, becomes a closed circle and discourages further entrepreneurial initiative. Murphy, Vishny, & Shleifer (1990) discuss the allocation of human capital on a more general level, also arguing that it has significant effects on the growth of an economy, more specifically claiming that it is the allocation of talented individuals between the (productive) entrepreneurial sector and the (non-productive and sometimes even counter-productive) rent-seeking sector that matters most, and looking at some specific factors behind their occupational choice.

In their paper, they develop a model in which the growth of an economy is determined by the ability of its most able entrepreneur. The model rests on the assumptions that most talented people have general, rather than specific talents that can be applied in any area

or sector they choose. In a one-sector model, it is most lucrative for them to become entrepreneurs, and they are awarded by increasing returns to ability (i.e. they can earn profits that are higher by more than proportionate to their ability), and because they can spread this advantage by expanding. The latter is limited by diminishing returns to scale. There is a threshold level of ability above which people become entrepreneurs, which is constant in equilibrium, resulting in a constant rate of technology improvement and permanent growth (technology at each period is that of the past period improved by the ability of the most able entrepreneur), assuming that innovators do not capture future returns on their innovation. According to these key assumptions, the allocation of human capital will be "first-best" efficient in a one-sector model. (Murphy et al, 1990).

Introducing a second sector (say, sector B) also introduces a very clear inefficiency – the socially most efficient solution would be for the most able individual to enter one sector, and the second most able to enter the other. However, due to diminishing returns to scale, all of society's most able individuals will enter the sector where diminishing returns set in less rapidly (sector A), and as a result sector B will grow at a much lower rate (since the most able person in it will be significantly less able than the most able person in sector A). The inefficiency will be somewhat lower in case there are increasing returns to agglomeration of talent or if there is some comparative advantage to be gained from working in a particular sector. The two-sector model, however, still ignores the effect that compensation contracts have on human capital allocation (and this effect is indeed significant, especially with respect to the extent of the returns that are retained by talented individuals in each sector), as well as any distinction between entrepreneurs and management and the division of returns between them. In addition, any given allocation will change with preferences. The model does, however, stress the importance of alternative opportunities and the relative reward in different sectors.

Finally, introducing a rent-seeking sector into the model yields the key conclusions of the paper. Defining "rents" as effective taxes on the profits of the productive sector and under the simplifying assumptions of an exogenous tax rate, of rent-seeking being fully non-productive, of rents extorting a fraction of profits and no other income, and of rent-seeking technology having increasing returns to ability and decreasing returns to scale, they now construct a three-sector model, in which individuals choose between entrepreneurship, employment, or engaging in rent seeking. In this case, since the most

talented will tend to have larger firms, the outcome will depend on the elasticity of the production function with respect to the total ability of all workers.

If the production function for output is more elastic than for rent seeking, the most able individuals will join the productive sector and become entrepreneurs, those less able will become rent-seekers, and the least able will become workers. Here the growth rate remains constant and determined by the most able entrepreneur, but that rate is also the optimal one – since that entrepreneur is also the most able individual in the economy. However, the rent-seeking sector reduces the income level by attracting talent and reducing employment in the productive sector, as well as by engaging the less able in non-productive activities.

In the case that the production function for rent seeking is more elastic with respect to human capital than that for output, the larger “firms” in the rent-seeking sector attract the most talented persons into it. In this case, since the ability of the most able entrepreneur is poorer and growth will be slower, since the added distortion of rent seeking is that that it drives the most talented out of the productive sector and into non-productive rent seeking.

In terms of the reasons why so many talented people choose rent seeking versus entrepreneurship activities, Murphy et al cite three key factors: market size, firm size, and compensation contracts. The most able enter the sector where the “market” is larger (in the case of rent seeking, this refers either to a large official sector, such as the government or the army, or to substantial unofficial gains resulting from ill-defined property rights) and where “firms” are bigger (in entrepreneurship, this primarily means expansion opportunities due to few diminishing returns and accessible capital markets; in rent seeking, “large firms” refers to the discretionary powers given to rent seekers in gaining wealth). The term “compensation contracts” is used widely to describe the deal that talented individuals get as a return for their ability, and it is a vitally important determinant of the allocation of human capital in an economy. (Murphy et al, 1990).

Firstly, the question is how much of their income able people get to retain – in case of entrepreneurs, this share will be greater if taxes are lower, but also if all other forms of expropriation on the part of various official or unofficial rent-seekers are non-existent or very low – various fees, licenses, or bribes. In addition, well-defined property rights, especially with respect to patent protection, will draw more talent into entrepreneurship.

Facilitating the process of opening firms will have the same effect. On the other hand, an important determinant of the returns to ability promised by a sector is the ease with which talent is recognized and rewarded – occupations in which individual performance is clearly observable and where it can be compensated separately will naturally lure more talent, since the most able will find it easier to cash in their ability. However, individual output is frequently not the most observable in entrepreneurship and innovation, especially where teams of innovators are involved and even more so in economies where starting up own firms is a difficult and expensive project (resulting in innovators being employed by larger firms, where their individual output can be difficult to reward appropriately). On the other hand, if rent seeking is expanded to include some less productive market activities (Murphy at al take the examples of law and financial speculation), very often individual achievement will be most clearly observable in that sector – indeed, one of the conclusions of the paper is that this is the most likely cause why these essentially rent-seeking professions attract so much talent in countries like the United States. (Murphy et al, 1990).

Interesting as their hypotheses are, however, the empirical findings are such that a conclusive and definite argument about the impact of the allocation of human capital on economic growth cannot be made. Using college enrollment into engineering and law majors as a proxy for the allocation of talent to innovation or rent seeking, respectively, as hypothesized, they find that the former has a strong positive effect on growth (both directly and indirectly), and that the latter has a direct negative effect on growth, but a negligible indirect effect (i.e., there is no negative effect of lawyers on investment), signaling that its main distortion may be drawing talent away from engineering. However, their sample also showed that countries with a large number of engineering enrollments had high investments in human and physical capital as well, indicating that the allocation of talent is not the only conceivable interpretation of the higher growth rates found for these countries. Rather, we would expect that these were also the countries that performed better in other areas as well, such as progressive education policies.

This section of the paper drew attention to the possibility that human capital can affect growth not only through its accumulation but also through the way it is distributed across sectors, and outlined some possible reasons for a given allocation to take place – from culture and social capital that may encourage or preclude an efficient allocation, to



market and firm size, diminishing returns, and compensation contracts. The next section applies this approach to Serbia.

## The Allocation of Human Capital in Serbia

If the authors above faced difficulties in coming to a measure of the allocation of human capital that could be considered, if not precise, at least a fairly solid proxy, such an endeavor would be near-impossible in Serbia. As the previous chapters explained, there is a serious dearth of data regarding many vital indicators in the field of human capital. Our best attempt, then, is to resort to crude measures such as university enrollments. An alternative possibility is to examine the circumstances that may lead to a likely allocation of human capital, and to leave out the estimation of the actual allocation, at least until the data available can be collected in a way that makes it slightly more reliable.

This section will utilize both of these approaches. First, we shall look at the social and cultural capital in Serbia and analyze its likely impact on the distribution of talent. Then, we examine recent enrollment data for the various faculties at Belgrade University and attempt to draw a rough picture of the preferences they may indicate among the young and talented.

Of the two extreme examples in Braguinsky's case study, one would reasonably expect Serbia to fall much closer to the Russian than the Japanese case. While this is probably true, and we are witnessing more and more evidence of a 'tycoonization' of the Serbian economy, here we will treat it as an open question, an unfinished development, since Serbia is still in a fairly early stage of the transition process. Suffice it to say that the majority of those who gained immense wealth during the Milošević regime are still left fairly intact, with the possible exception of those who were subject to the "extra-profit tax"<sup>20</sup> levied in the initial period of the transition. Our task here will be to look at the consequences to the "social capital" and further development in Serbia of the past period, and the influence of present-day social and cultural values on the allocation of human capital and thus indirectly also economic development.

This paper already touched upon the criminalization of Serbian society that took place in the 1990's due to the promotion of politically suitable "businessmen" and the deep social

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<sup>20</sup> To the first democratic government formed in 2001, the extra-profit tax served as the only possible legal resort for taxing those who gained wealth through illegitimate but technically legal means during Milošević's rule. For instance, it included those who were able to manipulate the black currency market with the protection of the ruling elite (buying currency at official rates and selling it at the black market rate), various forms of abuse of official positions, etc. The post-2000 government dealt with these and similar gains by estimating them and treating them as "extra-profit", retroactively subject to tax rates ranging from 30 to 90 per cent.

crisis related to the armed conflict and international isolation. It is worth reiterating the impact that the systemic collapse has had on the social fabric – the rules of social support broke down, the lines between legal and illegal became unclear, the value of education depreciated, and young people were faced with criminals as models of success. This absolute muddling of values led to the country becoming a “community of individual survivors” (Garfield, 2001). We now look at the impact this has had on today's preferences and value positions.

The Aspiration Survey conducted by the United Nations Development Program (UNDP) in July 2003 offers some valuable insight into the value orientations of the population. A significant drawback for the purposes of this paper is that the Survey does not distinguish between “talent” and the rest of the population, except in cases when there are striking differences in answers attributable to educational attainment – thus it does not present a completely accurate picture of the preferences of the highly skilled.

The most relevant question for us is entrepreneurial capacity, or the willingness of talented individuals to invest their skill in innovation. The results are not promising. The share of the people potentially intending to start a private business is quite low, while by far the most preferred occupational choice is a “safe job in a state company”. Only 14% of the respondents chose starting their own business as their first choice, and three-quarters were completely disinterested. Of these, however, a certain number might be willing to engage in entrepreneurship, but do not consider it feasible – a total of one-fifth of the respondents stated that they “think about business” but do not think there is a chance for them to succeed in it. (UNDP, 2004).

The most commonly cited reason why a private business was not considered a preferred occupational choice is the lack of financial means for start-up (26%). While this is probably the most common reason why people anywhere decide not to go into business, the problem may be quite far-reaching in Serbia. There is much talk of supporting small business and self-employment in the media, but in reality, the market for venture capital is non-existent, and there are virtually no funds available for start-up companies from any sources. The only options were several contests organized by the state Fund for Development and the Employment Office for loans of €5,000-€20,000 for start-up businesses under favorable conditions. However, the contests were only open to those officially registered as unemployed and the primary criterion for obtaining the funds was not the long-term sustainability of the business but the number of workers that the new

firm would employ. In addition, applicants needed to supply the same level of security (guarantors, mortgage, etc.) that would be required for bank loans (although the latter are not offered to start-ups). Consumer loans from banks, as an alternative source of financing for small business, are still offered under quite unfavorable conditions and the interest rates are considerably higher than in neighboring countries.

Now that we addressed the main concern that people mention as an obstacle to entrepreneurship, we should also take a look at the overall openness of the country's economic system to innovation and some less apparent costs of doing business.

The World Bank's "Doing Business" report for 2005 states that, of the 155 countries studied each year, Serbia has achieved the greatest improvements in the investment climate in 2005. There is no reason to be overly optimistic, however – it is still ranked as number 92 of the 155 according to the overall ease of doing business. While in many areas the country ranks similar to or even better than the regional average, in those areas in which it does lag behind it is severely backward. These include dealing with licenses (rank 130), trading across borders (rank 123), enforcing contracts (rank 110), registering property (rank 103), and the already mentioned – getting credit (rank 99). (World Bank, 2005). A table summarizing the main findings is included in Annex 5.

An additional hurdle in starting a business is the lack of transparency regarding procedures, often stemming from the poor training of the bureaucrats in charge of handling business affairs. While this problem was greatly eased with the centralization of registry procedures into one unified Business Registry Agency (previously split by municipality and handled by the already under-educated, over-burdened, and under-paid municipal officials), many bodies in charge of handling licenses or conducting various kinds of inspection remain non-transparent, creating information problems and increasing transaction costs.

Other than lack of capital, respondents to the Aspiration Survey did not cite many reasons for not entering business (although the questionnaire offered explanations such as the lack of security in private business, the extent of corruption). However, answers to other segments of the survey indicate that there may be certain value-related constraints involved as well.

When asked about their desired society, the great majority of respondents opt for a market-based economic system with a strong state presence. Virtually none of them

chose a "socialist economy" as their preference, but the proportion of those claiming to support a "free market economy" or a "mixed economic model" was 42% and 43%, respectively. Even among business owners, "free market economy" was preferred only by 47%. (UNDP, 2004).

The social democratic orientation emerged more clearly in questions concerning the role of the state in economic management (with 65% of the respondents in Serbia stating they would like to see this role strengthened) and the extent of social support (83% said they wanted it increased), as well as free healthcare (86% in favor) and stronger control over monopoly enterprises (94% in favor). Even more clear is the reluctance to an individualistic society, with the majority (69%) considering that the state should bear the primary responsibility for individuals' destinies. (UNDP, 2004).

Asked about the sector that they believe should play the leading role in the desired economic system, respondents showed equal support for the state and the private sectors (38% each), while 21% said that it should be "big international corporations". The proportions for respondents defined as belonging to the elite were 26% state, 47% private sector, and 26% big international corporations. While the relatively high proportion of respondents who would like multinationals to take the leading role in the economy may indicate a higher preference for the private sector, it is probably more likely that these companies are perceived as large employers and that their role as sources of job security was more important. An interesting fact is that only 47% of business owners believe that the private sector should take the "leading role" in the country's development. (UNDP, 2004).

All of these, along with responses in certain other areas which also indicate a strong reliance on the state, point to a cultural pattern favoring security and solidarity over high return and competitiveness. While this can partly be interpreted as a legacy of the socialist period of egalitarian values, it may just as much be a reaction to the long period of chaos and instability in the 1990's, as well as the first two years of the transition, in which many people lost their jobs in the newly privatized companies. In addition, entrepreneurs in Serbia have learned over the past decades that virtually no serious business moves could be made without the blessing of the state, or its indirect consent, and thus continue to expect some kind of top-down substitute for initiative. Be as it may, if such preferences hold for the fraction of the population with the highest human capital

and potential to drive the economic transformation, they will most likely not use this potential in the way that would be most favorable for the country's development.

Returning now to social capital, the Aspiration Survey does not reveal much – it states that "the population of Serbia and Montenegro shows a moderate level of social and interpersonal trust" (p. 28), and presents data on the extent of social solidarity and tolerance. The question important for us here, however, is whether the overall level of trust is low enough to encourage the formation of Russian-style closed groups of oligarchs, or whether the informal links between people are such that they will prevent the spread of corruption and contribute to a positive development with respect to the allocation of human capital.

While citizens of Serbia cite corruption as one of the most important problems in their country (according to some sources, it ranks fourth after poverty, unemployment, and crime (Sukovic, 2005)) and the vast majority state that they would refuse to be involved in it under any conditions, actively (as bribe-givers) or passively (as receivers of bribes)<sup>21</sup>, the attention that anti-corruption measures receive in the public is disappointing. Hitherto measures usually referred to improving the legal and institutional framework, by passing new regulations and establishing bodies for combating corruption. However, while numerous laws have been passed (Law on the Conflict of Interest, Law on the Accessibility of Public Information, Law on the Financing of Political Parties, to name a few), they are not always fully implemented. In addition, the institution established for the purposes of the struggle against the phenomenon, the Council for Fighting Corruption, has come up with numerous reports on possible cases of corruption, but it has largely been ignored both by the prosecution and the general public. (Sukovic, 2005).

Transparency Serbia, the local branch of the international organization monitoring and fighting corruption worldwide, has been measuring the subjective perception of the level of corruption. The index for Serbia and Montenegro in 2004 was 2.7 (on a scale of 0-10, with lower values indicating higher degrees of corruption) and earned it the rank of 97 among 145 places<sup>22</sup> (the same rank is shared by Algeria, Lebanon, Macedonia, and Nicaragua). (Transparency Serbia, 2005). The result represents an improvement from

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<sup>21</sup> 54% and 72%, respectively (UNDP, 2004)

<sup>22</sup> More than 145 countries were surveyed, but many occupy the same rank

2003, when the country occupied position 89 out of 90, with a corruption index of 1.3. (Transparency Serbia, 2004).

Although these are not objective measures of how much corruption actually takes place, and, as perceptions, would probably continue to be high for a while even after certain positive developments, the trend is a troubling one – especially combined with the overall apathy and lack of interest in anti-corruption measures.<sup>23</sup>

The picture obtained by combining the overall data above, as well as the dominant cultural pattern of heavy reliance on the state and insufficient individual initiative, would seem to be one in which we could expect a lot of talent to be misallocated into rent-seeking and socially unproductive activities. Let us now look into the enrollment data for Belgrade University over the past three years.

The three faculties that have produced virtually all of Serbia's politicians and administrators are the Law Faculty, the Faculty of Economics, and the Faculty of Philosophy (with the possible addition of the Faculty of Philology and the considerably smaller Faculty of Political Science). While certainly neither of these can be called a "rent-seekers' school" and something like that is hardly conceivable, persons enrolling in them will be more likely go into a career that will involve the distribution rather than creation of wealth. On the other hand, studies at the Faculty of Electrical Engineering, the Faculty of Mechanical Engineering, the Faculty of Physics, the Faculty of Architecture, or the Faculty of Management and Computer Science, have a reputation associated more with entrepreneurial activities or innovation. The latter group is also popularly perceived as the schools that can 'get one out' – i.e. that graduating from one of them will help a person emigrate.

The table below summarizes enrollment data for these faculties for the past three academic years. Since the number of students who enroll is often constrained by physical capacity of the school rather than the quality of the candidates, we also include the number of applicants who have selected each school as their first choice, as this may be a better indication of the actual preferences of talent. Both pieces of data are not always available.

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<sup>23</sup> The apathy described above should not be taken to mean indifference or lack of interest in instances of corruption. As everywhere else, scandals are widely publicized and cost politicians their reputations. However, an insufficient number of these affairs reach their conclusions in court, and the media typically discard a case once a new eye-catching event takes place.

Faculty	2003/2004		2004/2005		2005/2006	
	<i>Applied</i>	<i>Enrolled</i>	<i>Applied</i>	<i>Enrolled</i>	<i>Applied</i>	<i>Enrolled</i>
Law	1891	1470	1687	1470	1910	1800
Philology	1835	1455	1975	1485	1849	1295
Economics	1800	1200	1740	870	1843	
Philosophy	1296	777		845	1230	
Management and Computer Science	1249	630	1125	630		660
Political science	796	315		315	672	500
Electrical engineering	669	500		600	843	
Architecture	544	260	550	240	552	330
Mechanical engineering	365	355	322	590	328	503
Physics	65	350		200	46	200

Four out of the five faculties that stereotypically represent "rent seeking" are simultaneously the faculties with the largest student bodies on Belgrade University. On the other hand, of those that may more commonly train innovators, only the Faculty of Management and Computer Science falls among the popular ones. However, several qualifications are in order here.

First, the number of students that apply to a given faculty may depend on the general perception of the likelihood of being accepted. Since a place at university is granted to those who attain a certain score based on their secondary school record and on their result on the entrance exam, students who had poorer grades in high school might not bother applying to schools that are known for very limited capacity – instead, a great number of them may choose Law or Economics, where they anticipate a greater passing rate.

Second, several of the mentioned faculties have a very large number of institutes or areas of study, the popularity of which may vary widely and which may distort the choice represented here. Such is the case with the Faculty of Philology, where the Institutes of English, Spanish, Italian, and German Studies, as well as World Literature, enjoy great popularity but have very limited capacities. Students often enroll into an institute only to try to transfer to another one in the course of their studies, and many drop out if they are unsuccessful.

Third, the numbers for the Faculty of Mechanical Engineering and the Faculty of Physics also indicate that they were not the students' first choice – as the number of applicants is considerably lower than the number of those who actually enroll, the difference between



the two numbers most likely reflects those who attempted to enroll elsewhere as their first choice. It is questionable how many of those candidates will eventually graduate.

Finally, it should be clear that this is far from a scientific analysis of the allocation of talent in Serbia – the mere choice of faculties representing the productive sector and rent-seeking was made on the basis of myth and stereotype, and as such cannot be treated as fully accurate. However, since this rough first-order analysis seems to indicate a clear preference for one sector over the other, it appears useful to present it here as a call for further research in this direction.

From this limited information, it seems to be the case that students anticipate careers in rent seeking to be more rewarding than entrepreneurship. This raises questions as to the effects of the interference of corruption and bureaucratic inefficiency on entrepreneurship. It also raises concerns about the factual basis of the fears commonly expressed about job security, and it would be especially important to know whether such fears are a result of the uncertainty in the early transition (and, as such, temporary) or if they stem from some deeper cultural roots.

We have seen that numerous incentives exist for talented citizens of Serbia to opt for occupational choices that do not yield the highest social return (indeed, they often do not yield the highest possible private return either, speaking in strictly pecuniary terms), ranging from deep-rooted cultural patters, to the legacies of decades of state socialism and the more recent period of economic collapse, uncertainty, and chaos, and to the more straightforward complications and costs related to entrepreneurship. We have also taken a very rough look into some of the actual choices made by the young and able in Serbia today, and although there is definite need for more thorough analyses in this respect (once more reliable data is available), the trend seems to follow the predicted course.

The allocation of human capital is an additional concern for a country that is still at an early stage in its transition to market economy, reinforcing the already presented challenges in terms of the education and retention of human resources, and especially underscoring the importance of the aspect of education that concerns the development of values.

## CONCLUSION

Having begun with the assertion that the relationship between human capital and growth is not altogether clear, this study strove to penetrate the details of certain aspects of human capital relevant to a post-communist, post-conflict transition country such as Serbia, and to seek out those elements that may be critical for its future success.

It drew a global picture of the role of education in the knowledge-based world of the 21<sup>st</sup> century and presented the ways in which European countries are dealing with some of its challenges. Most importantly, this refers to the emphasis on lifelong learning, quality assurance, the changing role of teachers, school accountability, and the vital importance of integration in the area of higher education. It was made clear that the reforms along these lines are guided by clear objectives and measurable against observable achievements, chiefly in the form of PISA tests. Having long held their own education systems as superior, post-communist Central European countries are now adopting some of these reforms as well, and are additionally undertaking measures to heal their education of the damaging effects of socialist control. While there are still areas in which they need improving (e.g. education equity), these countries have mainly adopted a modern outlook on education, according to which it should serve the specific purpose of preparing the young for an unpredictable future in which a high level of education will become an unprecedented necessity. This much is still uncertain in Serbia, where education is currently influenced by a very mixed legacy of communism, the disintegration of the 1990's, and the faltering recovery of the post-2000 period. However, a certain amount of good will was generated in the system during the 2001-2003 period and the reform infrastructure built over those three years has not been entirely dismantled. This means that although it may be challenging to gain the trust of stakeholders for renewed reforms, it is not impossible, and a good systemic basis for such moves still exists.

Next, the study dealt with the difficulty posed by sheer numbers of skilled persons to bear a country's human capital. Tackling the question of the "brain drain" from developing to developed countries, it reached the conclusion that this is not a black-and-white image. There are numerous reasons why the emigration of talented individuals could be beneficial to their source countries, including not only cash remittances but also the benefits of exposure to different educational and professional environments and the possible creation of "scientific diasporas" to aid sending countries' development. The

long-term best solution is “brain exchange” in the form of temporary and circular migration, from which all actors can benefit. While this can be difficult to achieve quickly, there are policy measures that can be taken to foster such exchanges.

Looking at the brain drain from Serbia, the study concluded that its scale had indeed been devastating, but that economic progress and stabilization may still help the situation. There is a very clear need to monitor and quantify returns so that adequate policies can be implemented. Following 2000, several steps in the right direction have been taken and Serbia does have room for utilizing the benefits of a large emigre population through establishing better diaspora links.

Finally, the last chapter dealt with the somewhat less tangible question of human capital allocation. It examined the choices made by skilled individuals and the possible effects of these choices on the overall economic growth of a country. The greatest benefit would emerge from having the most able people to invest their talent into entrepreneurship, which is often not the case – rather, they may turn to rent seeking activities if the returns on talent are greater in that sector. In Serbia, the great majority of people rely on the state rather than own initiative for the provision of economic welfare, and most value job security over any financial rewards. The extent to which this is a temporary effect of the transition is unclear, and so is the distribution of such views among the highly skilled. On the other hand, a culture of strong distaste for corruption exists. The actual allocation of talent as well as the forces at work behind the allocation should be researched further.

There is no need to explain that Serbia, as well as any other country today, exists in its environment and that this environment is quickly expanding to include every corner of the planet. Not only does it exist in it, it is *dependent* on it – more so given its recent history of violent conflict with both its immediate neighbors and the wider international community, especially its most influential parts. Here is a country whose leaders have given their best to keep it away and out of global developments and this, they neither can nor will do any longer. The trend of greater reliance on knowledge and skill as the engine of growth is now truly a global one, and Serbia has no choice but to respond to it. The essential change that should take place is the adoption of an integrated vision and strategy for human development, which would include and take account of the aspects of development covered by this study, as well as several other relevant policy areas, such as healthcare and minority policy. That such a vision is now a conceivable reality

is already significant, but in order to have effective results and not deepen the existing wide gap between Serbia and the developed world, it needs to be carried out quickly and responsibly.

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## **ANNEXES**

## Annex 1. Selected Key Economic Indicators for Serbia

	2000	2001	2002	2003	2004 <sup>1)</sup>	2004 January-June	2005	2005 forecast	2006
Population total <sup>2)</sup>	7661.4	7736.4	7615.1	7532.6	7560.0	.	.	.	.
GDP total, curr. prices, CSD mn	355168	708423	618231	1095402	1326000	.	.	1570000	1610000
annual change in % (real)	5.2	5.1	4.5	2.4	8.6	5.8	6.1	4	5
GDP/capita (EUR at exchange rate) <sup>3)</sup>	882	1540	2016	2236	2365	.	.	.	.
GDP/capita (EUR at PPP - w/w)	4250	4630	5010	5140	5700	.	.	.	.
Gross industrial production <sup>4)</sup>									
annual change in % (real)	11.4	0.1	1.8	-3.0	7.1	7.5	-2.1	2	4
Gross agricultural production									
annual change in % (real)	-12.8	18.6	-3.4	-7.2	19.5	.	.	.	.
Construction, hours of work actually done									
annual change in % (real)	.	-13.8	-7.4	10.9	5.2	.	.	.	.
Gross fixed investment, CSD mn, nom.	50047	66766	122822	.	.	.	.	.	.
annual change in % (real)	13.2	-4.1	-0.8	.	.	.	.	.	.
Employment, total, th. pers., average <sup>5)</sup>	2087.2	2101.7	2086.7	2041.4	2051.0	.	.	.	.
annual change in %	-2.6	0.2	-1.7	-1.2	0.5	.	.	.	.
Reg. employees in industry, th. pers., avg.	.	704.6	648.1	605.3	582.0	588.0	537.0	.	.
annual change in %	.	.	-8.0	-6.6	-7.1	-7.6	-8.0	.	.
LFS - unemployed, th. pers., average <sup>6,6)</sup>	425.6	432.7	459.6	500.3	605.4	.	.	.	.
LFS - unemployment rate in %, average <sup>5,6)</sup>	12.1	12.2	13.3	14.6	18.5	.	.	20	22
Reg. unemployment rate in %, end of period <sup>5)</sup>	.	.	30.5	31.9	32.4	31.5	32.7	34	34
Average gross monthly wages, CSD <sup>7)</sup>	3799	6691	13280	16612	20555	16088	23566	.	.
annual change in % (real, net)	5.5	16.6	26.9	13.6	11.1	13.9	6.2	.	.
Consumer prices, % p. a.	79.6	63.3	16.6	9.9	11.4	9.8	16.3	15	10
Producer prices in industry, % p. a.	102.6	67.7	8.8	4.6	9.1	7.3	13.4	15	10
General governm. budget, nat. def., % GDP									
Revenues	.	38.1	44.3	43.1	44.8	.	.	.	.
Expenditures	.	40.7	48.0	47.3	46.2	.	.	.	.
Deficit (-) / surplus (+), % GDP	.	-1.6	-3.7	-4.2	-1.5	.	.	.	.
Public debt in % of GDP	.	.	.	.	.	.	.	.	.
Discount rate, % p. a., end of period	26.3	16.4	9.5	9.0	8.5	8.5	8.5	.	.
Current account <sup>8)</sup>	-352	-395	-1522	-1555	-2349	-1120	-414	-2000	-2400
Current account in % of GDP	-1.5	-3.3	-10.0	-9.2	-13.0	.	.	-11	-12
Gross reserves of NB, excl. gold, EUR mn	429.9	1138.6	2076.8	2726.2	3066.0	2675.7	3512.9	.	.
Gross external debt, EUR mn	11859	12099	10788	10858	10355	10085	11392	.	.
FDI net, EUR mn <sup>9)</sup>	55	184	504	1264	777	281	568	.	.
Exports of goods, BOP, EUR mn <sup>8)</sup>	1699	1621	2202	2527	3133	1320	1760	3600	3960
annual growth rate in %	.	13.1	14.7	14.8	24.0	13.9	34.8	15	10
Imports of goods, BOP, EUR mn <sup>8,9)</sup>	3831	4755	5956	6615	6799	3998	3508	6000	9900
annual growth rate in %	.	31.0	25.3	11.0	33.0	33.6	-12.3	2	10
Exports of services, BOP, EUR mn <sup>8)</sup>	495	626	680	691	1166	541	598	.	.
annual growth rate in %	.	66.8	7.8	0.1	34.1	36.6	10.5	.	.
Imports of services, BOP, EUR mn <sup>8)</sup>	319	360	607	636	870	381	569	.	.
annual growth rate in %	.	12.8	68.4	4.7	38.9	43.8	49.3	.	.
Average exchange rate CSD/USD	16.40	66.36	64.40	57.58	58.69	57.61	63.72	.	.
Average exchange rate CSD/EUR (ECU)	15.04	69.46	60.88	65.05	73.00	70.30	91.30	85	90
Purchasing power parity CSD/USD, w/w	9.60	17.90	21.60	24.80	26.70	.	.	.	.
Purchasing power parity CSD/EUR, w/w	10.90	20.20	24.40	28.30	30.70	.	.	.	.

1) Preliminary. - 2) From 2002 according to census 2002. 2004: w/w estimate. - 3) In 2000 w/w estimate using black market rate. - 4) From 2004 according to NACE and new weighting system. - 5) Excluding individual farmers. - 6) From 2004 according to census 2002 and revisions based on ILO and Eurostat methodology. - 7) From 2002 including various allowances. - 8) Converted from USD. - 9) Up to 2004 in of .erns.

Source: w/w Database incorporating national statistics; w/w forecasts.

## Annex 2. Selected (Un)Employment Data

## 3. Employed population by employment status and sex, October 2004

	Republic of Serbia			
	Total	Central Serbia		Vojvodina
		All	City of Belgrade	
<b>TOTAL</b>				
Total	2930846	2182037	633194	748809
Self-employed	659427	504626	97014	154801
Employees	2059417	1489929	529919	569488
Supporting household members	212002	187482	6261	24519
<b>Men</b>				
Total	1708858	1255012	344823	453846
Self-employed	496230	376516	68494	119714
Employees	1155256	828752	275364	326505
Supporting household members	57372	49744	965	7626
<b>Women</b>				
Total	1221988	927025	288371	294963
Self-employed	163197	128110	28520	35087
Employees	904161	661177	254555	242983
Supporting household members	154630	137738	5296	16893

Source: *The Labor Force Survey, 2004.*

## 4. Unemployed by educational attainment and sex, October 2004

	Republic of Serbia			
	Total	Central Serbia		Vojvodina
		All	City of Belgrade	
<b>TOTAL</b>				
Total	665436	491648	132075	173788
Uneducated	4130	2190	-	1941
Primary school, incompleted	20339	13224	3050	7116
Primary school	122016	87690	18779	34326
Secondary school	447127	331254	87156	115874
Higher school	37062	28925	9778	8137
University Degree holders: Faculty, Academy, High School	33248	27220	12933	6028
Post-Graduates (MA, MSc, PhD)	1513	1145	379	368
<b>Men</b>				
Total	303209	224850	63687	78359
Uneducated	1199	-	-	1199
Primary school, incompleted	9651	6091	2097	3560
Primary school	49848	35138	7237	14710
Secondary school	210956	158691	45653	52265
Higher school	16844	13014	4588	3830
University Degree holders: Faculty, Academy, High School	13576	11150	4113	2426
Post-graduates (MA, MSc, PhD)	1134	766	-	368
<b>Women</b>				
Total	362227	266798	68388	95429
Uneducated	2931	2190	-	742
Primary school, incompleted	10688	7133	953	3554
Primary school	72168	52552	11542	19616
Secondary school	236171	172563	41503	63607
Higher school	20218	15911	5191	4307
University Degree holders: Faculty, Academy, High School	19672	16070	8820	3602
Post-graduates (MA, MSc, PhD)	379	379	379	-

Source: *The Labor Force Survey, 2004.*

### Annex 3. Summary PISA Results in Mathematics and Reading

Figure 2.16a ■ Percentage of students at each level of proficiency on the mathematics scale

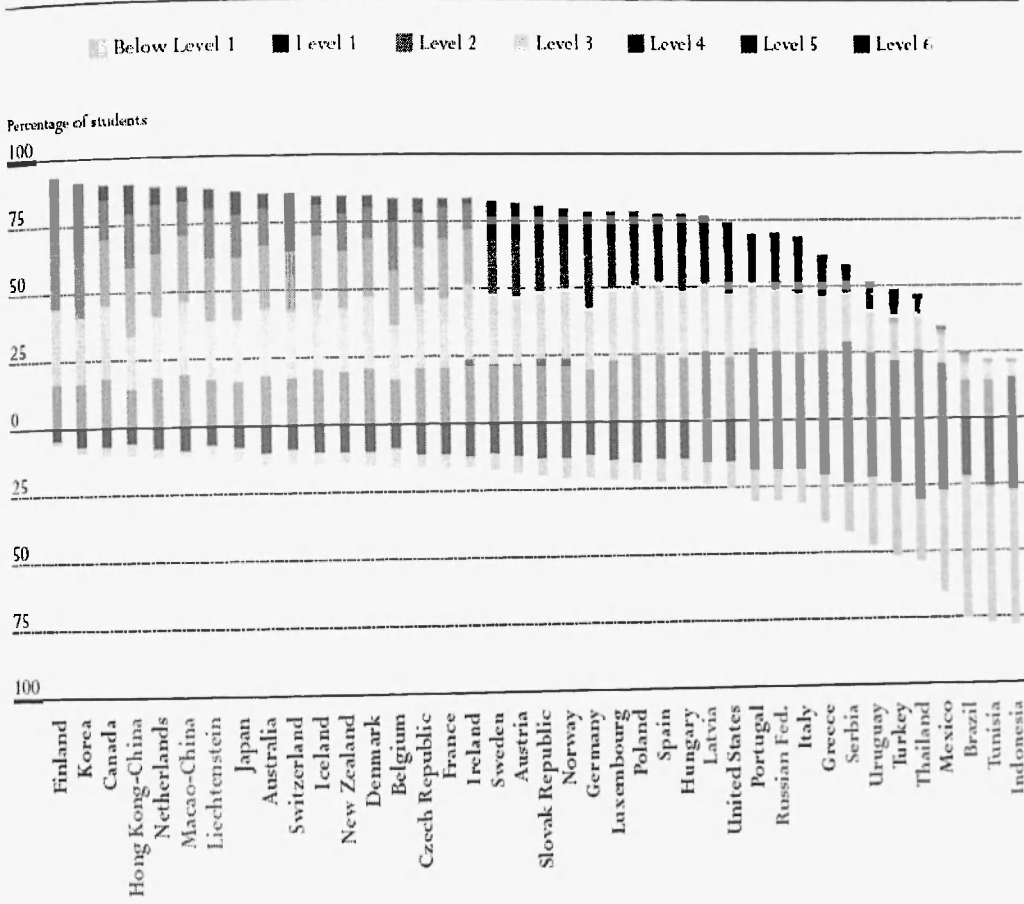
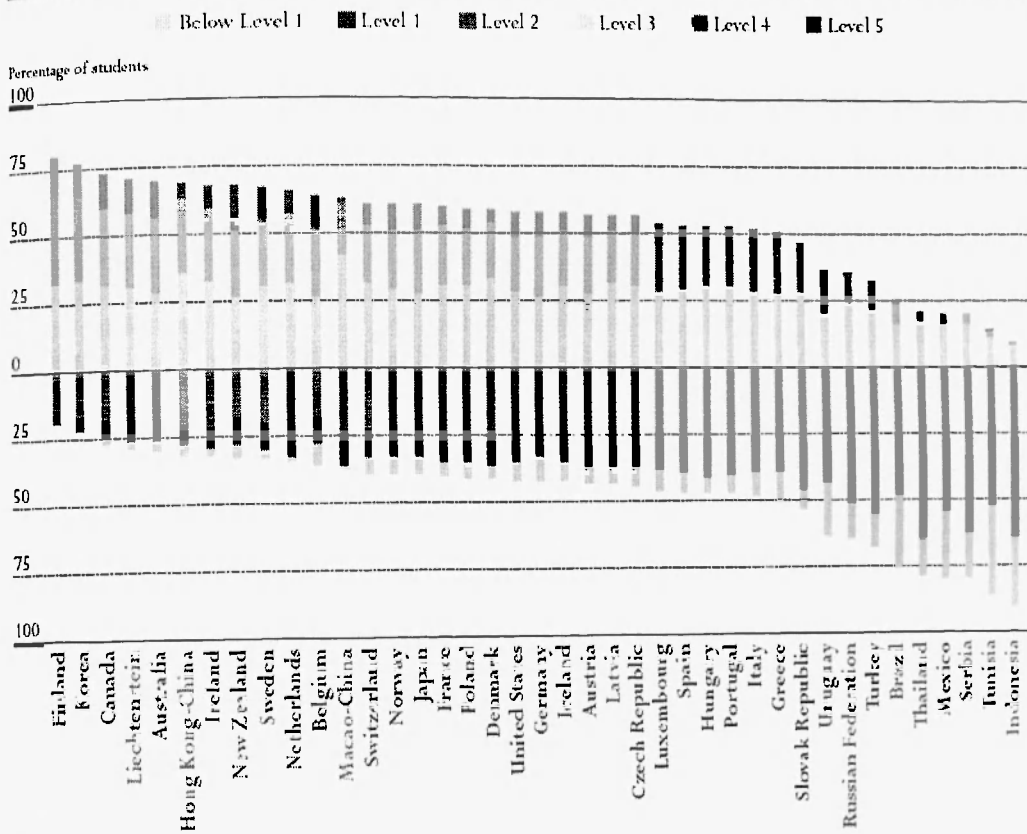


Figure 6.2 ■ Percentage of students at each level of proficiency on the reading scale



Countries are ranked in descending order of percentage of 15-year-olds in Levels 3, 4 and 5.

Source: OECD PISA 2003 database, Table 6.1.



#### Annex 4. The Bologna Declaration

*Joint declaration of the European Ministers of Education Convened in Bologna on the  
19th of June 1999*

The European process, thanks to the extraordinary achievements of the last few years, has become an increasingly concrete and relevant reality for the Union and its citizens. Enlargement prospects together with deepening relations with other European countries, provide even wider dimensions to that reality. Meanwhile, we are witnessing a growing awareness in large parts of the political and academic world and in public opinion of the need to establish a more complete and far-reaching Europe, in particular building upon and strengthening its intellectual, cultural, social and scientific and technological dimensions.

A Europe of Knowledge is now widely recognised as an irreplaceable factor for social and human growth and as an indispensable component to consolidate and enrich the European citizenship, capable of giving its citizens the necessary competences to face the challenges of the new millennium, together with an awareness of shared values and belonging to a common social and cultural space.

The importance of education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies is universally acknowledged as paramount, the more so in view of the situation in South East Europe.

The Sorbonne declaration of 25th of May 1998, which was underpinned by these considerations, stressed the Universities' central role in developing European cultural dimensions. It emphasised the creation of the European area of higher education as a key way to promote citizens' mobility and employability and the Continent's overall development.

Several European countries have accepted the invitation to commit themselves to achieving the objectives set out in the declaration, by signing it or expressing their agreement in principle. The direction taken by several higher education reforms launched in the meantime in Europe has proved many Governments' determination to act.

European higher education institutions, for their part, have accepted the challenge and taken up a main role in constructing the European area of higher education, also in the wake of the fundamental principles laid down in the Bologna Magna Charta Universitatum of 1988. This is of the highest importance, given that Universities' independence and autonomy ensure that higher education and research systems continuously adapt to changing needs, society's demands and advances in scientific knowledge.

The course has been set in the right direction and with meaningful purpose. The achievement of greater compatibility and comparability of the systems of higher education nevertheless requires continual momentum in order to be fully accomplished. We need to support it through promoting concrete measures to achieve tangible forward steps. The 18th June meeting saw participation by

authoritative experts and scholars from all our countries and provides us with very useful suggestions on the initiatives to be taken.

We must in particular look at the objective of increasing the international competitiveness of the European system of higher education. The vitality and efficiency of any civilisation can be measured by the appeal that its culture has for other countries. We need to ensure that the European higher education system acquires a world-wide degree of attraction equal to our extraordinary cultural and scientific traditions.

While affirming our support to the general principles laid down in the Sorbonne declaration, we engage in co-ordinating our policies to reach in the short term, and in any case within the first decade of the third millennium, the following objectives, which we consider to be of primary relevance in order to establish the European area of higher education and to promote the European system of higher education world-wide:

**Adoption of a system of easily readable and comparable degrees**, also through the implementation of the Diploma Supplement, in order to promote European citizens employability and the international competitiveness of the European higher education system

**Adoption of a system essentially based on two main cycles**, undergraduate and graduate. Access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years. The degree awarded after the first cycle shall also be relevant to the European labour market as an appropriate level of qualification. The second cycle should lead to the master and/or doctorate degree as in many European countries.

**Establishment of a system of credits** - such as in the ECTS system - as a proper means of promoting the most widespread student mobility. Credits could also be acquired in non-higher education contexts, including lifelong learning, provided they are recognised by receiving Universities concerned.

**Promotion of mobility** by overcoming obstacles to the effective exercise of free movement with particular attention to:

- for students, access to study and training opportunities and to related services
- for teachers, researchers and administrative staff, recognition and valorisation of periods spent in a European context researching, teaching and training, without prejudicing their statutory rights.

**Promotion of European co-operation in quality assurance** with a view to developing comparable criteria and methodologies.

**Promotion of the necessary European dimensions in higher education**, particularly with regards to curricular development, inter-institutional co-operation, mobility schemes and integrated programmes of study, training and research.

We hereby undertake to attain these objectives - within the framework of our institutional competences and taking full respect of the diversity of cultures, languages, national education systems and of University autonomy - to consolidate the European area of higher education. To that end, we will pursue the ways of intergovernmental co-operation, together with those of non governmental European organisations with competence on higher education. We expect Universities again to respond promptly and positively and to contribute actively to the success of our endeavour.

Convinced that the establishment of the European area of higher education requires constant support, supervision and adaptation to the continuously evolving needs, we decide to meet again within two years in order to assess the progress achieved and the new steps to be taken.

### **Signatories:**

Caspar EINEM, Minister of Science and Transport (Austria)

Jan ADE, Director General, Ministry of the Flemish Community, Department of Education (Belgium)

Gerard SCHMIT, Director General of French Community, Ministry for Higher Education and Research (Belgium)

Eduard ZEMAN, Minister of Education, Youth and Sport (Czech Republic)

Anna Mmia TOTOMANOVA, Vice Minister of Education and Science (Bulgaria)

Tonis LUKAS, Minister of Education (Estonia)

Margrethe VESTAGER, Minister of Education (Denmark)

Claude ALLEGRE, Minister of National Education, Research and Technology (France)

Maija RASK, Minister of Education and Science (Finland)

Ute ERDSIEK-RAVE, Minister of Education, Science, Research And Culture of the Land Schleswig-Holstein (Permanent Conference of the Ministers of Culture of the German Länders)

Wolf-Michael CATENHUSEN, Parliamentary State Secretary, Federal Ministry of Education and Research (Germany)

Adam KISS, Deputy State Secretary for Higher Education and Science (Hungary)

Gherassimos ARSENIS, Minister of Public Education and Religious Affairs (Greece)

Pat DOWLING, Principal Officer Ministry for Education and Science (Ireland)

Gudridur SIGURDARDOTTIR, Secretary General, Ministry of Education, Science and Culture (Iceland)

Tatiana KOKEK, State Minister of Higher Education and Science (Latvia)

Ortensio ZECCHINO, Minister of University and Scientific And Technological Research (Italy)

Erna HENNICOT-SCHOEPGES, Minister of National Education and Vocational Training (Luxembourg)

Kornelijus PLATELIS, Minister of Education and Science (Lithuania)

Loek HERMANS, Minister of Education, Culture and Science (the Netherlands)

Louis GALEA, Minister of Education (Malta)

Willibald WINKLER, Under Secretary of State of National Education (Poland)

Jon LILLETUN, Minister of Education, Research and Church Affairs (Norway)

Andrei MARGA, Minister of National Education (Romania)

Eduardo Marçal GRILO, Minister of Education (Portugal)

Pavel ZGAGA, State Secretary for Higher Education (Slovenia)

Milan FTACNIK, Minister of Education (Slovak Republic)

Agneta BLADH, State Secretary for Education and Science (Sweden)

D.Jorge FERNANDEZ DIAZ, Secretary of State of Education, Universities, Research and Development (Spain)

Baroness Tessa BLACKSTONE of Stoke Newington, Minister of State for Education and Employment (United Kingdom)

Charles KLEIBER, State Secretary for Science and Research (Swiss Confederation)

## Annex 5. Doing Business in Serbia

Ease of...	Economy rank	Best performer	Worst Performer
<b>Doing Business</b>	<b>92</b>	<b>New Zealand</b>	<b>Congo, Dem. Rep.</b>
Starting a Business	35	Canada	Angola
Dealing with Licenses	130	Palau	Tanzania
Hiring and Firing	61	Palau	Burkina Faso
Registering Property	103	New Zealand	Nigeria
Getting Credit	99	United Kingdom	Cambodia
Protecting Investors	45	New Zealand	Afghanistan
Paying Taxes	74	Maldives	Belarus
Trading Across Borders	123	Denmark	Iraq
Enforcing Contracts	110	Norway	Timor-Leste
Closing a Business	90	Japan	West Bank and Gaza

### Starting a Business (2005)

The challenges of launching a business in Serbia and Montenegro are shown below. Entrepreneurs can expect to go through **10** steps to launch a business over **15** days on average, at a cost equal to **6.0%** of gross national income (GNI) per capita. They must deposit at least **9.5%** of GNI per capita in a bank to obtain a business registration number.

Indicator	Serbia and Montenegro	Region	OECD
Procedures (number)	10	9.7	6.5
Time (days)	15	36.5	19.5
Cost (% of income per capita)	6.0	13.5	6.8
Min. capital (% of income per capita)	9.5	49.1	41.0

### Dealing with Licenses (2005)

The steps, time, and costs of complying with licensing and permit requirements for ongoing operations in Serbia and Montenegro are shown below. It takes **21** steps and **212** days to complete the process, and costs **2,195.0%** of income per capita.

Indicator	Serbia and Montenegro	Region	OECD
Procedures (number)	21	21.4	14.1
Time (days)	212	251.8	146.9
Cost (% of income per capita)	2,195.0	668.9	75.1

### Hiring & Firing Workers (2005)

The difficulties that employers in Serbia and Montenegro face in hiring and firing workers are shown below. Each index assigns values between 0 and 100, with higher values representing more rigid regulations. The Rigidity of Employment Index is an average of the three indices. For Serbia and Montenegro, the overall index is **28**.

Indicator	Serbia and Montenegro	Region	OECD
Difficulty of Hiring Index	44	34.5	30.1
Rigidity of Hours Index	0	56.9	50.4
Difficulty of Firing Index	40	41.5	27.4

Rigidity of Employment Index	28	44.3	36.1
Hiring cost (% of salary)	25.0	29.6	20.7
Firing costs (weeks of wages)	21.2	32.8	35.1

### Registering Property (2005)

The ease with which businesses can secure rights to property is measured below. In Serbia and Montenegro, it takes **6** steps and **111** days to register property. The cost to register property there is **5.3%** of overall property value.

Indicator	Serbia and Montenegro	Region	OECD
Procedures (number)	6	6.5	4.7
Time (days)	111	127.1	32.2
Cost (% of property value)	5.3	3.0	4.8

### Getting Credit (2005)

Measures on credit information sharing and the legal rights of borrowers and lenders in Serbia and Montenegro are shown below. The Legal Rights Index ranges from 0-10, with higher scores indicating that those laws are better designed to expand access to credit. The Credit Information Index measures the scope, access and quality of credit information available through public registries or private bureaus. It ranges from 0-6, with higher values indicating that more credit information is available from a public registry or private bureau.

Indicator	Serbia and Montenegro	Region	OECD
Legal Rights Index	5	5.6	6.3
Credit Information Index	1	2.5	5.0
Public registry coverage (% adults)	0.1	1.4	7.5
Private bureau coverage (% adults)	0.0	6.6	59.0

### Protecting Investors (2005)

The indicators below describe three dimensions of investor protection: transparency of transactions (Extent of Disclosure Index), liability for self-dealing (Extent of Director Liability Index), shareholders' ability to sue officers and directors for misconduct (Ease of Shareholder Suits Index) and Strength of Investor Protection Index. The indexes vary between 0 and 10, with higher values indicating greater disclosure, greater liability of directors, greater powers of shareholders to challenge the transaction, and better investor protection.

Indicator	Serbia and Montenegro	Region	OECD
Disclosure Index	7	4.5	6.1
Director Liability Index	6	4.3	5.1
Shareholder Suits Index	4	5.6	6.6
Investor Protection Index	5.7	4.8	5.9

### Paying Taxes (2005)

The effective tax that a medium size company in Serbia and Montenegro must pay or withhold within a year is shown below. Entrepreneurs there must make **41** payments, spend **168** hours, and pay **46.3%** of gross profit in taxes.

<b>Indicator</b>	<b>Serbia and Montenegro</b>	<b>Region</b>	<b>OECD</b>
Payments (number)	41	46.9	16.9
Time (hours)	168	431.5	197.2
Total tax payable (% gross profit)	46.3	50.2	45.4

### Trading Across Borders (2005)

The costs and procedures involved in importing and exporting a standardized shipment of goods in Serbia and Montenegro are detailed under this topic. Every official procedure involved is recorded - starting from the final contractual agreement between the two parties, and ending with the delivery of the goods.

<b>Indicator</b>	<b>Serbia and Montenegro</b>	<b>Region</b>	<b>OECD</b>
Documents for export (number)	9	7.7	5.3
Signatures for export (number)	15	10.9	3.2
Time for export (days)	32	31.6	12.6
Documents for import (number)	15	11.7	6.9
Signatures for import (number)	17	15.0	3.3
Time for import (days)	44	43.0	14.0

### Enforcing Contracts (2005)

The ease or difficulty of enforcing commercial contracts in Serbia and Montenegro is measured below. It takes **33** steps and **635** days to enforce contracts there. The cost of enforcing contracts is **18.1%** of debt.

<b>Indicator</b>	<b>Serbia and Montenegro</b>	<b>Region</b>	<b>OECD</b>
Procedures (number)	33	..	17.4
Time (days)	635	..	29.6
Cost (% of debt)	18.1	..	..

### Closing a Business (2005)

The time and cost required to resolve bankruptcies is shown below. In Serbia and Montenegro, the process takes **2.7** years and costs **23%** of the estate value. The recovery rate, expressed in terms of how many cents on the dollar claimants recover from the insolvent firm, is **20.30**.

<b>Indicator</b>	<b>Serbia and Montenegro</b>	<b>Region</b>	<b>OECD</b>
Time (years)	2.7	3.5	1.5
Cost (% of estate)	23	14.0	7.4
Recovery rate (cents on the dollar)	20.3	29.8	73.8