

# Ekonomika preduzeća



**Serbian Association of Economists  
Journal of Business Economics and Management**

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# INVESTICIONI KREDIT BEZ OBAVEZNE HIPOTEKE

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*Ekonomika preduzeća* has considered the threat of delayed transition from the very onset of systemic transition in Serbia. In the *Introductory paper* of this edition, maestro *Lj. Madžar* acknowledged the fears that economic development malaise is a legacy of the socialist past. No doubt, the argument contained in the title of the paper may have some merit. In such context, sustainability of transitional achievements, the author says, comes not from superiority of transitional strategy and certain policy measures, but from the ability of political leaders to foster an economy that can learn from past mistakes faster. I concede that we are in a similar territory when we address the issue of advanced human capital as a component of the labor markets. This was a topic investigated by a duo of young professors from the Faculty of Economics at the University of Belgrade, *M. Jandrić* and *D. Molnar*. In their paper, they tested eight variables covering key dimensions of the quality of employment for the EU and non-EU countries, including Serbia. We hope this paper will deepen future discussion and accelerate the search for solutions.

Two papers form part of the *Information Technologies* section. A quartet of authors from different institutions – *L. Živković*, *Đ. Kutlača*, *A. Kleinnbrik* and *D. Štrbac* – analyzed the software industry in Serbia. In recent past, it was the most dynamic and fastest growing industry in Serbia. Special focus in empirical testing was placed on business model change, cooperation with R&D units and necessary adjustments in the education system. The findings are practical and intriguing. The software industry yields more prosperity than traditional industries, although the budget will not benefit proportionally from it. In the second paper, *J. Filipović*, a young professor teaching Marketing at the Faculty of Economics, University of Belgrade, detailed on the use of digital media by the Serbian migrants.

In the *Marketing* section, *V. Babić*, *S. Zarić* and *R. Bujković* analyze the companies' communication with the non-market environment. The authors challenge the premise that companies that are highly successful in their market performance can, at the same time, fail to manage well their relations with the political and social environment or regulatory bodies.

The *Finance* section of this edition includes two papers. The first one, authored by *S. Milošević Avdalović* of the Faculty of Economics, University of Novi Sad, addresses the question of the impact of bank-specific factors on the banking industry liquidity in Serbia. The author used panel data regression analysis for two indicators of liquidity (cash flow/total asset and loans/total asset). The second paper, written by a duo of authors *S. Jelisavac Trošić* and *B. Stojanović-Višić*, offers a comparative analysis of fiscal rules in the EU and Serbia.

**Prof. Dragan Đuričin**, Editor in Chief



Founded in 1947, the Serbian Association of Economists is a professional organization which gathers professional economists and aspires to promote the economics profession for the benefit of the society at large. Main activities of the Association are: organization of scientific conferences and seminars, education and training programs, publishing activity and collaboration with academic institutions, regulatory bodies and government agencies. These activities are oriented toward the development and popularization of economic science and profession, enhancement of the quality of corporate and public governance, improvement of the economic system, regulatory framework and economic policy, strengthening of the competitiveness of Serbian economy, and promotion of ethical behavior in economic decision-making.

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## ECONOMIC DEVELOPMENT MALAISE AS A LEGACY OF THE SOCIALIST PAST

Malaksavanje ekonomskog razvoja kao posledica  
socijalističke prošlosti

### Abstract

The paper builds on previously established research results according to which the alleged superiority of the socialist institutional order is an abominable fallacy. The main point in proving that the old systems had in fact been inferior consists in underlining their unsustainability. The high rates of growth achieved in some past socialist periods are not the true indicators of the old systems' efficiency, because they could not be maintained permanently. The central points of the paper relate to the misperception about the socialist system having been satisfactorily efficient, and to the abysmal consequences of the socialist institutional heritage. The transition crises are the product of the old system, and ascribing them to the market-based system is a grave error. Moreover, the legacies of the old system fatally constrain the workings of the new one and prevent it from realizing its full potential. The systemic change has not only been accompanied by false ideas about comparative efficiency of the alternative arrangements but, more than that, it made it possible and revealed the harmful effects of the socialist past on the reaches and true potentialities of the new decentralized and private property based institutional order.

**Keywords:** *institutions, rhythm of institutional change, reforms, centralism, decentralization, socialism, collectivism, breakdown of the systems, economic development, extensive development, economic efficiency*

### Sažetak

Rad se oslanja na prethodno ustanovljene rezultate istraživanja prema kojima je tobožnja superiornost socijalističkog institucionalnog poretka jedna zapanjujuća zabluda. Glavna poenta u dokazivanju da je prethodni sistem bio u stvari inferioran sastoji se u isticanju njegove neodrživosti. Visoke stope rasta ostvarivane u nekim periodima iz socijalističke prošlosti nisu pravi pokazatelji efikasnosti starog sistema zato što nisu mogle da budu trajno održane. Udarna poenta rada odnosi se na zabludu prema kojoj je socijalistički sistem bio zadovoljavajuće efikasan, a potom i na zastrašujuće posledice socijalističke institucionalne baštine. Tranzicione krize proizvod su starog sistema, a katastrofalna je greška pripisivati ih tržišno zasnovanom sistemu. Štaviše, baština starog sistema pogubno ograničava funkcionisanje novog i onemogućava mu da ostvari svoj pun potencijal. Sistemske promene ne samo da su bile praćene pogrešnim predstavama o komparativnoj efikasnosti alternativnih aranžmana, nego su, više od toga, omogućile i otkrile štetne učinke socijalističke prošlosti na domete i mogućnosti novog decentralizovanog poretka zasnovanog na privatnom vlasništvu.

**Ključne reči:** *institucije, tempo institucionalnih promena, reforme, centralizam, decentralizacija, socijalizam, kolektivizam, sistemski slom, privredni razvoj, ekstenzivni razvoj, ekonomska efikasnost*

## Introduction

Economic development proved to be one of the most seductive areas in the science of economics and one of the most comprehensively and most thoroughly examined fields in the universe of its empirical aspects. Yet, until lately very little, if any, attention has been devoted to its quality. Fascination with the rhythm of growth and with growth rates as its quantitative expression had been such as to overshadow its other, not clearly visible and not fully understood, qualitative aspects. It turned out that among the qualitative features of the development process three following ones stand out: the way it affects the distribution of income and wealth and thus economic inequality in the given society, its impact on natural environment and the climatic change and, particularly, its sustainability. The third among these is certainly the truly crucial and the most important: if the process does not contain dynamic forces guaranteeing its unimpaired continuation, then the temporary rate of growth, achieved within a limited time interval, loses much of its significance and appeal.

In a recently published paper [10] this author examined to some detail the phenomenon of the, typically and unexceptionally, extensive economic development process, the principal failing of which had been its unsustainability. Socialist economies achieved during a limited period – it typically ran for about a quarter century – truly impressive rates of growth, but its extensive character, the paradigmatic feature of the socialist reconstruction implied and predetermined dramatic future deceleration, an outcome which meant stagnation for all practical purposes. A more complete structural analysis showed that the high rate of growth of the “golden age” acted as a basic cause of the future slowdowns, extensive growth meant and conditioned future collapse as the predictable consequence of the spectacular former upswings.

Breakdown of the processes of socialist economic expansion opened up grave analytical problems and gave rise to an overwhelming multitude of misconceptions both within the ranks of the economic profession and, even more, within the general public. When the economy practically breaks down and, by this disaster, forces upon the society a far-reaching institutional change, the question

naturally arises as to whether the catastrophe is endemically foreordained by the old system – the system has outlived itself and the downfall is its unavoidable outcome – or the cataclysm, again foreseeable, comes as a consequence of the systemic change: not a few people, including the high ranking professionals, are teed up to contend that the economic ruin is simply the consequence of the change of the system: replacing a workable system by the new and vastly inferior one produces all these adversities, and the restoration of the old order is the right way out. A very judicious analysis is required to disentangle these multiply interrelated, overrefined and deceptive interconnections. The entire set-up is additionally blurred by a multiplicity of biases: in an intricate heap of facts and changes people are inclined to see what they prefer and, equally likely, to ignore what is not of their liking. Interests regularly interfere with honest efforts to discern the truth. On top of all this comes the structural deformity of the memory: collective memory is just as selective as the individual one and favorable turns become deeply imprinted, pushing the rest in the background.

One thus arrives at a disturbing conclusion: in such a twisted comparative analysis the new institutional order is likely to be marked rather unfavorably and certain nostalgia for the demised system is about to prevail. In this referential evaluation, the new institutional order and the reform as a way of bringing it about are doubly handicapped. First, the breakdown of the old system is flatly ascribed to the new one. Second and equally important, the old system leaves behind itself a wide array of pernicious and detrimental legacies which actually and quite visibly reduce the efficiency of the new institutional arrangements and, by reducing its objectively measured performance, make it look significantly inferior to what its actual potential veritably promises. In other words, the picture reflecting the merits of the two systems is on the way to become drastically distorted on two accounts: the breakdown of the old system is about to be ascribed to the new one and the destructive heritage of the old system will probably put a heavy shadow of the new arrangement by fettering it and preventing it from demonstrating its true potential for quite some time. The formerly cited paper [10] was devoted to unsustainability of the extensive growth as an

offshoot of the socialist development strategy, whereas this paper deals with socialist legacies as a host of constraining pulls and pushes, thrusts and drives, preventing the new system from tapping its true potential.

Belonging to the family of the collectivist authoritarian arrangements, the system developed in a number of varieties in Yugoslavia and inherited in Serbia, possessed the basic features of such arrangements, which means that it fell rather deep into pre-civilizational stages of broadly conceived social development. Decades and centuries of evolutionary, uncertain and haphazard, yet successful and positive, development were simply done away with.

### Memories of socialism: Perception of the electoral body as a colossal political obstacle

As a preliminary, the mistaken perception of the dynamic capacity of the socialist system, of its propulsive potentialities, remains unshakable among the broadest social strata, as the saying goes: among “the large masses” of the population. This is confirmed by many surveys of public opinion. Thus Mihailović [12, pp. 24-26] finds that in answer to the question what period was the happiest for the citizens of Serbia – the alternatives having been the period before the Second World War, the last decade of the past century, the first decade of the current century and the period of socialist development – no less than 81% thought that the socialist period had been the most agreeable! To the question of credibility of institutions, the alternative answers being those of times of Milošević, Đinđić, Koštunica and institutions of the demised socialist society (Tito’s times), this latest option won 45% of the obtained answers, while the next one in the row (Đinđić’s times) won only half of the pro-socialist figures, i.e. 23%! There are plenty of similar surveys, all demonstrating – in the eyes of the citizens – the superiority of socialist times and the then ruling institutions. Indeed, many papers and books have been written on the superiority of the socialism in the memory of the broadest public. However, cited figures are sufficient for this purpose.

A far-reaching conclusion drawn from surveys indicating massive desirability of socialism among such an overwhelming majority of citizens is about the

forbidding magnitude of a political problem deriving therefrom. With so many citizens yearning for socialism, it is next to the impossible to build a political platform which would be sufficiently attractive to the electoral body and, at the same time, secure a sequence of institutional changes leading to the successful modernization of the society. Such sequences, no matter how beneficial they might be from the point of view of the future economic and social development and how solid the reasons for its sustainability are, appear simply as a hard sell to the electoral body. On the other hand, the conviction of the prevailing majority of the voting public firmly tied to the would-be superiority of socialism offers ample space for political manipulation and all kinds of abuse, giving almost insuperable advantage even to those political agents who, ill-informed and inadequately educated, sincerely believe in the socialist ways of steering the society. It takes an extremely improbable Attaturkian political elite, one that will educate the society and simultaneously lead it.

The burden of the socialist legacy seems to depend on the intensity and the sincerity with which socialist institutions and values had been accepted and embraced by the largest masses of the population. It also seems that socialist ways of steering the development at large have let particularly deep roots in Serbia. The reasons for this phenomenon are hard to disentangle, but they probably stem from distant past and the peculiar collective memories; for peoples living under an alien yoke for centuries, collectivist merging together might have been the safest and the most efficient manner of preserving the identity. Be it as it may, the socialist heritage is not equally interred in all ex-socialist countries, and Serbia seems to be among (or *the*) most handicapped. Socialist legacies in Serbia are quite visible – high share of the state-owned sector in production, aggregate value added, capital and other macroeconomic aggregates, large spread of administrative price controls, conspicuous party allegiance as a criterion for selection of managerial personnel and other cadres in the public administration and the public sector, fanatic preservation of the loss-making public sector giants, a disturbingly high share of nonperforming loans in the banking sector, the inefficiency and the sluggishness of the judiciary, the high presence of destructive ways of

enlisting electoral support by judicial persecution of the businessmen, particularly those big and best known... – and it is their bewildering mass that is to be looked at in search for the causes of collective preferences causing slow development. As it turns out, in recent decades or so, there is only one among ex-socialist countries having a lower rate of growth of GDP than Serbia. After all, an all too frequently used *ceterum censeo* of this author has to be repeated here, too: the ultimate, truly basic determinants of economic development are located far outside of the economy!

Ascribing the present unsatisfactory development to the legacies of the demised socialist system will certainly be met with sharp controversies. That should be seen as no surprise, because the facts and their interrelations are numerous and interaction among all these, not even enough visible elements, are highly variegated and, in a way, superimposed upon each other in thick layers. The difficulty of encompassing and clarifying the – in many ways – interdependent effects of extant legacies are perhaps best observed if one takes account of how unclear and poorly understood was the much simpler problem of ascertaining the effects and consequences of the collectivist system at the time of their existence and actual working. It took such a high class annalist as Nutter [13] to disentangle the real achievements of the system and the regularities of its functioning.

The path-breaking work of Nutter produced a lasting shock not only within the profession but also among much broader collection of concerned circles in the society. The limited information and lack of comprehensive and systematic analyses made it impossible to see Soviet realities of the time, and greatly contributed to constructing overoptimistic and unduly favorable picture of the alleged success stories of the “socialist miracle”. The unfounded belief in the extraordinary development potential and unprecedented vitality of the new system continued to dominate the professional thinking despite the fact that Nutter established firmly and irrevocably that tsarist Russia experienced more rapid growth than Soviet Union, and, indeed, within periods of approximately equal length (some 45 years; Nutter [13, p. 182]). Even more shocking was the discovery that Soviet growth had not been more

rapid – the rates of growth are in fact almost equal – than the comparable U.S. growth. Namely, there are a number of noninstitutional factors affecting development which make for higher or lower rate of growth and are unrelated to the economic efficiency and propulsive force of the observed system. Nutter took care to isolate such factors as far as possible, mostly by not observing contemporaneous growth and selecting comparable periods instead; these were the periods in which noninstitutional development determinants, such as level of development and a number of exogenous factors were close in the two countries, if not exactly equal [13, *passim*, especially pp. 173-177].

Two such evidently unusual findings – the tsarist growth having been more rapid than the Soviet development and higher than the Soviet rate of growth accomplished by the USA in the comparable development stage and similar macroeconomic environment – should have shocked the public, both professional and the broader one, but the myth of Soviet extraordinary capability lingered on and lasted almost up until the break-up of the Soviet empire. The point of this argumentation is that some truths do not come either easily or quickly accepted, and in fact the most rigorous proofs do not contribute substantially to their acceptance. If the truth of tsarist Russia having been somewhat more rapid in its development than the Soviet Union did not get through for such a long time, it is obviously reasonable to expect even more resistance and more time until the relevant findings are accepted when it comes down to recognizing the perilous influence of socialist legacies.

In comparing the Soviet and American rates of growth, Nutter could not take into account the important fact that the Soviet growth had been realized as an extensive growth, which means by massive mobilization of the production factors, through mere and spectacular increasing quantities of these factors rather than through persistent increase of their productivity. The extensivity of growth is best seen through the relationships between the growth rates of employment and of output, the former being much above the latter. The two development episodes were in fact incomparable, as the Soviet growth, however rapid, was not sustainable and on that account alone had been vastly inferior. The lack of comparability derives not only



from the simple fact that extensive growth is short-lived if not ephemeral, but also from the fact that it generates pressing constraints on future growth, the sluggishness of the development in the future is in this case not due to the then conducted development policies, but to the ways and means through which the extensive growth had been realized in the past.

Accelerating development through massive mobilization of the production factors while neglecting technical progress as the only source of sustainable growth means predetermining perilous deceleration of future development, when factors of production, however abundant, simply exhaust their growth potential, while the necessary rhythm of technical progress is not assured to take over the role of the driving force in the process of development. A more general statement can be developed here: on the eve of the socialist turnaround – and this happens to be true for any economy at any point in time – the economy had a number of once-and-for-all, temporarily exhaustible development opportunities, and consuming any of them means that it will not be available in the future. Through extensive growth, but also in other ways – exploiting easy development options enabling the system to accelerate growth substantially for a limited time at the expense of accumulating all kinds of bottlenecks which out of necessity dramatically decelerate growth in the future – opportunistic development policies deplete the fund of unrepeatable options and thus achieve marked effects for a limited time at the expense of the imminent future slowdowns. The time interdependency of the growth rates makes it impossible to judge the efficiency of whatever development policies by weighing the simultaneously realized results, registered at the times to which such policies directly apply. The crucially important, but unfortunately regularly missing component in judging such efficiency is the dynamic potential which the observed policies bestow upon the future.

### **Socialist heritage revisited: The scars in the collective memory**

Because of the inevitable objective exposition to the risk and all kinds of uncertainty – starting a new business

is neck breaking in and by itself – entrepreneurship cannot flourish successfully and develop smoothly if it is additionally exposed to the institutional and policy risks. The basic, indispensable condition for tolerable development of a market economy is stable, predictable and within the limits of the possible rule-based economic policy, so that at least institutional and economic policy hazards are minimized if not entirely removed. The top economists of the world have persuasively been explaining the actual weakening of the developed economies and the malaise of unstable and insufficient growth by the volatile, reactive, here and there whimsical acting of economic policy, particularly monetary policy, and have pleaded for introduction of rules in carrying out of most policies, so that economic agents can within reasonable limits predict the policy moves as responses to various exogenous events [11], [2], [4]. Let it be added that only a stable, algorithmically clean economic policy can provide valuable service in coordinating flows of decisions and resources in a decentralized economy. It takes no particular effort to grasp what a terrible and terrifying blow socialist revolutions have had, with all those confiscations and jailings, dealt to entrepreneurship with memories of such perilous shocks extending over decades.

Entrepreneurs do *not* carry out their activities just for money; entrepreneurship is the field of their creative activity. By founding and expanding new businesses they *create*. Taking away their wealth would in a sense be equivalent to wiping somehow out books and articles produced during a good part of the lifetime by a writer. Attack on private wealth is tantamount to an encroachment on a person and their dignity, because the accumulation of property for a successful entrepreneur is the true and only manner of self-actualization, an evidence of having created something of value in their productive life. As owning various things is undeniably an important aspect of existence of every individual, and since even moderate size holdings and other forms of wealth were hit by confiscation, it is evident that millions of people were affected, and this institutionalized plundering must have left unalterable and irreducible marks in the collective remembering; it is destined to figure as a highly relevant social fact for a long lasting future.

We are again confronted with a formidable legacy of socialist order, with an element which originates in the socialist past but generates its deleterious impacts on the post-socialist present. Concrete actualizations of institutional systems in post-socialist countries do and have to differ among themselves, but this effect of the socialist heritage is common to all, it cuts across different systems and remains working and vigorous in time. This is the account on which the performance of all post-socialist systems comes out inferior but, again, the failing is not due to the deficiencies of these arrangements but to the doom of the socialist heritage.

The second powerful component of the socialist heritage in Serbia is a sort of a weird phenomenon which in this analysis will be called *hysteresis*. For the purpose of these considerations, hysteresis could be defined as a phenomenon of a macroeconomic variable not being able to return to the original position after having deviated from it under external pressures or for some other reason. The subject of these reflections is hysteresis in aggregate consumption which had, for a number of several coinciding factors, some of which are policy driven and other exogenous as far as economic policy goes, been augmented markedly above level consistent with resource endowment and productive capacity of the country. The principal reason was the abundant inflow of supplementary resources from abroad made possible and in fact conditioned by the courageous and worldwide acclaimed political break of Yugoslavia from the then powerful block of socialist countries dominated by the Soviet Union.

The supplementary inflow of resources was referred to as abundant as it, while oscillating from year to year, reached in certain years no less than 5% of the then used GSP (Gross Social Product). That flow was particularly large in the 1952-1960 period, but continued in some forms in the following years, too. However, when these flows substantially waned after 1960, Yugoslav workers started taking jobs in the developed west European countries – primarily in the then existing West Germany, France and Austria and, somewhat less, in the Scandinavian countries. Such an, at the time unorthodox, export of human capital triggered the continuing guest workers' remittances which substituted for the unilateral transfer from before. Another

opulent flow of additional means set in. Then came the 1970s with the flood of euro-dollars all over Europe and with easy and rich options for raising credits, which the country helped itself to in numerous ways and plentiful quantities. The foreign debt crisis developed after the 1980s, and only then the supplementary resources inflow thinned. This phenomenon was studied and intensely discussed on several occasions [7] and [8].

However, despite the volatility of the inflows and reduction of some of them through time, in a long period lasting some three decades, the population adjusted its consuming standards to the levels much above what would be possible had the own-resource constraints been operative. True, the rate of savings in those times was very high, but there remained sufficient room for raising consumption above what could be feasible with exclusively domestic spending potential. Raising consumption much above domestically generated income and especially *above income that would be available on the basis of strictly taken domestic resources* – one should not forget that the inflow of additional resources made it possible to use much more fully domestic capacities in the structurally distorted socialist economy – greatly contributed to the singularly insufficient future rates of savings which plague permanently the post-socialist economies in most ex-Yugoslav republics.

This author estimated the rates of domestic savings for the 2000-2012 period and found them to be oscillating around zero with taking negative values in quite a few encompassed years. These were calculated as percentage shares in GDP of the gross investment minus foreign trade deficit. Had depreciation charges been deducted, a horrifying picture would have been obtained. Begović [1, pp. 9-10] cites the estimates of the World Bank for the 2001-2015 period, resulting in an average savings rate of 4.8%. The difference strikes one as surprising, but is readily explained by the fact that the World Bank came up with the *national* savings rate, whereas the formerly mentioned rate had been the rate of *domestic* savings. The difference between the two is equal to the share of the difference of the *foreign trade* deficit and the *balance of payments* deficit in the GDP. This difference in the case of Serbia has been and remains very high since it

contains significant factor earnings mostly consisting of the difference between the worker remittances (a large positive quantity) and the interest paid on foreign debt (a much lower negative quantity).

Elaborating further the institutional realities of Serbia, an extremely important element of its systemic peculiarities deserves mentioning. As Pejovich [15, pp. 200-204] explained with admirable clarity, a malignant opportunism has been built into the very structure, into the deep foundations of the self-managed institutional system. Namely, due to the fact that the employees, and especially the elected managers, had extensive management rights but not the property rights, their decision-making horizon had been limited and far from the horizon of infinite lengths implied by the very nature of the rights of ownership. Thus, the employees' horizon was determined by the limited expected length of stay with the organization, which meant that they had extraordinarily strong incentives to raise as much credit as they could get a hold of – with strong motivation to bribe the managers of the banks – and leave the servicing of these debts to their successors getting employment following the current workers' retirement! With such a grave constructive error in the decisively impacting deep foundations of the system, no wonder that the Yugoslav economy stumbled from one financial crisis into another and never reached the state of tolerable financial health. Pejovich deserves much credit indeed for illuminating such a shocking flaw in the construction of the system, the flaw which escaped to many highly reputed analysts.

### **The backlog of regional adversities: The untoward consequences of collectivist heritage**

The principal proposition argued in this paper is about belated effects of the demised socialist institutional order: the fall in the rate of growth of the leading macroeconomic aggregates, having become strikingly visible with the institutional turnabout towards market and the associated regulating mechanisms, should not and cannot properly be ascribed to the newly introduced institutions and to the market as such. Rather they linger on as consequences of the old demised regime. Two adverse (sets of) effects could be

discerned here. The first one derives from unsustainability of the old system: the growth trends would be broken and the rhythm of development would surely plummet even without the widely advertised institutional shift. As a matter of fact, the spectacular institutional change is not the cause of the flattening of economic trends; the causal relation runs the other way around.

The second derives from the legacies of the old arrangements and policies. As it, somewhat unexpectedly, turned out, the adverse workings of the system did not stop with its historical demise, the system disappeared, but deep scars left after its demise continue to produce shocks and disturbances. Unexpectedly and maybe even shockingly to the non-professional public and surprisingly even to a significant number of (would-be) trained professionals, the location of causal factors is strikingly different from what it is widely held to be. As indicated above, the not so impressive rate of growth and level of other development indicators, registered since the new system came into being, is *not* the result of the functioning of that system but is safely ascribable to the old institutional order, the one which no more exists!

The belated adverse effects of the old system on the functioning and performance of the new system can also be traced down through peculiar traits of economic and other policies. In the further, deepened round of analysis these policy-generated adversities can again be attributed to the systemic mechanisms. Namely, the socialist government lavishly granted an unimaginably broad range of privileges to equally broad segments of population. Most of these privileges – various pensions, supplementary payments, financial support to the war veterans... – had heavy future financial implications. The rights had been granted during socialist times and the implied financial obligations had to be serviced for decades to come. The new system has inherited large junks of obligations thus generated during the old system. Quite naturally, that weighed heavily on the productive and growth potential of the new system. Such disconnect between those who reap political benefits by granting various rights and the subsequent layers of agents who have to service implications implied by these rights is a typical constructive failure of the political systems. It is well known that administration in the USA is to a

significant extent awarded by granting rights which impose heavy burden on the state and federal budgets in the long future periods. A textbook type of externality is evident here: one set of reaps benefits by emitting rights while a different set of players bears accompanying financial burden; some drink while others pay. One could argue that this destructive opportunism of bribing people with rights to be in the main services is ultimately determined systemically, more precisely by the undemocratic political system in which authorities attempted to compensate lacking democratic rights by corrupting people with such financial handouts.

The systems, like people, can suffer a tragic end due to unlucky series of deadly exogenous shocks. But in this case such an interpretation does not apply: the system faded out gradually, the decline having lasted for decades, and the final causes of destruction came from within. At the time of their demise there had been no wars or similar exogenous destructive shocks to which the ruin of the systems could be ascribed. Alternative and, in a way, competitive systems survived and some for a certain time even prospered while the socialist systems were undergoing the irreparable ruin.

As for the Yugoslav economic system, it shared defining traits with the family to whose *genus proximum* it belonged. First, it was unsustainable, the proof of which is its historic debacle. Second, just like all other socialist systems, it was not amenable to any meaningful reforms, to any serious modifications worth speaking of. This is the result of a truly peculiar, probably not yet sufficiently studied feature of these revolutionary or forcefully imposed creations (*NB* coercion is involved in both scenarios). The feature is the following: their defining characteristics are, to use a strange word, *extremistically* exclusive, they do not allow pragmatic combining with some other features suggested or urged by the requirements of practice. Socialism is in some sense fundamentalist not being tolerable to immixing of any ingredients which themselves are not elements of the same pure creed. Socialism cannot be, at least not in sufficient degree, pragmatically modified while still staying socialism.

This is the root cause of another trait shared with all other socialist systems: reforms in these systems were

frequent because the problems were frequent and more and more serious, but none of these reforms had been allowed to touch what had been considered as essential to socialism. The reforms have therefore all over been partial and superficial; they were generating disturbances and complications of futile adjustments without solving anything. With fundamental defining components remaining untouchable, the systems stayed in essence unchanged, which prevented them to gradually and pragmatically evolve into some more efficient and sustainable options. In other words, the unique way of their serious changing was a form of “revolutionary jump” and the jump could not have any other shape but the grand and spectacular departure from socialist sanctities. That would have been the only way of getting rid of huge costs and hosts of untoward legacies destined to obstruct development process for an uncertain but certainly long future.

As for Yugoslavia, early signs of the predicaments of the extensive growth appeared quite soon. As early as 1960 the steeply rising trend of the GSP growth, exhibiting a rate of growth of some 8%, broke unexpectedly with the rate of growth plunging to below 6%. Authorities mistook this break as an ephemeral, stochastic deviation and continued planning the rate of growth of industrial production at the earlier high levels [6, p. 26]. As the slackened development persisted, the authorities became alarmed and formed a group of experts headed by B. Horvat. They produced the famous *Yellow Book* [7] with detailed analysis of various – aggregate and sectoral – components of currently observed movements and with diagnoses of the underlying causes as they saw them.

Later developments offered ample opportunities for diagnosing the untoward tendencies in economic development. Thus they offered numerous possibilities for professional critics of economic policies and commentators of lacking institutional advancements. Horvat again was in the forefront of such critical analyses. As far as Serbia is taken as the standard of reference and as far as the level of expertise in and around federal authorities is concerned, Horvat was a man of extraordinary knowledge and heretofore unseen analytical potentialities. He was also a man of impeccable integrity and of incredible courage. A long series of his writings, with some of them

assembled in (1984) and some others re-edited in (2001), illuminated many aspects of the then led economic policies and clarified with astonishing originality connections between institutional changes and policy moves, on the one, and changes in development trends, on the other hand. Extraordinary emphasis was placed on the insufficient use of the then available expertise, with Horvat claiming that relying on science could overcome all, however serious and lasting problems.

Yet, again with the benefits of hindsight, one could persuasively conclude that he had been overestimating the availability of knowledge and underestimating the difficulties and constraints on the rapidity and scope of its expansion. It is in the nature of things that the limitations of knowledge can only be seen *ex post*, after additional knowledge had been accumulated and thus opened new vistas on the reaches of scientific endeavors. Much of what could have been useful for understanding the relationships between institutional peculiarities and macroeconomic movements had simply been lacking, and the amazing thing is that occasionally, with limited knowledge, useful policies can be conducted and considerable successes obtained.

In fact, many successful policies had been realized on the basis of concepts and insights which later proved to be outright mistaken. As Popper frequently emphasized, any scientific “truth” is temporary, until something different or even contrary is proven. Taking into account how many hypotheses and theories have been refuted, a good deal of various policies conducted in the long past, have had false and subsequently refuted theories as their scientific base. It looks that even tentative policies, based on subsequently falsified theories, can ultimately be useful from a reasonably conceived social point of view. That will be the case if they serve as means of mobilizing social actions which otherwise would not have happened and, along with that, as cognitive devices for coordinating decisions in the absence of other ways of securing coordination. After all, the geocentric astrophysical theory had for centuries served successfully as a fundamental scheme for long and complicated maritime voyages.

Deficient or lacking expertise is not the only potential determinant of policy failures. The interplay of interests, which are prevalingly particularistic, makes its own

contribution. It is well known that policy makers have their own preference functions rarely coinciding with, no matter how postulated, interests of the society at large; the “political arithmetic“ diverges widely from economic calculation aimed at hitting *social interests*, whatever the italicized word might mean [9, p. 431]. Exerting pressure, which Horvat did with admirable lucidity and extraordinary courage, pushes the government and its public service towards more productive activity and reduces the gap between what they find particularistically profitable and what is more desirable or less damaging for the rest of the society.

Coming back to the defining theme of this paper, the numerous critical writings of B. Horvat, pointing to the persistently weakening performance of development policies, represent a vivid illustration and even an analytical illumination of the falling effectiveness of strategies of extensive growth and as such are unusually valuable, irrespective of the fact that the time of his most intense engagement had not been ripe for fuller understanding of ultimate unsustainability of the then implemented growth. Such analyses shed sharp light on the structural roots of inefficiency of the collectivist systems and the accompanying legacies which impede development long after these systems had been discarded.

## Conclusion

The collectivist systems of socialist economies proved their fundamental irrationality by their general breakdowns. The false impression, and equally erroneous interpretation, is created that those breakdowns are allegedly generated by the new system, by the misplaced substitution of the inefficient for the efficient. The paper is devoted to an energetic refutation of this misconception. The old system leaves at least three categories of damages behind itself. First, the losses caused by the catastrophic demise of the socialist systems have pushed those economies backward and are equivalent to lost decades of normal development. Second, the impression is generated that the ruin be the consequence of the new market-based system, which drastically and almost irreparably reduced their credibility. The proposition about economic ruin having been created

by the new, reformed system would quite clearly run counter generally accepted and irreproachably proven scientific truths [16, pp. 57-70, 96-98]. Third, there are concrete, real and tangible legacies which hamper normal functioning of the new system and prevent it from realizing its full potential. In order to make it possible to carry through the radical reforms, misunderstandings and even dead straight absurdities about efficiency and growth potential of the two opposed systems will have to be done and over with; and, indeed, for good. There is no doubt that such a clarification of perception and prejudices is an unavoidable necessary condition for creation of the political terms of reference for a radical, irreversible reform.

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## ADAPTABILITY AND SECURITY: KEY ASPECTS OF THE QUALITY OF EMPLOYMENT IN THE CHANGING LABOUR MARKETS

Adaptibilnost i sigurnost – ključni aspekti kvaliteta zaposlenosti u uslovima promena na tržištu rada

### Abstract

The Principal component analysis (PCA) is used for assessment of the position of Serbia relative to 30 other European countries on the basis of selected dimensions of the quality of employment. The analysis is based mostly on the following key employment quality dimensions: lifelong learning, labour market transitions regarding level of security, flexibility of contracts and perception of workers regarding job security and employability. Results of PCA allow identification of three factors: adaptability, transitions to lower levels of security and temporality, while total explained variability with three detected factors is 80.96%. Cluster analysis shows that Serbia, together with Macedonia, belongs to the cluster group whose main characteristics are low adaptability of the work force accompanied by high flows to lower levels of security and relatively high subjective perception of insecurity of the present job.

**Keywords:** *quality of employment, lifelong learning, labour market flexibility, labour market security*

### Sažetak

Primenom analize glavnih komponentata određen je položaj Srbije u odnosu na 30 evropskih zemalja po osnovu izabranih pokazatelja kvaliteta zaposlenosti. Analiza je zasnovana na sledećim ključnim dimenzijama kvaliteta zaposlenosti: celoživotno učenje, tranzicije ka nižim nivoima sigurnosti na tržištu rada, fleksibilnost ugovora i subjektivna percepcija sigurnosti radnog mesta i zapošljivosti. Rezultati analize glavnih komponentata ukazuju na postojanje tri faktora koja objašnjavaju 80,96% ukupnog varijabiliteta: adaptibilnost, tranzicije ka nižim nivoima sigurnosti i privremenost. Klaster analiza pokazuje da se Srbija, zajedno sa Makedonijom, nalazi u grupi zemalja čije su glavne karakteristike niska adaptibilnost radne snage i visoki tokovi ka nižim nivoima sigurnosti na tržištu rada, zajedno sa relativno visokom subjektivnom percepcijom nesigurnosti radnog mesta.

**Ključne reči:** *kvalitet zaposlenosti, celoživotno učenje, fleksibilnost tržišta rada, sigurnost na tržištu rada*

## Introduction

Quality of employment is a multidimensional phenomenon which we analyse using selected indicators based on the Laeken indicators of job quality and additional indicators constructed according to the UN recommendations. Measuring quality of jobs is usually addressed through three main approaches: macro level (aggregate), meso level (enterprise) and micro level (individual) [6], [11]. Definition and components of the quality of employment depend on the main unit of analysis, i.e. whether it is assessed from the perspective of the society, the corporation or the individual [23]. The main indicators of the quality of employment according to the level of the analysis are presented in Table 1. It is important to stress that there are strong interrelations between these three groups and that, in some cases, the allocation of the elements to the three levels will to some extent depend on the institutional and cultural context [22, p. 14].

Laeken indicators of job quality encompass numerous aspects of this phenomenon (Figure 1).

Over the last decades, quality of employment has become a highly important element within the EU

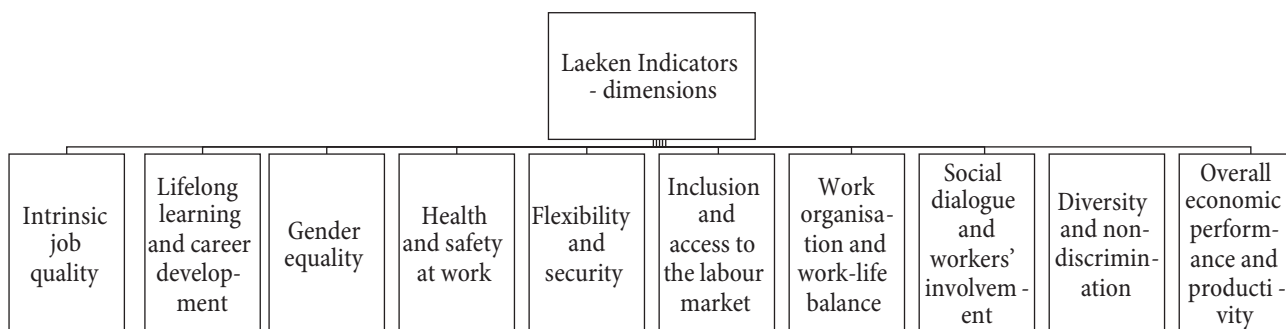
employment policy agenda. In the late 1990s and early 2000s the emphasis has shifted from purely quantitative dimension to the combination of quantitative and qualitative ones, i.e. to employment policies that could enable “more and better jobs” [16]. This approach is closely interrelated with flexicurity – another important concept which also dates from the end of the 1990s. Among the most important common issues between these two concepts in the modern labour markets are flexibility/security aspects and issues related to lifelong learning and career development. As labour market rigidity has often been blamed for poor labour market performance, since the late 1990s many European countries have undertaken reforms towards labour market flexibilisation, making employment protection rules less strict. In some cases, these reforms were focused on the use of temporary and other non-standard forms of employment, while provisions concerning permanent employment contracts did not change much. This has often led to increased labour market segmentation, with rising number of workers with temporary contracts. Instead of being a stepping stone towards a more secure job, these jobs often turned into a kind of a trap, where workers stayed in relatively

**Table 1: Three groups of employment quality indicators**

Level of analysis	Indicators
Individual level	Conditions and ethics of employment, monetary and non-pecuniary benefits, working time arrangements and work-life balance, employment security and social protection, skills development and training, as well as work motivation and employment-related relationships of an individual
Sector or enterprise level	Specific working time and pay arrangements, tasks to be carried out, autonomy of the worker, relationships with superiors and colleagues, work motivation
Macro level	Minimum working conditions, minimum wages or provisions regarding the prevention of accidents at work

Source: Based on [22].

**Figure 1: Laeken indicators of job quality – dimensions**



Source: Based on [8].



low quality of employment for a long time and with high perception of job insecurity and precariousness [4]. Issues of employment quality aspects related to the different types of employment contracts have become even more relevant in the era of rapid technological change, which has substantial influence on the modern labour markets giving rise to non-standard forms of employment.

Another aspect of strong interrelation between the concepts of flexicurity and the quality of employment concerns continuous skills improvement through training and lifelong learning. The main idea behind this approach is enhancement of adaptability of workers in order to meet the changing labour market needs. This is highly relevant in the context of technological changes and the 4<sup>th</sup> industrial revolution. One of the main issues in this regard is substitution of jobs by technology (i.e. automation, digitalisation, artificial intelligence), where occupations based on more simple tasks and generally –workers with lower educational levels are more exposed to these risks. Competences needed for modern labour markets shift extensively towards more cognitive, problem-solving, creative and interpersonal skills. Aspects of the quality of employment that concern lifelong learning and career development are expected to gain even more importance in the short and middle run, taking into account exposure of modern economies to constant technological changes.

The rest of the analysis is based mostly on the following key dimensions of the quality of employment: intrinsic job quality, lifelong learning and flexibility/security aspect. The paper reads as follows. Second section presents methodological approach and overview of the data used in the analysis. Third section deals with descriptive presentation of position of Serbia regarding selected aspects of employment quality in comparison with the EU-28. Detailed results of PCA and cluster analysis are presented in Section 4. The paper ends with concluding remarks.

## Methodology and data

The Principal component analysis (PCA) is used for assessment of the position of Serbia relative to other countries on the basis of selected dimensions of the quality of employment. This method sums information from a larger group of

variables into a limited group of factors [1, p. 568]. Original variables are transformed into new uncorrelated variables named factors. While transforming, it is crucial to keep as much of the original variability as possible. The factors cannot be measured directly, so they are revealed on the basis of the initial variables [1, p. 572]. Interpretation of the factors is based on their correlations with original variables. One of the main strengths of this method is that it can summarise a set of individual indicators while preserving the maximum possible proportion of the total variation in the original data set. It is also important to notice that this method is convenient for cross-country comparisons, since the largest factor loadings are assigned to the individual indicators that have the largest variation across countries, which is a desirable property for cross-country comparisons, as individual indicators that are similar across countries are of little interest and cannot explain differences in performance [17].

Similar approach has been used by Davoine et al. [7], on the basis of the set of Laeken indicators and some complementary variables, such as wage level, work intensity and characteristics of training. The results based on the PCA and cluster analysis document the opposition between northern countries and most of the new member states in terms of working conditions and socio-economic security. Erhel and Guergoat-Larivière also use the PCA in order to obtain a comparative view of job quality regimes in Europe, taking into account their different dimensions [11]. This method revealed some convergence among the New Member States (NMS) that did not appear clearly in the synthetic index approach. The main characteristics of the NMS cluster were: bad working conditions (measured by both objective and subjective variables) and low wage levels, accompanied by high gender segregation as well as low levels of training. These analyses encompassed only EU countries, so there are no results of the relative position of Serbia concerning the main dimensions of the job quality. Savić (2006) uses the PCA approach in order to determine the position of Serbia and other European countries, although a focus of this study has been somewhat different, and it was concentrated more on the sectoral employment structure and vulnerable groups in the labour market (i.e. women and youth) [19]. Variables included in

the model were: percentage of employment in agriculture, percentage of employment in industry, percentage of employment in services, percentage of women in the labour force, unemployment rate and youth unemployment rate. Results of this study [19] showed that, in the group of selected European countries, Serbia and Macedonia had similar position regarding the observed variables.

Our analysis includes 31 European countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, FYROM, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovak Republic, Slovenia, Spain, Sweden and the UK. Selection of the indicators for the analysis is based on several key elements of the quality of employment: lifelong learning (i.e. continuous improvement of knowledge and skills in order to enhance adaptability to changing labour market demands); labour market transitions regarding level of security; flexibility of contracts (i.e. share of the employed with temporary contracts) and perception of workers regarding job security and employability. At the same time, choice of the indicators is limited by availability of the relevant, comparable and updated data for the selected countries. Another limiting factor is a ratio of the number of observed countries and the number of original variables. Although there is no single interpretation of what ratio is required for the principal component analysis<sup>1</sup>, our starting point is the rule that sets less strict limitations and states that ratio of 3:1 or higher ensures stable solutions in the PCA [18], [10]. In other words, the ratio of the number of countries and the number of observed original variables must be 3:1 or higher. Taking into account all methodological limitations, the following indicators are selected:

1. Lifelong learning – participation rate in education and training (last 4 weeks), age 25 – 64, (*LLL*), 2015<sup>2</sup>;

<sup>1</sup> For more details, see: [15, p. 24].

<sup>2</sup> Includes population aged 25-64 that has been attending training, courses, etc., in four weeks preceding the survey. Serbia: Devinfo, [http://devinfo.stat.gov.rs/republika\\_srbija/libraries.aspx/dataview.aspx](http://devinfo.stat.gov.rs/republika_srbija/libraries.aspx/dataview.aspx), other countries: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=trng\\_lfs\\_01&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=trng_lfs_01&lang=en).

2. Percentage of employed individuals who have above basic level of problem-solving skills (age 25 – 64), (*abovebasic\_problem\_solving\_skills*), 2015<sup>3</sup>;
3. Temporary employees as percentage of the total number of employees (15 – 64), (*temp\_share*), 2016<sup>4</sup>;
4. Percentage of the employed persons who agreed with the statement “I might lose my job in the next six months” (*losejob6m*), European Working Conditions Survey, 2015;
5. Percentage of the employed persons who agreed with the statement “If I were to lose or quit my current job, it would be easy for me to find a job of similar salary” (*easytofindjob*), European Working Conditions Survey, 2015;
6. Labour transitions by employment status – from employment to unemployment or inactivity, (*transitions\_empl\_to\_unemplor\_inactive*), 2015<sup>5</sup>;
7. Labour transitions by type of contract - transition to less employment security than last year – employees with a permanent job (*transitions\_lower\_perm*), 2015<sup>6</sup>;
8. Labour transitions by type of contract - transition to less employment security than last year – employees with a temporary job (*transitions\_lower\_temp*), 2015<sup>7</sup>.

## Overview of the selected quality of employment indicators: Serbia vs. EU-28

### Involvement in lifelong learning and problem-solving skills

Participation in lifelong learning programmes in Serbia is considerably lower in comparison to most other European countries (Figure 2).

<sup>3</sup> Data: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc\\_sk\\_dskl\\_i&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_dskl_i&lang=en)  
[http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc\\_sk\\_dskl\\_i&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_sk_dskl_i&lang=en).

<sup>4</sup> Data: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa\\_etpgan&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_etpgan&lang=en).

<sup>5</sup> Data: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc\\_lvh130&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvh130&lang=en).

<sup>6</sup> Data: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc\\_lvh133&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvh133&lang=en).

<sup>7</sup> Data: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc\\_lvh133&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvh133&lang=en).

Absence of continual improvement of skills and knowledge after completion of formal education can result in uncompetitive level of skills needed to face challenges initiated by technological improvement and digitalisation. In digital competence framework, problem-solving skills are defined as ability to identify digital needs and resources, make informed decisions, solve conceptual problems through digital means, use technologies creatively, solve technical problems or update one's own and others' competences, including the use of online learning resources. In this aspect, competences and skills of the employed in Serbia are significantly below the EU-28 (Figure 3).

### Temporary contracts

One of significant dimensions of security and quality of employment relates to permanency of job, i.e. permanent contract vs. some of the temporary forms of employment (fixed-term contract, seasonal or casual job). In Serbia, most of the employees (76.4%) have permanent contracts, while

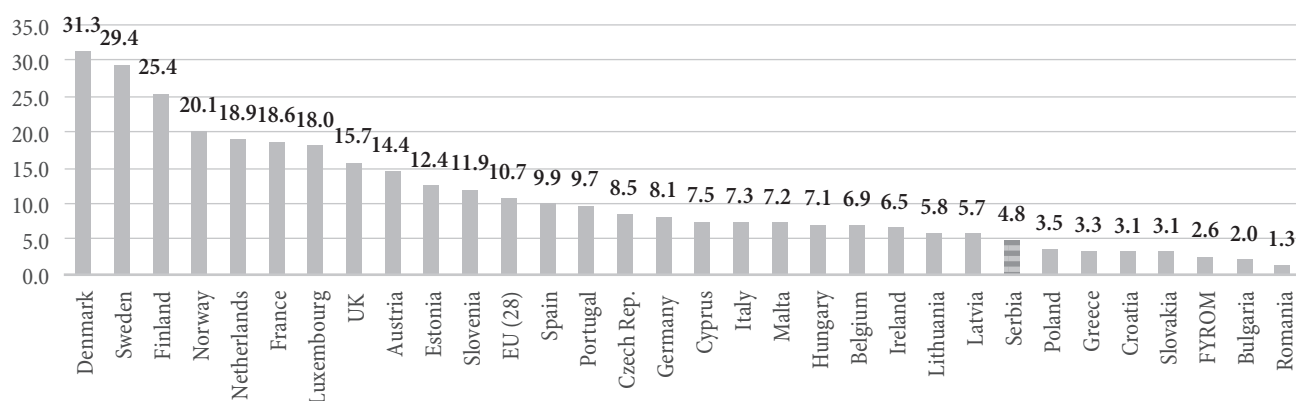
remaining 23.6% are in temporary forms of employment. Although it may seem that the share of employees with permanent contracts is high, the comparison with other European countries shows that it is actually considerably lower than the EU-28 (Figure 4).

Within a population aged 15+ in Serbia, more than 90% (i.e. 90.4%) of the employees in temporary forms of employment are engaged in these forms of employment because they cannot find a permanent job<sup>8</sup>. (This (or similar) situation is found only in few more European countries (Figure 5)).

According to the LFS data, recent labour market recovery was followed by a decline in quality of employment due to the expansion of non-standard employment, which adversely affected the quality of employment, in terms of job security, wages, access to retirement benefits, holiday and sick pay and on-job trainings [14, p. 344].

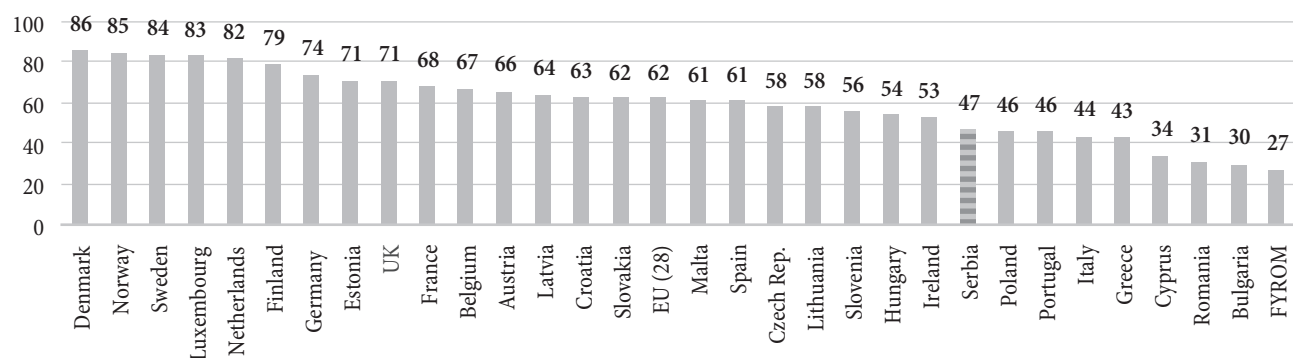
<sup>8</sup> Possible reasons are: one cannot find permanent job; one does not want a permanent job; contract is valid for probation period; employment contract is valid for training period only.

Figure 2: Participation rate in education and training in the last 4 weeks (25–64), 2015 (LFS)



Source: LFS (Devinfo database) and Eurostat.

Figure 3: Employed individuals aged 25 to 64 who have above basic problem-solving skills, 2015, %



Source: Eurostat.

LFS data also give insight into how employees materialize basic employment-based rights: entitlement to health insurance, entitlement to pension insurance, right to annual paid holiday and right to paid sick leave<sup>9</sup>. Data for 2016 show that roughly 9% of employees do not exercise right to pension and/or health insurance, while 13% do not exercise rights to paid holiday and/or paid sick leave.

For all employment-based rights covered by the LFS data, the number of employees who are not entitled to a specific work-based right is larger than the number of informal employees (not including self-employed and unpaid family workers), which means that these problems

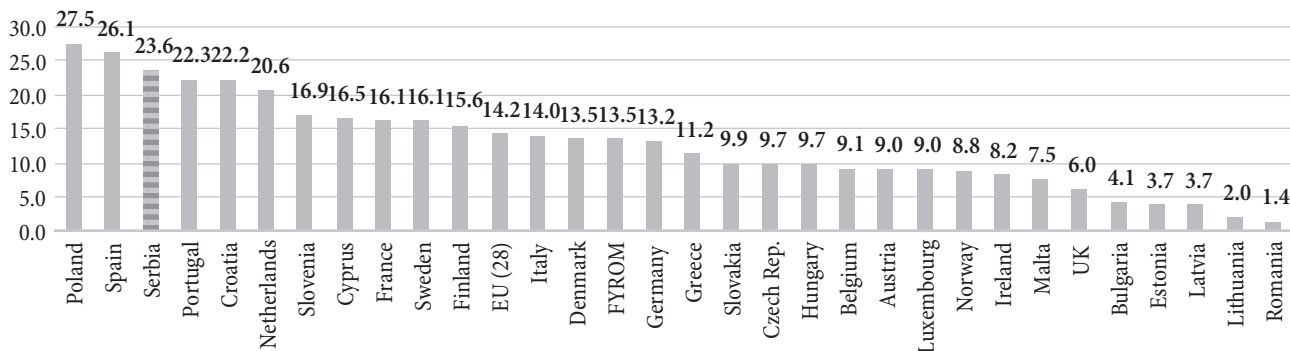
are common in formal employment, too. Part of the problem relates to a type of contract and/or type of employment, since persons who work under contracts for temporary or occasional jobs and other contracts related to work performed outside employment relationship do not have all of these rights according to the labour legislation of the Republic of Serbia.

### Perceived job security and changes in employment security

One of important indicators showing perceived job security is the share of the employed who consider that they could lose their job within the next 6 months [22, p. 39]. According to the European Working Conditions Survey (EWCS) data, almost one quarter (23%) of the employed in Serbia agreed with the statement “I might lose my job in the next 6 months”. Perceived job security defined in

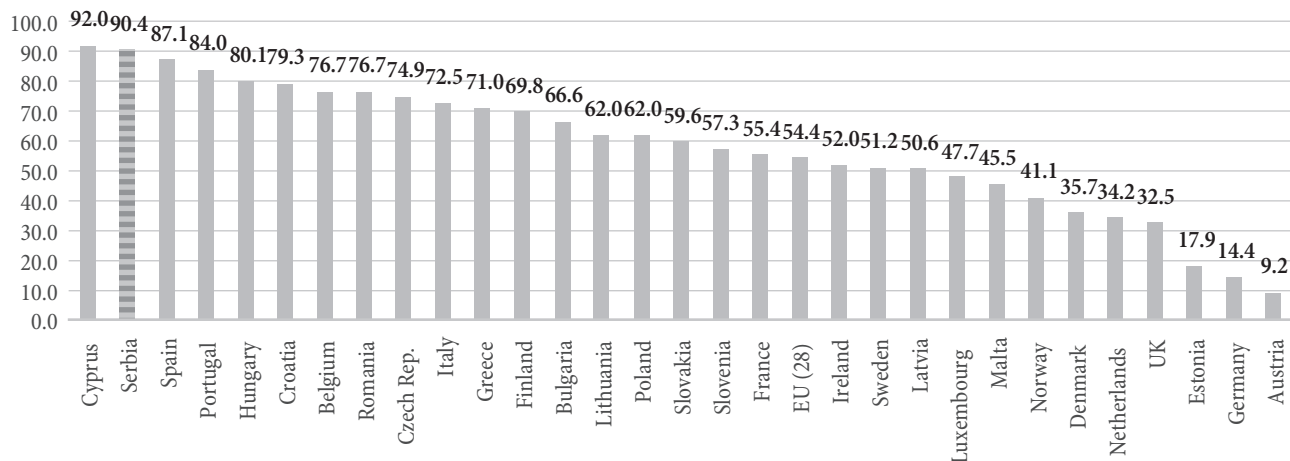
9 According to the LFS methodology, paid sick leave relates to the sick leave with the compensation equal to 65% of wage. In case the compensation is paid in amount less than 65% of wage, this is not considered as a paid sick leave. The same applies to a leave granted due to pregnancy and maternity/paternity leave. Paid annual holiday includes compensation equal to 100% of wage. Lower compensation is not considered as a paid annual holiday.

Figure 4: Temporary employees as percentage of the total number of employees (15–64), 2016



Source: LFS, Eurostat.

Figure 5: Percentage of employees with a temporary job (15+) who specified that the main reason for such engagement is inability to find a permanent job, 2016



Source: LFS, Eurostat.

this way is lower in Serbia than in the EU-28 in all of the observed categories (in other words, shares of persons who think they might lose their job within the next 6 months are higher for Serbia than for the EU-28, Figure 7). This is particularly evident in the group ‘employees without permanent job’, where almost half of the employed consider that they could lose their job within the next half year period. These data indicate very common sense of insecurity in the labour market.

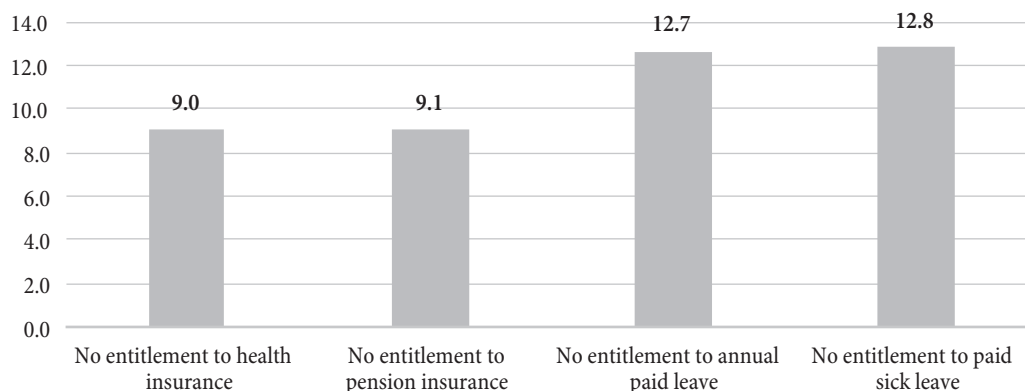
Speaking of another dimension of the subjective perceived labour market (in)security reflected by the

employed person’s attitude on probability of finding another job of similar salary<sup>10</sup>, data for Serbia show that only 28% of the employed agreed with the statement “If I were to lose or quit my current job, it would be easy for me to find a job of similar salary” (Figure 8).

Data on perceived (subjective) employment insecurity based on the EWCS are supported by the objective data on labour market flows towards lower levels of security.

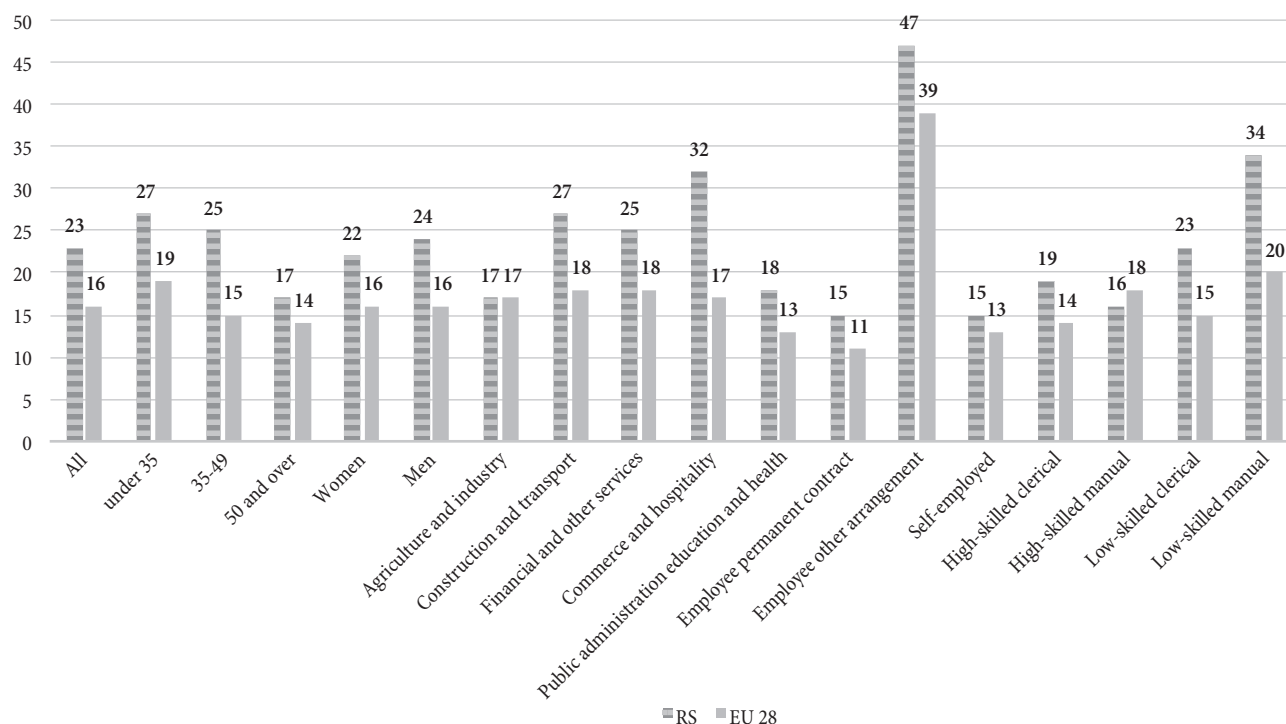
<sup>10</sup> Percentage of the employed persons who agreed with the statement “If I were to lose or quit my current job, it would be easy for me to find a job of similar salary”, European Working Conditions Survey, 2015.

**Figure 6: Employment rights in Serbia (employees aged 15+), 2016**  
employees 15+



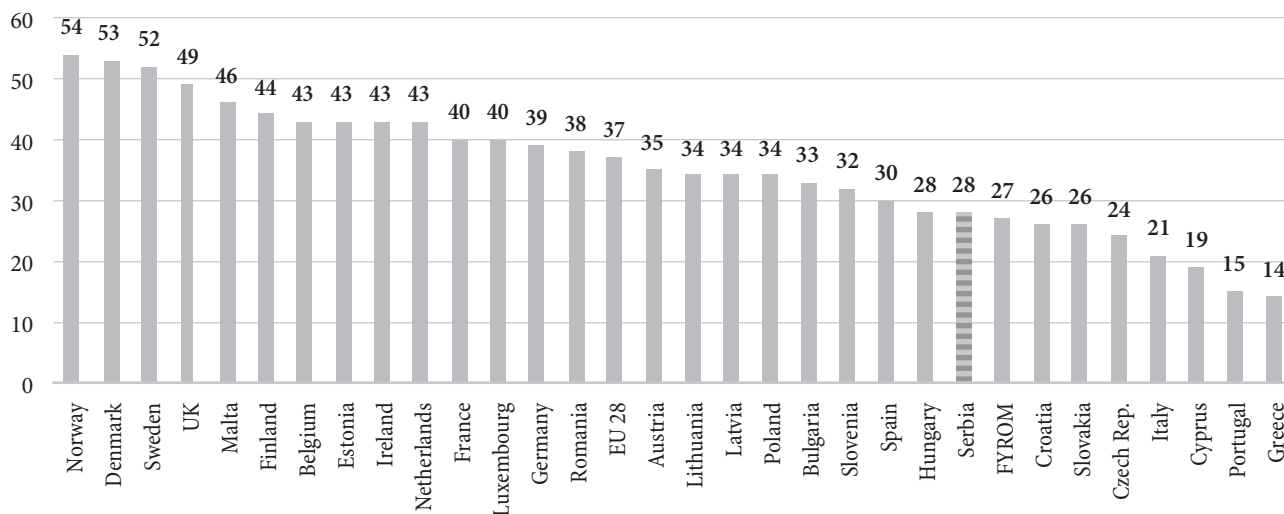
Source: LFS, 2016.

**Figure 7: Share of the employed who think they could lose their job in the next 6 months, Serbia and EU-28, 2015**



Source: EWCS.

**Figure 8: Percentage of the employed persons who agreed with the statement “If I were to lose or quit my current job, it would be easy for me to find a job of similar salary” in selected European countries, 2015**



Source: EWCS.

If we take a look at transitions from one labour market status to another one with lower employment security, we can see that such transitions are more frequent in Serbia in comparison to the EU-28 (Table 2). Other usual labour market security indicators, such as employment protection legislation index, expenditures for active labour market policies, coverage of unemployment benefit system, etc., also point to relatively low levels of labour market security in Serbia. Among other factors, last changes in the Labour Law have probably exerted, beside the direct effects on the average wage, an indirect negative impact on private consumption as a consequence of reduction in job security, or at least because of the widespread perception of increased job insecurity [2, p. 218].

**Table 2: Labour transitions to less employment security than last year (2015)**

	Serbia	EU (28)
Employees with a permanent job	14.4%	7.9%
Employees with a temporary job	32%	15%
Employed persons except employees	34.1%	5.2%
Employed to unemployment or inactivity	17.3%	6.3%

Source: Eurostat

## Results and discussion

The Bartlett’s test of sphericity is used to test the null hypothesis that the individual indicators in a correlation matrix are uncorrelated, i.e. that the correlation matrix is an identity matrix. The Kaiser–Meyer–Olkin measure of

sampling adequacy compares the correlations and the partial correlations between variables. If the partial correlations are relatively high compared to the correlations, the KMO measure is small, and a low-dimensional representation of the data is not possible [20]. KMO value higher than 0.5 and p-value of the Bartlett’s test suggest that the use of the PCA is justified (Table 3).

**Table 3: KMO and Bartlett’s test**

KMO and Bartlett’s test		
Kaiser-Meyer-Olkin measure of sampling adequacy		.597
Bartlett’s test of sphericity	Approx. Chi-Square	128.731
	df	28
	Sig.	.000

Source: Authors’ calculation.

The most often used procedures to determine the number of components are based on inspection of the correlation matrix eigenvalues: the Cattell’s scree test [5] and the Kaiser rule [13]. According to the scree test (Figure 9), only those components above the point of inflection on a plot of eigenvalues ordered by diminishing size should be retained. Kaiser rule recommends that only eigenvalues at least equal to one are retained (Table 4). Both the scree plot test and the Kaiser rule point to conclusion that three factors should be retained in the analysis (Table 4 and Figure 9).

After choosing the number of factors to keep, it is a standard practice to perform rotation so as to enhance the interpretability of the results and to obtain a clear pattern

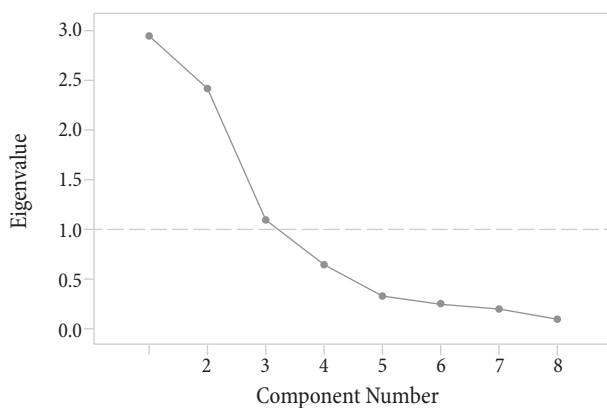
Table 4: Total variance explained

Total variance explained							
Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2.958	36.974	36.974	2.958	36.974	36.974	2.427
2	2.421	30.265	67.239	2.421	30.265	67.239	2.599
3	1.098	13.719	80.958	1.098	13.719	80.958	2.086
4	.654	8.176	89.135				
5	.331	4.139	93.274				
6	.250	3.125	96.399				
7	.194	2.425	98.824				
8	.094	1.176	100.000				

Extraction method: Principal component analysis  
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Source: Authors' calculation.

Figure 9: Scree plot



Source: Authors' calculation.

of loadings [9]. Rotated factor loadings after Varimax rotation are shown in Table 5<sup>11</sup>.

Results allow identification of three factors:

- 1) adaptability relates to high level of problem-solving digital skills, high participation in lifelong learning programs and perception that the probability for finding a new job in the next 6 months is high. This factor explains 37% of the total variability;
- 2) transitions to lower levels of security which encompasses all three relevant variables (labour transitions by employment status – from employment to unemployment or inactivity; transitions to less employment security than last year for employees with a permanent job; and transitions to less employment security than last

year for employees with a temporary job) explains further 30.3% of variability;

- 3) temporality, the third factor, is related to the subjective perception of the person that there is high probability of losing a job within the next 6 months and with the share of employees with temporary contracts. This factor explains 13.7% of total variability.

Total explained variability with three detected factors is 80.96%<sup>12</sup>. In order to give a simpler graphical overview of the position of each country, we can show the positions of the countries in focus in two-dimensional space, using the first two factors which explain most of the variability (Figure 10).

In the next step we perform cluster analysis based on inputs from PCA. Hierarchical cluster analysis was used to determine optimal number of clusters, using Ward's method and squared Euclidean distance. Based on previously defined number of clusters, K-means clustering was performed. The results are shown in Table 6 and Figure 11.

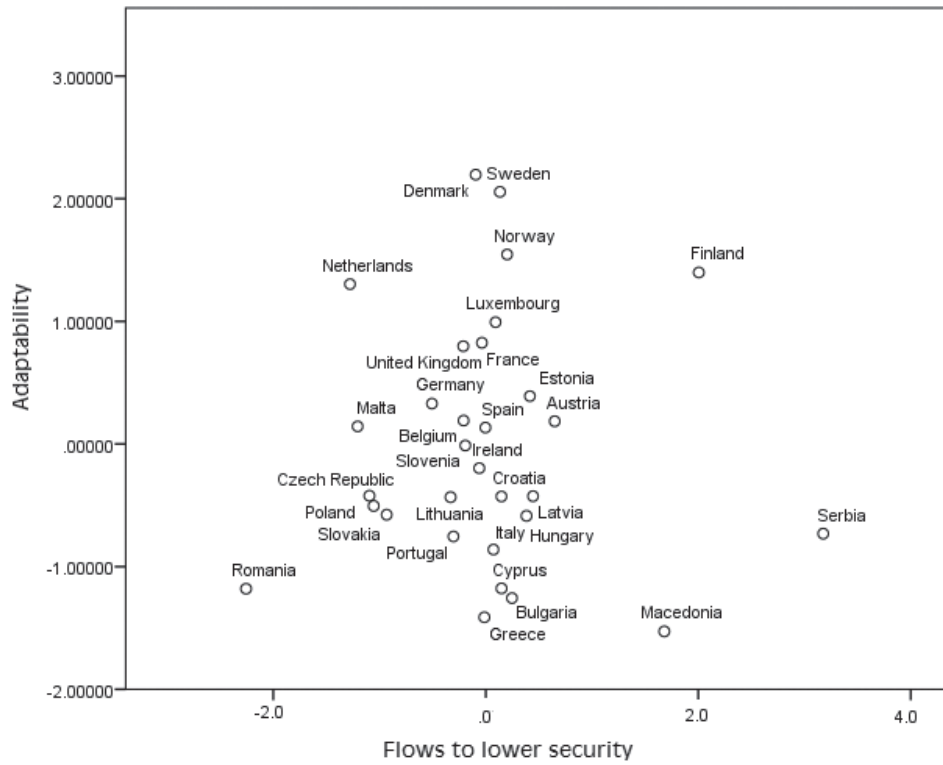
11 Oblimin rotation method gives very similar results and interpretation of the factors does not change.

12 One of the criteria used to determine how many factors to retain is 'total variance explained' criterion, which indicates how much of the variability in the data has been modelled by the extracted factors. The literature varies on how much variance should be explained before the number of factors is sufficient. Satisfying level of variability depends on the type of the problem. It is often suggested that 70% of the variance should be accounted for, while in some papers even 50% of the explained variability is considered acceptable [3]. Ultimately, the decision of how many factors to retain should be made based on comprehensibility and interpretability in the context of the research [21].

Serbia, together with Macedonia, belongs to the 4<sup>th</sup> cluster, whose main characteristics are low adaptability of the employed (as defined in the previous sections),

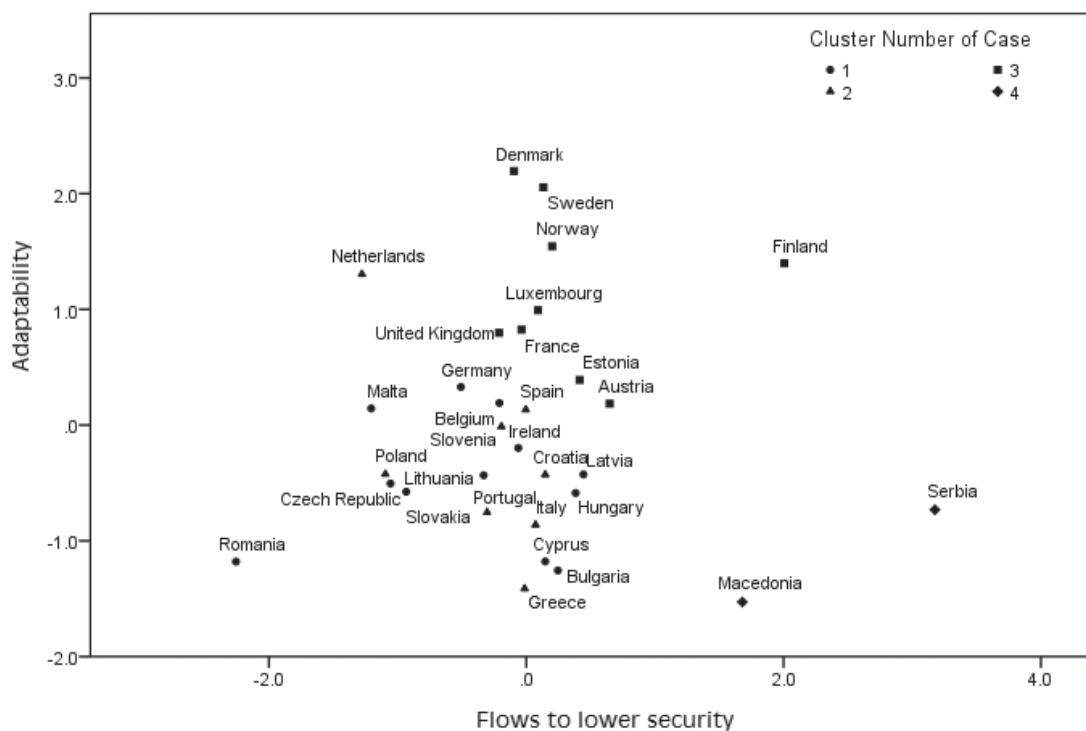
accompanied by high flows to lower level of security, and relatively high subjective perception of insecurity of the present job.

Figure 10: Country positions based on the first two factors



Source: Authors' calculation.

Figure 11: Country positions based on the first two factors combined with the results of the cluster analysis



Source: Authors' calculation.



**Table 6: Country groups (results of the cluster analysis)**

Cluster	Countries	Main characteristics of the cluster
1	Lithuania, Latvia, Malta, Ireland, Belgium, Slovakia, Germany, Romania, Bulgaria, Cyprus, Czech Republic, Hungary	Lower perception of insecurity in the present job and/or low temporality of employment
2	Netherlands, Greece, Italy, Slovenia, Croatia, Portugal, Spain, Poland	High perception of insecurity in the present job
3	Norway, Luxembourg, Denmark, Finland, Sweden, Estonia, United Kingdom, Austria, France	High adaptability
4	Macedonia, Serbia	High flows to insecurity, low adaptability

Source: Authors' calculation.

Low level of the lifelong learning culture and adaptability of the workforce can cause further structural problems in the Serbian labour market in the future, especially in the context of rapid technological change. The impact of contemporary technological changes on the labour market of a particular country or region depends on a large number of factors: economic structure, qualifications and occupational structure of the labour force, ability of the workforce to make the necessary adjustments to the set of needed knowledge and skills, as well as how new technologies have already been introduced in a particular country or region. On the one hand, new jobs are being created and the existing ones are disappearing under the influence of automation and robotization. According to the World Bank, estimated share of employment that is susceptible to automation in Serbia is 65.8%. Taking into account the slower speed of introduction of new technologies, this percentage is somewhat lower, amounting to about 47.3% [24, p. 129]. On the other hand, due to application of new technologies, even in the cases when jobs are not susceptible to technology substitution, the nature and organization of work change. Both aspects of change lead to significant changes related to the knowledge and skills needed in the labour market, which points out the necessity of constant improvement of the workforce's competences. As the development of digital technology accelerates obsolescence of skills, the inclusion in the lifelong learning system and enhancement of the workforce adaptability becomes necessary in order to provide an adequate response to this type of challenge.

The other important aspect of quality of employment in Serbia are high flows to lower levels of security, which is accompanied by high personal perception of insecurity. Along with high levels of informal employment and vulnerable employment, the share of employees with

temporary contracts is high in comparison with other European countries, with more than 90% of persons engaged in temporary forms of employment stating as the main reason the fact that they cannot find a permanent job. In contrast to the situation in Serbia, we can cite an example of Austria, where the share of temporary employees in the total number of employees is significantly lower (9%), with about a third of them stating as the main reason for temporary employment the fact that one does not want a permanent job, while as many as 46% are in temporary employment because they are in the process of education or training. In those cases, the positive sides of the flexible forms of employment are completely emphasized. In cases where the temporary form of employment is the only (and necessary) choice, there is often a danger that the employee remains trapped in the lower quality jobs which can reinforce the duality in the labour market.

## Conclusion

The analysis is based on 31 European countries and eight original variables covering key dimensions of the quality of employment: intrinsic job quality, lifelong learning and flexibility/security. The results showed that Serbia has unfavourable position concerning selected quality of employment aspects in comparison to other selected countries. Principal Component Analysis allowed identification of three factors: adaptability, transitions to lower levels of security and temporality, while cluster analysis showed that Serbia, together with Macedonia, belongs to the cluster group whose main characteristics are low adaptability of the work force accompanied by high flows to lower level of security and relatively high subjective perception of insecurity of the present job.

As the development of digital technology accelerates obsolescence of skills, enhancement of the workforce adaptability becomes necessary in order to provide an adequate response to this type of challenge. However, participation in lifelong learning programmes in Serbia is considerably lower in comparison to most other European countries. This is accompanied by lower level of some of the key aspects in digital competencies framework. Absence of continual improvement of skills and knowledge after completion of formal education can result in uncompetitive level of skills needed to face challenges initiated by technological improvement and digitalisation. Data on employed persons' attitudes on probability of finding another job of similar salary show that in Serbia only 28% of the employed agreed with the statement "If I were to lose or quit my current job, it would be easy for me to find a job of similar salary", in contrast to 37% for the EU-28, which points to possible problems in both security and adaptability aspects.

One of the more significant dimensions of security and quality of employment relates to permanency of job. In Serbia, almost one quarter of employees is in temporary forms of employment (fixed-term contract, seasonal or casual jobs). Although it may seem that the share of employees with permanent contracts is high, comparison with other European countries shows that it is actually considerably lower than in the EU. Within a population aged 15+ in Serbia, more than 90% of the employees in temporary forms of employment are engaged in these forms of employment because they cannot find a permanent job. This (or similar) situation is found only in few other European countries. One of the important indicators showing perceived job security is the share of the employed who consider that they could lose their job within the next six months. According to the European Working Conditions Survey data, almost one quarter of the employed in Serbia consider that they might lose their job in the following half year period, which indicates very common sense of insecurity in the labour market. Data on perceived (subjective) employment insecurity based on the EWCS are supported by the objective data on labour market flows towards lower levels of security. If we take a look at transitions from one labour market

status to another one with lower employment security, we can see that such transitions are more frequent in Serbia in comparison to the EU-28.

All of these aspects point to the comparatively low quality of employment in selected dimensions. Low levels of the lifelong learning culture and adaptability of the workforce can cause further structural problems in the Serbian labour market in the future, while high flows to lower security and high temporality can impose a danger that the employee remains trapped in the lower quality jobs.

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# CHARACTERISTICS OF THE SOFTWARE INDUSTRY IN SERBIA\* \*\*

## Karakteristike IT softverske industrije u Srbiji

### Abstract

The objective of this paper is to identify the main characteristics of the software industry in Serbia, its strengths and challenges, as well as trends that are likely to influence this sector in the future. The study presents results of a survey of the software sector in Serbia conducted by the Institute Mihajlo Pupin from November 2017 to January 2018. Despite the huge regional disparities in the distribution of turnover between regions in Serbia, the software industry has been the most dynamic and fastest growing sector in Serbia in the last decade. There are many challenges regarding legal and financial framework conditions, taxation, legislation and online payment that need to be addressed by the Government of Serbia in order to create a friendly environment for this sector. The potential of the software industry is recognized and substantial support (both political and financial) from the Government is expected in the upcoming period. Respondents forecast further growth of the software industry and high demand for highly qualified staff.

**Keywords:** *software industry, SWOT analysis, future trends, Serbia*

### Sažetak

Cilj rada je identifikacija glavnih karakteristika IT softverske industrije u Srbiji, njenih prednosti, izazova i trendova koji će u budućnosti uticati na ovaj sektor. U radu su prikazani rezultati istraživanja o IT sektoru koje je Institut Mihajlo Pupin sproveo u periodu od novembra 2017. do januara 2018. godine. Iako postoje velike regionalne razlike u ukupnom prometu između regiona, IT softverska industrija je u poslednjih deset godina najdinamičniji i sektor koji se najbrže razvija u Srbiji. Postoje brojni izazovi u domenu poboljšanja pravnih i finansijskih okvira, poreza, zakona i on-line plaćanja koje Vlada Srbije treba da reši kako bi se stvorilo podsticajno okruženje za ovaj sektor. Potencijal ovog sektora je prepoznat i u narednom periodu se očekuje značajna podrška (politička i finansijska) od Vlade Srbije. Predviđanja ispitanika za naredni period jesu rastući trend sektora softverske industrije i velika potražnja za visoko kvalifikovanim zaposlenima.

**Cljučne reči:** *IT softverska industrija, SWOT analiza, budući trendovi, Srbija*

\* The opinions expressed and arguments employed in the present article do not reflect the official views of the European Commission.

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## Introduction

Information and communication technology (ICT) is seen as providing essential infrastructures and tools for knowledge creation, sharing and diffusion, increasing the innovation capacity of other sectors and contributing to overall productivity growth [4]. This importance of ICT is reflected in R&D budgets worldwide, where it typically makes up for approximately 25% of the total R&D investment [3]. More generally, there is a growing perception that ICT strongly determines the way economies and societies keep up with, and possibly benefit from, the globalization process [2]. Research has shown that benefits from investments in ICT do not differ between developing, emerging and developed countries [7].

In recent years, the ICT sector in Serbia has become the most attractive sector of the economy. Rapid development and promotion of IT services, especially in the field of Internet and mobile technologies, application development and outsourcing, is evident. In the global market, IT companies from Serbia are mostly engaged in outsourcing, software testing and website design, as well as in the embedded systems. The largest markets for Serbian outsourcing industry are Germany, USA, the United Kingdom and the Netherlands. Serbian IT companies that are successful in outsourcing activities have recently developed their own products with high export potential. As the global IT market continues to evolve, the needs for outsourcing jobs are rising. Serbia is geographically well-positioned to provide financially viable and reliable alternatives to the already developed markets. Some of the key advantages of Serbia with regard to cooperation with foreign companies are an exceptional source of well-educated staff, attractive labor costs, excellent working skills, good communication and foreign language skills. This has not always been the case, given that Serbia has faced a massive brain drain of ICT graduates and professionals for years [6]. Considering today's growing demand for ICT products and services, which is a general trend not only in Serbia but throughout Europe [1], Serbian educational institutions face the challenge of attracting an even higher number of students and offering more experts to the market.

ICT production takes place in many industries, either as a principal or secondary output. It is therefore not possible to use industry statistics to obtain a complete measure of ICT production. Nevertheless, the identification of industries whose principal products are ICT goods or services was thought to be an essential component for a statistical framework to measure developments in the information society [9]. The OECD defines the ICT sector as a combination of manufacturing and service industries, whose products electronically capture, transmit, or display data and information [8]. According to this definition, the ICT sector is divided into two sub-sectors: telecommunications and information technologies (IT). Furthermore, the IT sub-sector comprises three segments: hardware, software and services. In this research, we focus on the software sector.

The paper presents some of the first results of an ICT case study in Serbia carried out by the Institute Mihajlo Pupin with the support of the European Commission's Joint Research Centre (JRC) in the period from November 2017 to January 2018. This case study evaluates the current state of the software industry in Serbia for the purpose of developing a new Research and Innovation Strategy for Smart Specialization (RIS3) in Serbia. The paper is organized in the following way. First, we provide an overview of the software market in Serbia. Then we present the research design and the main results, which are divided into three segments: profile of IT software companies in Serbia; SWOT analysis; and future trends in IT software industry in Serbia. We conclude with an outlook on what the implications of our findings are for the new innovation strategy in Serbia.

## Market analysis of the software industry in Serbia

We take into account the following groups of NACE Rev. 2 classification of economic activities as part of the software industry: 58.2 Software publishing; 62.0 Computer programming, consultancy and related activities; 63.1 Data processing, hosting and related activities; web portals, and 63.9 Other information service activities. The software sector will be analyzed on the basis of its turnover, employment and salaries, export and import.

The total turnover of the software sector in Serbia in the 2010-2015 period exhibited an upward trend. In the 6-year period, the total turnover has more than doubled, i.e. it increased from RSD 34.6 billion in 2010 to RSD 75.5 billion in 2015. The Serbian software sector was employing 19,152 workers in 2015, which is a modest number in comparison to 2.57 million of employees in the country. According to data from the Labor Force Survey (LFS), the number of employees in the software sector declined in 2011 and 2012, but in 2013 it began to rise. In general, it almost doubled in the 2010-2015 period (Table 1). These trends confirm the emerging nature of the software sector in Serbia.

The majority of the activities in this sector was related to computer programming, consultancy and related activities. The share of this activity was approximately 90% throughout the entire observed period, and it has increased by almost 4% in 2015 compared to 2010. Services in the field of data processing, hosting and related activities and web portals also constitute an important part of the software sector, although they showed a downward trend in the respective period. The share of this group of activities declined by around 4% in 2015 in comparison with 2010. Software publishing and other information service activities make up for a less significant (less than 1%) share of the turnover in the Serbian software sector [5].

The highest number of employees is recorded for computer programming, consultancy and related activities. In 2015, the number of employees in this group took up as much as 67.84% of total employment in the software sector.

Compound annual growth rate (CAGR) calculated for the 6-year period per sub-groups of the software sector shows that the highest growth rate of employees was recorded in computer programming, consultancy and related activities (14.2%) and in software publishing (10.5%).

There are huge regional disparities in the distribution of software sector turnover between the North and South of Serbia. Turnover of the software sector in the North of Serbia (covering the regions of Vojvodina and Belgrade) was approximately 20 times higher than in the South of Serbia (Šumadija and Western Serbia, Southern and Eastern Serbia) in the observed time period. The regional distribution of the turnover in the software sector across the four regions in Serbia is presented in more detail in Table 2. In the Belgrade region, the turnover recorded an absolute growth in the 6-year period and an average share of around 80%. The turnover of the software sector in Vojvodina experienced both an absolute and relative increase: it recorded a growth of RSD 7.4 million and 3.1%. The turnover of this sector in the region of Šumadija and Western Serbia and in the region of Southern and Eastern Serbia slightly increased in absolute terms, but in its relative share it was almost constant: 2% and 3% respectively.

The highest number of employees has been recorded in the Belgrade region throughout the entire period, except in 2012. It is interesting to note that in 2012 Vojvodina had a slightly higher number of employees in the software sector than Belgrade, but the turnover of the sector was higher in Belgrade by around RSD 31.8 billion. Šumadija and Western Serbia and Southern and Eastern Serbia have

**Table 1: Turnover and employment in the software sector in Serbia**

	2010	2011	2012	2013	2014	2015
Turnover of the software sector in Serbia (in RSD)	34,614.994	39,110.659	46,196.095	54,765.593	61,647.037	75,468.254
Total number of employees	10,464	8,873	7,009	10,072	17,160	19,152

Source: Statistical Office of the Republic of Serbia.

**Table 2: Regional distribution of turnover of the software sector across the four regions in Serbia**

	2010		2011		2012		2013		2014		2015	
	RSD mill.	%	RSD mill.	%	RSD mill.	%	RSD mill.	%	RSD mill.	%	RSD mill.	%
Belgrade	28,556	82.5	32,232	82.4	37,736	81.7	44,891	82.0	10,114	81.3	59,828	79.3
Vojvodina	4,313	12.5	4,868	12.4	5,949	12.9	7,059	12.9	8,491	13.8	11,753	15.6
Šumadija and Western Serbia	659	1.9	815	2.1	906	2.0	1,006	1.8	1,112	1.8	1,597	2.1
Southern and Eastern Serbia	1,088	3.1	1,196	3.1	1,605	3.5	1,810	3.3	1,930	3.1	2,290	3.0

Source: Calculated by the authors on the basis of data from the Statistical Office of the Republic of Serbia.

a substantially lower number of employees. However, in the last two years of the observed period, a significant increase of employment in Southern and Eastern Serbia took place (Figure 1).

In 2015, the highest share in total gross earnings in the software industry was observed in computer programming, consultancy and related activities (58%) and data processing, hosting and related activities, web portals (19%) [8].

Due to lack of trade data, the trade balance will be presented only for software publishing. This data shows an unfavorable position of Serbia in international trade: virtually in the entire 2012-2016 period, the trade balance was negative (Table 3). Therefore, Serbia was importing more software than it exported, which had a negative effect on the country's balance of payments. However, this incomplete picture does not take full account of the fact that most software activities in Serbia are geared toward international markets.

The negative balance of software publishing in international trade was characteristic of all the regions in the 2012-2016 period, except for the Belgrade region in 2012 and 2013.

In order to determine the top exporting countries for Serbian software publishing, we first identified the top

ten export destinations. In the second step, we selected four countries with the highest value of export for each year. These top exporting countries are Austria, the United Kingdom, Bosnia and Herzegovina and Montenegro.

## Research design

We conducted an online survey distributed to software companies in Serbia. The general aim was to identify the main strengths and challenges of the software sector in Serbia, its main sub-specializations, the compositions of the national value chain/network, future development trends and level of internationalization and possible directions of innovative development. Our results provide useful insights for policymakers in Serbia for evaluating the current state of the software industry in the country, planning future activities and stakeholder dialogues and the development of RIS3.

The survey was conducted from November 7<sup>th</sup> to December 25<sup>th</sup> 2017. It consisted of 45 questions and included seven main parts: General characteristics of the company, Growth and competitive advantage of the company, Strategic partnerships and cooperation, Placement and market, Research-Development-Innovation in the company, Strategic development directions, and Distinguishing characteristics of the company.

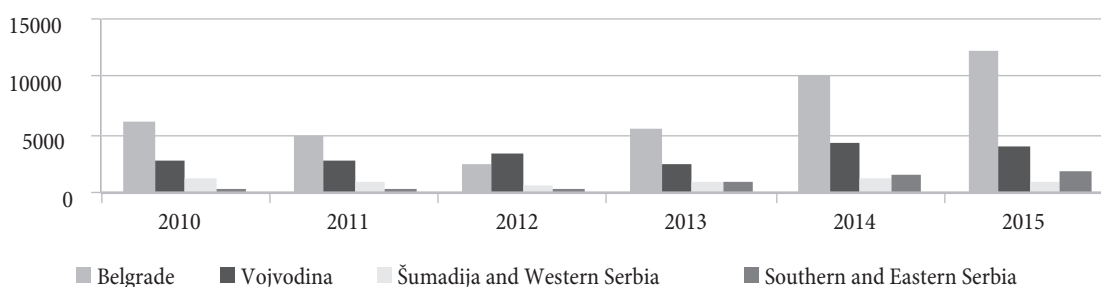
We delivered the questionnaire to the respondents by email (with a link to the questionnaire in LimeSurvey). An invitation to complete the questionnaire was sent to 1,089 companies, out of which 195 companies responded to it, which means an 18% response rate. After screening the data for high-quality replies, the total number of companies whose responses were analyzed was 56. This made for one third of the responding companies (28.72%).

**Table 3: Export and import of software publishing in Serbia (in EUR)**

Year	Export	Import	Trade balance (+, -)
2012	1,263,415	1,977,242	-713,827
2013	1,192,312	1,160,958	+ 31,354
2014	438,446	1,450,204	-1,011,758
2015	714,618	2,020,430	-1,305,812
2016	398,234	842,129	-443,895

Source: Calculated by the authors on the basis of data from the Statistical Office of the Republic of Serbia.

**Figure 1: Regional distribution of employees in Serbia's software sector**



Source: Statistical Office of the Republic of Serbia.

This paper presents the results of the survey, with the main focus being on the profile of software companies in Serbia, the main strengths and weaknesses of this sector, as well as on future trends.

## Empirical results

### Profile of IT software companies in Serbia

When it comes to geographical distribution of software companies in Serbia, companies are mainly located in Belgrade, Niš and Novi Sad. In the vast majority of other municipalities there is an insignificant concentration of software companies. Nearly 50% of the companies from the sample are located in the Belgrade region, which is the most developed region in the country. More than one third of the companies are operating in the Vojvodina region, while 20% are from Šumadija and Western Serbia and Southern and Eastern Serbia. Almost half of the sample is covered by the companies that are operating in the market for more than ten years. Around 7% of the sample includes young companies that are 1-3 years old. More than 65% of companies have up to ten employees (Table 4). The scope of their activities includes computer programming, consultancy and related activities (over 60%), data processing, hosting and related activities, web portals, software publishing and other information service activities.

The total number of employees in the software sector in Serbia in the 2013-2017 period shows an upward trend which is in line with official LFS data. In the 5-year period, employment increased by 57%. Around 84% of employees hold a university degree and more than 80% of them are working on software development.

The increasing trend of the IT software industry and high demand for employees are also reflected in the respondents' predictions for the next year, according to which they estimated an increase of the number of employees by 13% by the end of 2018.

More than half of the companies from the sample have formal contractual relationships with international partners. Joint venture and license agreements are the most common forms of cooperation with foreign partners. The

quality of services offered is the most important factor in the process of forming international partnerships. More than 57% of companies in the software industry conduct sales abroad, out of which approximately half of the companies achieve foreign sales of up to EUR 50,000.

Although many Serbian companies are focused on outsourcing, some have developed their own products, which are mostly produced for the Western markets. More than 70% of the companies in the software industry are working on coding; the least present activities within the value chain are marketing and sales (42% of companies).

Respondents' predictions for the future focus on an upward trend and high demand for highly qualified personnel. Landing in new markets and developing new products/services for the domestic and foreign markets are the next steps indicated by a large number of companies. In order to expand and develop the sector in the future, governmental regulations should change, according to the respondents. The most important constraints for future development opportunities indicated by the respondents are: high expenditure on taxes and contributions and unfavorable general conditions in the domestic market.

### Innovation and competitive position of Serbian software companies

More than 70% of the companies have introduced innovations over the last seven years. Cooperation with the R&D sector in the country is at a very low level, given that only one

**Table 4: Characteristics of companies in the software industry**

Characteristics		Total (%)
Age of the company	1-3	7.8
	4-7	13.7
	7-10	31.4
	More than 10	47.1
Region	Belgrade	49.0
	Vojvodina	30.6
	Šumadija and Western Serbia	10.2
	Southern and Eastern Serbia	10.2
Type and size of the companies	SME <= 10	65.12
	SME 11-49	20.93
	SME 50-249	9.30
Ownership	Private	94.6
	State	5.4

Source: Authors' own calculations based on data from the survey.



third of the companies reported R&D collaborations. Despite this lack of collaboration, more than 60% of the companies conduct their own research and development. The level of networking through clusters is also at a low level; only 36% of the companies are members of any cluster in the country (Table 5).

The competitive position of software companies in the domestic market is based on three factors: specialized expertise in the field, previously acquired reputation and good quality of products and services provided. On the other hand, their position in the domestic market is weakened by a lack of developers and designers. Generally, the shortage of skilled labor and risk of fluctuation of IT experts are the most important challenges of the software industry in Serbia.

Company positioning and achieving a competitive position in international markets is determined by the quality of the products and services and the extent to which they meet the users' needs, specialized expertise, previously acquired reputation and programming skills. The most important limiting factors in international markets are lack of qualified labor, weak marketing and small supply.

According to the respondents' observations, lack of skilled labor and the risk of high fluctuation of IT experts are the most important obstacles for further development and growth of companies operating in this sector. In addition to this, there are also barriers which refer to market conditions and the tax system in the country:

- high labor costs due to outsourcing,
- high level of contributions for salaries,
- unfair tax system, favoring domestic companies operating abroad,

- impossibility to publish software products (applications) on Google/Apple store from Serbia,
- taxation of the marketing budget that exceeds 10% of revenue.

### Government measures

The performance of companies is partly conditioned by governmental policies. With regard to specific measures that should be introduced by governments, most of the companies consider that direct support to R&D and innovation in companies and entrepreneurship programs would affect the companies in the following few years. The following measures are proposed by the software companies:

- incentive measures for exporters,
- reduction of fiscal and para-fiscal burdens,
- elimination of politically preferred suppliers,
- reducing corporate income tax and contributions for the salaries of new employees,
- reducing the unfair relationship between taxes on regular employment and employment of people through intermediary agencies,
- support to domestic entrepreneurs through incentives in employing and taxation,
- reducing corruption at the highest levels and creating better conditions for smaller producers,
- long-term incentives, innovation incentives, incentives to establish cooperation between local firms with a new product.

The survey results clearly show how the lack of skilled staff deteriorates the growth potentials of the software industry in Serbia. According to the survey respondents, adjusting the education system to the needs of the software

**Table 5: Innovation management and research and development in the companies**

Innovation and research and development in the company		Total %
Has the company introduced any innovation since 2010?	Yes	72.73%
	No	27.27%
Does the company cooperate with science and research organizations - universities, institutes and research and development centers?	Yes	30.30%
	No	69.70%
Does the company conduct its own research and development?	Yes	63.64%
	No	36.36%
Is the company a member of a cluster?	Yes	63.64%
	No	36.36%

Source: Authors' own calculations based on data from the survey.

industry should be a clear priority measure. Modernizing curricula and increasing enrolment rates for IT studies are considered to be very important for the sector, as well.

The Government should be doing more for the IT software sector when it comes to education, particularly to increase the offer in the market by educating more IT specialists at faculties, colleges and secondary schools. The increase of students enrolling at IT studies has occurred owing to the rising popularity of the IT profession among young people. The current capacities of Serbian universities to accept informatics students should be increased dramatically. Even if the education system suddenly increased the enrolled numbers of coders, developers and software engineers – it would not be enough to meet the needs of the IT industry.

Serbia's higher education system does not match the labor market needs. There is a need for curriculum change in higher education, since software engineers, designers and solution architects should possess more profound knowledge in certain areas of IT engineering. The introduction of programming in elementary schools has already begun, but it is necessary to continue in this direction and to further improve the curriculum.

### SWOT analysis of the software industry in Serbia

For the purpose of completing the SWOT analysis, the following major aspects in the identification and analysis of opportunities and barriers of IT software industry in Serbia have been considered:

- Human resources,
- Domestic market,
- International market,
- Environment - Government measures.

Each aspect was examined by identifying the related strengths, weaknesses, opportunities and threats. Results of the SWOT analysis are presented in Table 6.

### Future trends in IT software industry in Serbia

Future trends in IT software industry are determined by the existing structure, scientific and technological prospects, capacities and potentials for innovation and

market competition, but conditioned by resources and internal weaknesses. There is a wide agreement on these trends among managers of major companies, leading researchers, Government officials and experts in the sector.

The software industry in Serbia is characterized by a high number of SMEs and freelancers, while the number of large companies is negligible. Nevertheless, the number of large companies in Serbia has been increasing since the beginning of the 21<sup>st</sup> century. Many of these companies have more than one thousand employees and several hundreds of software specialists. Special attention should be given to activities focused on the development of specific products and services, rather than outsourcing and simple programming services that were mainly present in the first decade of this century – domestic companies strive to compete both in domestic and international markets with specific expertise, knowledge and skills, with growing successes in niches such as gaming, entertainment and media, efficient management of large infrastructure networks (big data, distributed data systems), supercomputing (modelling complex systems, visualization), smart printing, development of next-generation encryption technologies, sector-wide integration built around data acquisition and management (particularly in agriculture, health and environmental applications) and robotics.

General trends in science and technology will shape the key programming activities and orientations toward specific products and services which companies will offer in the near future: data science, data security, cyber security, virtualization of goods, Internet of things, robotics, artificial intelligence, machine learning, graphics processing units and other hardware accelerators, distributed computing infrastructures, new parallel programming languages, 3D modelling, virtual reality, embedded systems, smart grids, cloud-based services, big data analytics, deep learning, pervasive computing, data business and electric cars.

The strategic orientation of the country toward digitalization of economy and society will strongly influence the future of the software industry in Serbia: omnipresence of IT, demand will only grow; efficient functioning (of enterprises, the Government, large infrastructures); digitalization (cultural heritage); logistics

**Table 6: SWOT analysis of the software industry in Serbia**

Strengths	Weaknesses
<p><b>Human resources</b></p> <ul style="list-style-type: none"> <li>well-educated researchers and software professionals</li> <li>highly qualified, motivated and innovative workforce</li> <li>good engineering skills and mindset</li> </ul> <p><b>Domestic market</b></p> <ul style="list-style-type: none"> <li>IT and software sectors are the leaders in Serbia's economy in terms of annual growth rate</li> <li>considerable number of R&amp;D software companies in Serbia</li> </ul> <p><b>International market</b></p> <ul style="list-style-type: none"> <li>cultural similarity with Western countries</li> <li>proximity and time zone in line with almost all EU Member States</li> <li>good command of English language within the sector</li> <li>lower labor cost as a competitive advantage compared to EU countries</li> </ul> <p><b>Environment - Government measures</b></p> <ul style="list-style-type: none"> <li>political stability</li> </ul>	<p><b>Human resources</b></p> <ul style="list-style-type: none"> <li>lack of skilled labor in the market - "shallow" labor pool</li> <li>lack of high-quality junior and senior developers - the entire sector is growing faster than the inflow of new IT graduates and experts</li> </ul> <p><b>Domestic market</b></p> <ul style="list-style-type: none"> <li>low interest in IT industry for collaboration and research projects with universities</li> <li>lack of budget for research activities, as well as for developing human resources in research and higher education</li> <li>level of development of broadband infrastructure is very low</li> <li>focus of software companies mainly on exports, rather than on driving the local market</li> </ul> <p><b>International market</b></p> <ul style="list-style-type: none"> <li>insufficient knowledge and skills for international market penetration</li> <li>command of other languages (German and French) is significantly weaker compared to English</li> </ul> <p><b>Environment - Government measures</b></p> <ul style="list-style-type: none"> <li>absence of appropriate legislation</li> <li>lack of computer literacy among Government officials, as well as in the wider population</li> </ul>
Opportunities	Threats
<p><b>Human resources</b></p> <ul style="list-style-type: none"> <li>growing interest of young people in ICT studies</li> <li>increase of enrolment quotas</li> </ul> <p><b>Domestic market</b></p> <ul style="list-style-type: none"> <li>small size of IT software companies allows for easier transition into agile/collaborative mode of support to their end users</li> <li>relatively low price of doing business in Serbia compared to EU Member States</li> <li>potential for growth - Serbian ICT sector is still far from the saturation point</li> <li>IT is a general-purpose technology and can be applied in all sectors</li> </ul> <p><b>International market</b></p> <ul style="list-style-type: none"> <li>capability of producing top-quality and highly innovative software solutions, as well as all necessary services, know-how, and applied research capabilities</li> <li>geographical proximity to the European market opens up outsourcing potentials</li> </ul> <p><b>Environment - Government measures</b></p> <ul style="list-style-type: none"> <li>recognition and substantial support of the Government of Serbia to the IT sector at the highest level (both political and financial support)</li> <li>political stability and economic growth of Serbia as a country in its final stages of accession to the EU</li> <li>harmonization of legislation and online payment procedures</li> <li>introduction and implementation of e-government and computerization programs on national and regional levels</li> <li>matching the Serbian education system with economy (market) needs</li> </ul>	<p><b>Human resources</b></p> <ul style="list-style-type: none"> <li>brain drain</li> <li>insufficient inflow of new programmers and graduates</li> </ul> <p><b>Domestic market</b></p> <ul style="list-style-type: none"> <li>great inflow of foreign IT companies might put serious strains on the existing IT labor market</li> </ul> <p><b>International market</b></p> <ul style="list-style-type: none"> <li>uncertain sources of funding, such as venture capital</li> <li>legislation and online payment: technical inability to pay in foreign currency - only RSD can be obtained from banks; because these are domestic companies, only dinars can be used for online payments</li> </ul> <p><b>Environment - Government measures</b></p> <ul style="list-style-type: none"> <li>governance and regulation: legal and financial framework conditions taxation for small companies and start-ups</li> <li>lack of trust in the promises of the Government</li> </ul>

Source: Summarized by the authors on the basis of the results from the survey.

(public procurement, transport, pharmaceuticals, defense); Industry 4.0; and the transformation of the electric power system. Interest in this domain is on the rise, since many foreign ICT companies have already established their branches in Serbia and are attracting highly qualified and well-educated young employees. The local start-up culture is also improving, with an increasing number of start-up companies.

Capacities and potentials for innovation are already in place, since computer programming reached the first position in Serbia for the years 2015 and 2016 in a ranked list of all NACE groups in the country – this comparison is based on input-output indicators of economic, technological and innovative performance [10].

Major restrictions and obstacles for future development of this sector in Serbia are related to the lack of human resources: brain drain is enormous and is growing; particularly the young graduates are attracted by better professional prospects in the EU and North America – software specialists are in high demand worldwide. Further growth is significantly hampered by the increased scarcity of ICT professionals and the competitive pressures in the global labor market. Given the rising salaries and costs in Serbia for IT professionals, local companies that operate only in the domestic market will have to make significant efforts to stay competitive. Coupled with unfavorable demographic trends in Serbia, it will be difficult to overcome these constraints. Prospects for changing this are rather uncertain.

One particular obstacle is the lack of entrepreneurial and intellectual property rights culture, as well as the fear of business failure and competition, both domestically and in international markets. These specific obstacles could be reduced by improving the quality of education and through more openness to global markets, following the examples of an increasing number of success stories, and growing importance for national GDP and development of the economy and society in Serbia.

Finally, concerning the future trends of the IT software industry in Serbia, it is worth to mention specific “business dreams” of managers and software specialists in Serbia based on the survey results: selling a company for a significant amount, traveling around the world and

starting a new business; running a company with many employees; promoting science, entrepreneurship and art in the vicinity – in Serbia and the region; making positive changes in the country in general; becoming the standard by which game developers measure their results; becoming one of Europe’s unique companies; and placing Serbia on the world map.

## Conclusion

Results of this study have confirmed that the software industry has been the most dynamic and fastest growing sector in Serbia in the recent years. The business model of most software companies is changing from outsourcing and simple programming services, which dominated in the first decade of the 21<sup>st</sup> century, to developing their own products. In the period from 2010 to 2015, the total turnover and number of employees in the software industry have more than doubled, which underscores the emerging character of this sector in Serbia. The Belgrade region and Vojvodina are the most developed regions in terms of employment and turnover. Although numbers of employees in Šumadija and Western Serbia and Southern and Eastern Serbia are substantially lower than in Belgrade and Vojvodina, employment growth is visible in these regions, too.

The software sector is characterized by a high level of internationalization and innovation. In order to stay competitive in international markets, permanent innovation of products and services is necessary. Cooperation with R&D institutions in Serbia is at a very low level, as is networking through cluster organizations. Only one third of the companies have established some kind of collaboration with the R&D sector and are members of clusters. The most important sources of competitive advantage of companies operating in this sector are the good quality of the products and services, ensuring high responsiveness to the needs of new users, specialized expertise in the field and previously acquired reputation and programming skills. Generally, lack of skilled labor in the market, risks of fluctuation of IT experts and weak marketing are the most important challenges of the software industry in Serbia.

Respondents in our survey underlined that the Government should be more supportive of the software sector when it comes to education, particularly to educate more IT specialists and to change curricula in higher education. The Serbian Government recognizes the potential of the software industry and its contribution to the economy. However, it will be important to introduce specific measures in order to create meaningful support structures and programs. Some of the proposed measures are incentives for exporters, reduction of fiscal and para-fiscal burden, more transparent public procurements, reducing corporate income tax and contributions for the salaries of new employees, reducing the unfair relationship between taxes on regular employment and employment of people through intermediary agencies.

The country's strategic orientation toward the digitalization of economy and society will have a particular influence on the future of the software industry in Serbia. Our survey results reveal indications that the software industry in Serbia is likely to grow further. This provides a window of opportunity for governmental actions that can yield significant impact on the ICT sector with substantial spill-over potential to the more established industries.

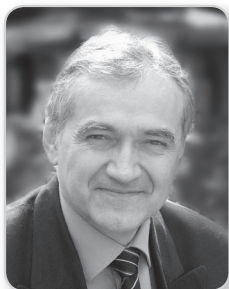


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# THE USE OF DIGITAL MEDIA BY SERBIAN MIGRANTS

Upotreba digitalnih medija od strane srpskih migranata

## Abstract

Modern society is characterized by large migration flows and vigorous technological development. In line with that, the aim of this study is to explore the role of digital media in the lives of Serbian migrants and their families in the home country. Building on the theory of uses and gratifications, two main applications of online media are analyzed: for the purpose of communication and information seeking. Given that this topic is rather understudied in the regional context, a qualitative approach was adopted. The sample included 21 participants, both from rural and urban areas, belonging to 16 households which have at least one family member working abroad. In-depth interviews were conducted in order to establish the type and extent of the communication media that they use, as well as the preferred news media and domestic topics that migrants are interested in. Results revealed that the most commonly used applications are Viber and Skype, while participants tend to communicate on a daily basis or several times a week. Online platforms that migrants use to follow news in Serbia correspond to the most popular news portals among domestic public. The topics that the migrants are mostly interested in are politics, economics and social themes. The implications of the study for academia, media practitioners and policymakers are discussed.

**Keywords:** *digital media, migrants, communication, information, theory of uses and gratifications*

## Sažetak

Moderno društvo karakterišu veliki migracioni tokovi i snažan tehnološki razvoj. U skladu s tim, cilj ove studije je da istraži ulogu digitalnih medija u životima srpskih migranata i njihovih porodica u Srbiji. Polazeći od teorije koristi i zadovoljstva, dve glavne upotrebe onlajn medija su analizirane: komunikacija i informisanje. S obzirom na to da je ova tema još uvek u velikoj meri neistražena u regionalnom kontekstu, primenjen je kvalitativni pristup. Uzorak je činio 21 učesnik, iz urbanih i ruralnih područja, koji dolaze iz 16 domaćinstava koja imaju bar jednog člana porodice koji radi u inostranstvu. Putem dubinskih intervjuva ustanovljeno je koju vrstu komunikacionih medija koriste i u kom obimu, kao i koje informativne platforme i teme preferiraju. Rezultati su pokazali da se za komunikaciju najčešće koriste Vajber i Skajp, kao i da su u kontaktu na dnevnoj bazi ili nekoliko puta nedeljno. Od informativnih portala migranti prate iste kao i domaća publika. Teme za koje su migranti najviše zainteresovani su: politika, ekonomija i društvene teme. U radu su diskutovane i implikacije ove studije za akademiju, praktičare u medijima i donosiocje politika.

**Cljučne reči:** *digitalni mediji, migranti, komunikacije, informacije, teorija koristi i zadovoljstva*

## Introduction

Migration issues are currently at the top of the agenda of policymakers, general public and academia. The fact is that 258 million people were in the position of international migrants in 2017, and this number continually grows [38]. There have been numerous studies on migration, which is mostly regarded as a process in human societies. A migrant is “a person who resides at a different place from where they were born, or who has moved from their habitual place of residence... people who may have migrated for a variety of purposes, voluntarily or perforce, including economic migrants, asylum seekers and refugees... migrants can include those moving within a country (internal migrants); it (the term) can also be used to refer to international migrants, those who have travelled from other countries” [23, p. 6]. Two most common groups are war migrants (together with refugees) and labor migrants (e.g. due to EU enlargement). It is also important to note that, after a certain amount of time, migrants represent diaspora from the country of origin point of view.

Research about the role of media in migration issues is rather scarce. Scholars tried to discover the extent of representation of migrants in the mainstream media, e.g. newspapers, TV channels [10] and the role of journalists in that process [2]. It has been acknowledged in literature that media and journalists help in shaping stereotypes/prejudice and creating biased content when reporting about migrants [12]. When it comes to analysis of attitudes, mostly attitudes toward immigration and immigrants were measured [1], [26], [29], together with other related constructs, such as nationalism, sentiment toward immigrants and discrimination elements. However, the topic of the role of online media in the life of migrants has remained understudied. This research aims to address that gap and to help in better understanding of the types, quantity and relevance of the use of media by Serbian migrants.

Uses and gratifications theory has been widely employed in the research concerning why individuals use different kinds of media, from its formulation in the 1970s [19] till nowadays. This theory acknowledges psychological and social factors that affect individual's behavior in communication and consider audience to be active, i.e. individuals use media

to achieve some goals and gratifications. Gratifications that the audience can accomplish through media usage are numerous: usefulness (people use media to execute some tasks), intention (media content determines the usage – reading news to get informed, watching comedy to laugh, etc.), selectivity according to person's interests and resistance to influences (members of the audience value media content independently from media persuasion) [3]. Uses and gratifications studies have dealt with all kinds of communication formats, such as: television [16], [17], newspapers [39], video games [24] and the Internet [21], [30], to name some of them. It could be noted that numerous studies [9], [20] have examined the influence of different motives on individual's choice between the Internet and traditional media; however, the relevance of person's various motives for the usage of different Internet communication formats has remained rather uncovered by research.

Furthermore, during the past two decades, many studies have tried to reveal different aspects and motives of Internet usage. For example, Korgaonkar and Wolin [21] studied 41 various motives, classified in 7 groups, for the use of the Internet. Extensive research [6], [31] discovered that seeking information is the crucial motive for the use of this medium. Moreover, people also use the World Wide Web to establish social connections in virtual society and try new, different and improved versions of themselves [22]. Social context is often correlated to entertainment and this aspect of the Internet is usually highly appreciated by users. Chen and Wells [5] and others (e.g. [18]) assert that amusement affects a person's attitude toward a website and list entertainment as one of the three main motives for the usage of this medium. It can be concluded that Internet tools are mostly used for the purpose of obtaining information and socialization. Building on this notion, this study will try to shed some light on the exploration of the significance and extent of use of both communication and news online media.

## Methodology

### Research paradigm

The reason for conducting qualitative research is very well summarized by Sayer [32] who explains that, although



quantitative data deals with numbers, qualitative data deals with meanings, which are expressed through language and action which create perceptions. The benefit of such a research is that the data, length, detail, content and relevance of the data are not determined by the researcher, but recorded as spoken or as they happen, usually in the form of notes or tape recordings [8]. Guba and Lincoln [14] mention that “human behavior, unlike that of physical object, cannot be understood without reference to the meaning and purposes attached by human actors to their activities. Qualitative data, it is asserted, can provide rich insight into human behavior”.

They refer to the paradigm as a basic belief system or world view that is the investigator’s guide in ontologically and epistemologically fundamental ways. Strauss [36] states that the paradigm is a way for a researcher to analyze data, where the paradigm could inform the researcher about theoretical issues which could help in the analysis. The reason why paradigm is an important part of this study is, as Miles and Huberman [28] mention, that researchers must show their epistemological views since, in this way, preferences of the researcher would be clear and would help to assess how the data is collected and analyzed.

For the purpose of this study, we shall use an interpretivist research paradigm which is often regarded as constructionism. This interpretivist approach Schwandt [33] relates as the goal to understand the complex world through lived experiences from the position of those who live them. Sounders et al. [35] consider the interpretivist paradigm socially constructed and subjective with the aim of researching social phenomena and subjective meanings. They go on to explain that the concern of the researcher in such a paradigm would be to understand the fundamental meanings attached to organizational life. Guba and Lincoln [14] relate that constructionism is knowledge that consists of the construction where there is a relative consensus among the competent to interpret the substance of the construction. They clarify that social, political, cultural, economic, ethnic, as well as gender factors differentiate the consensus from different constructions. The important observation of Guba and Lincoln [14] regards the way in which reality is perceived through this paradigm where it is seen as a form of

multiple, intangible, mental constructions, socially and experientially-based, local and specific in nature (although these elements are often shared among many individuals and even across cultures).

This paradigm is convenient and relevant for the research conducted in this study due to the fact that the study refers to researching the nature of a social phenomenon. The media and migrations, being the social phenomena, influence the view and experience of households affected by migrations. By analyzing social factors and behavior of these households in their natural setting, the research will provide us with an insight into the role of digital media in everyday life of migrants and their families.

## Instrument

The qualitative research method used in the study is implemented through semi-structured interviews with participants. As Bryman [4] mentions, semi-structured interviews can also be used as a part of a mixed-methods approach. According to Sounders et al. [35], semi-structured interviews contain topics and questions that the researcher must cover, although they might vary from interview to interview. They further explain that the researcher can omit some particular questions, given a specific organizational context that is encountered in relation to the research topic. It is possible that additional questions may be required in order to explore the research question and objectives, bearing in mind the nature of events within a particular organization. Such interviews are typically conducted through audio recording of the conversation or perhaps note-taking [35]. Harrell and Bradley [15] mention that such a type of interview collects detailed information through a style that is conversational in nature. This type of interview is often used when the researcher wants to delve deeply into a topic and to understand thoroughly the answers provided. According to Thomas [37], such an interview method contains features of both structured and unstructured interviews and therefore uses both closed and open questions.

This benefit of a semi-structured interview allows the researcher to use both interview methods. The interviewer would have a set of pre-planned core questions

for guidance so that the same areas are covered with each interviewee. Thomas [37] further mentions that, as the interview develops, the interviewee has the chance to explain or offer more relevant information depending on the questions, if he/she chooses to do so. If questions are difficult to answer, the interviewer can use cues or prompts to encourage the interviewee to delve deeper into the question. Probing, as Gray [13] defines it, is a way for the interviewer to explore new paths which were not initially considered. The interviewer is free to probe the interviewee to explain the original response or to follow a line of inquiry that has been presented by the interviewee [25]. As David and Sutton [7] mention, identifying key topics and questions in advance gives the interviewer a sense of order which helps them to draw questions from unplanned information presented by the interviewee.

One of few studies on the subject that can serve as a benchmark, the research conducted by Metykova [27] on the use of digital media by transnational workers coming from Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia to United Kingdom, demonstrated that: "Migrants interviewed for this research have proved to be avid and highly skilled users of digital media in particular, they access newspapers, magazines and films online, use Skype to make calls, post photographs on social networking sites and even check

online images of their home towns in Eastern Europe on a daily basis." Therefore, our study will explore these findings in the case of Serbia. Given the scarce evidence, both studies are exploratory by their character, using in-depth interviews as the research technique and the sample of similar size.

## Sample

The sample included 21 persons appertaining to 16 households. Corresponding to the structure of the overall Serbian population, the sample structure according to gender was equally distributed. The same applies to the urban/rural sample division. Three different urban areas were considered (including the capital) and two rural regions were included. Detailed sociodemographic attributes of the interviewees are presented in Table 1.

The majority of the represented households receive remittances from parents (4 of them from father and 1 from both parents); followed by the spouse (3 from husband and 1 from wife); brother (1) or sister (2); while each household receives remittances from daughter, aunt, uncle, godparents and friends. Two households obtain funds from abroad through pension. Three out of sixteen households receive funds from two countries, while others obtain them from one source abroad.

**Table 1: Sociodemographic characteristics of the sample**

No. of hh*	Gender (F – female M – male)	U – urban R – rural	Age	Ethnicity	No. of hh members	No. of children in hh	Education (HS – high school)	Employment status
1	M	U	28	Serbian	2	0	Student	No
2	F	U	44	Serbian	1	0	HS	Yes (NF)*
3	F, M	U	33	Serbian	4	3	HS	Yes (NF)
4	M	U	25	Serbian	2	1	HS	Yes
5	F	U	24	Serbian	3	0	Student	No
6	F	U	38	Serbian	3	2	HS	Yes
7	F	R	58	Russian	3	1	HS	Yes (NF)
8	F	R	57	Romani	10	4	Primary school	Housewife Farmer
9	F, M	R	63	Serbian	2	0	HS	Yes (NF)
10	F	R	27	Serbian	3	0	Student	No
11	F, M	R	34	Serbian	4	1	HS	Yes (NF)
12	F	R	33	Serbian	6	3	HS	Yes
13	F	U	26	Serbian	2	0	BA	Yes
14	M	U	23	Serbian	4	1	Student	Yes
15	M	R	67	Serbian	1	0	HS	Retired
16	F, M, M	R	85	Croatian	3	0	Primary school	Farmer

Note: \*NF signifies "informal", which means that the person is employed, but not registered for social security contributions; hh stands for "household".

All participants in the research reported that their remittance senders live in developed countries, namely: the USA, EU countries, Canada, Australia, Russia and Qatar. Even though some of them left for non-economic reasons, e.g. education, they opted for the countries characterized by higher income. However, it appears that besides the economic situation, proximity of the emigration country to Serbia also plays a significant role, considering that Italy, Austria and Germany are listed several times in the survey. There are two households in the sample which receive funds from Croatia and Bosnia and Herzegovina, but that occurred due to specific social circumstances in recent history of the Western Balkans rather than because of geography.

The analysis of data was performed in a two-stage process: coding – conducted in the MAXQDA program, version 12.0.3, and content analysis and drawing up of conclusions.

## Results and discussion

### Communication media

The introduction of smartphones to the market and applications that can be used independently from time or space, i.e. which are omnipresent, tremendously affected the communication patterns of people in general. These tools have provided possibilities of long-distance communication at very low prices or even for free. Furthermore, they allowed communication in all formats, including: text, audio and video. Finally, these tools even expanded the spectrum of expressions, by inauguration of emoticons and other visuals that are primarily used in the instant messaging space.

In order to determine whether these tools proved to be significant in communication between a migrant and their family members, we asked participants in the survey to name the applications that they use to keep in contact with their family members. Respondents' typical answers are listed below:

- *We keep in touch via Skype, we talk a lot. I talk to his wife more often because she is a third or fourth grade teacher, each grade has a different teacher there, and*

*she is much more of an extrovert and likes to talk. She even contacts me sometimes, I don't have to... but it's different with him, I have to chase him to get in touch.*

- Interviewer: *How do you keep in touch? What means of communication do you use?*
- Respondent: *We use Viber.*
- Interviewer: *Viber. Do you use Skype, social networks, anything?*
- Respondent: *No, we don't.*
- *We use Viber. We usually talk and don't send messages. We did use Skype before, but now we only use Viber. It's easier because you have Viber on your phone... I usually stay with my mother while my husband is abroad, because she can help me with the kids. She lives 4 km from here. She or my grandmother can take care of my youngest daughter while I'm at work. So, it's much easier to use Viber while I'm there.*
- *Well, Skype, Viber, whatever. Generally we get in touch over these applications.*
- Respondent: *We communicate via cell phone or via that... What's it called? Skype!*
- Interviewer: *OK. So, you have the necessary equipment, right? The headset and stuff like that.*
- Respondent: *I don't have that, we use camera.*
- *Only Skype, yes. Well if Skype is giving us some trouble... Yes, Skype mostly. Because of the camera and everything, but as I said, if Skype is not working, then we use the phone, because camera is always on, ours and theirs.*

The respondents' answers indicate that they use either Skype or Viber. These findings are supported by the study conducted in 187 countries, which established that Viber is the most popular messaging application in Eastern Europe [34], while Skype was not included in the study. Given that many of the respondents' family members have lived and worked in the USA or Canada, mostly using Facebook Messenger according to the cited study, we also wanted to determine the extent of the use of this tool in our sample.

- *I haven't been using the Facebook Messenger much in the past two months. Before that, when there was that older one, I used it more often.*

- *He doesn't have Viber or Whatsapp. Sometimes we chat via Messenger on Facebook. He has a Facebook profile, disaster. And then we use Messenger.*
- *We are texting through this.*

The results demonstrate that users prefer to use applications specifically developed for online calls (such as Viber and Skype) to the ones that are part of more ample systems (such as Facebook Messenger). It can be related to the fact that Viber is used on the smartphone and consequently is more accessible place-independently than some other applications. However, in some cases, landline telephone still makes the first option:

- *He calls from mobile to landline. Because it's like, the cheapest way.*
- *I've never had a cell phone, even when I was in America and Canada. I never wanted to keep a phone in my pocket. Never. So...either they would call me, or I would buy a telephone card, that's much cheaper.*
- *With my parents I talk over the phone, because they don't have anything that works over the Internet. And with my sister, sometimes by phone, sometimes Skype, sometimes Viber.*

Lastly, in the domain of respondents' communication patterns, this study tried to reveal the frequency of contact that family members have with their member who works abroad. In order to address this question, the respondents were asked to estimate how often they text, talk or make video calls with their family members.

- *Well, sometimes when there is something to talk about, we contact each other every day, three or four days in a row. Otherwise, let's say, at least every other week.*
- *Every day, several times a day.*
- *We usually talk every day and we don't send messages. Sometimes we call each other three times a day.*
- *Well, with my aunt in Russia once a month. I call my aunt like that. She is an old woman. And with my cousins mostly texting. And we talk also like that, once a month.*
- *We call each other every four days.*
- *Once, twice a week, it depends, but mostly once a week. When she (daughter living abroad) has spare time.*
- *Usually on Sunday and Monday, that's when she's off work.*

- *We Skype every day. Nonstop. Several times a day. Because of their little girl too, she's very attached to everything here.*
- *We exchange messages, I don't know, about every two or three days and we speak once a week. It's because I work, I have awkward working hours, I'm at work from four in the afternoon to eleven. Yes, and he goes to bed by eleven in the evening, I think, because he works hard there and we only speak during the weekends because he doesn't work then and I take some time between messages.*

It can be observed that the majority of families talk on everyday or weekly basis. Only in the situation of more distant siblings does communication take place more rarely.

## News media

In line with the uses and gratifications theory and most common motives for media usage, in the second part of the analysis, the study aimed to reveal which digital news media were mostly used by the migrants. The interviewees were asked to name the media that their family members use to be informed about domestic current affairs.

- *I think that he relies more on the US media. I know that he used to read... that we spoke about some articles published in the Danas. You know, I would mention something or he would. Those were the columns that he picked by the authors.*
- *I think that he reads the Kurir and Blic.*
- *She used to read the Kurir, but it started to annoy her, so she deleted that application.*
- *They read all of our online papers*
- *He usually reads the Kurir and Blic.*
- *She watches the news on the satellite TV. She is up-to-date with everything that's going on here.*
- *The Blic and the B92, maybe, online, but I'm not sure about B92. But the Blic definitely.*
- *I think he reads the newspapers on the Internet, the Blic for example or the Novosti, I'm not sure.*
- *He has a Telegraf app on his TV (it is assumed that the respondent is talking about teletext news on TV), I think, and similar news.*

These answers correspond to the use of digital media in Serbia, given that the Blic and Kurir have been constantly at the top of the list of the most used online news platforms in the country. Moreover, the Novosti and B92 were also ranked in the top ten online media by the number of users [11]. Besides the preferred platform, it is important also to establish which kind of information users looked for. Hence, the respondents were asked to cite which information their family members are mostly interested in:

- *They follow news on the situation in the country. They are interested in it very much.*
- *Yes, everything interests her. She likes to be up-to-date with everything that's going on here. She even calls me to tell me about the latest events here.*
- *Interviewer: OK. Tell me what interests them from here, from Serbia? For example, your sister in Canada, does she read any news from Serbia or is she only interested in the family when she talks to you?*
- *Respondent: Everything, everything.*
- *Interviewer: So she is interested in what is happening in our society.*
- *Respondent: Yes. Because they wanted to come back. So they were interested in the situation in the country...*
- *They also read our newspapers. They follow what's going on here. They are interested in everything that is happening. The situation in the country in general. I guess they are interested in what is happening and what the conditions are. To know how far they should run. But not sports. And certainly not entertainment.*
- *He's more up-to-date with what's happening here than I am. He is interested in everything, everything! Sports more or less, but the economy, politics and things that happen in society here.*
- *I know that whenever he calls me he says like, hey, I saw it, it's not that terrible outside, it's not cold, the temperature is such and such, I now read, in Belgrade it is that much. He's interested in politics, news, stuff like that.*

Majority of migrants express interest in everyday political and economic situation in the country. However, not surprisingly, there are also migrants who are interested only in some specific topics or not interested in their home country at all:

- *He usually reads articles about crime and accidents. Anyway, I mean, newspapers mostly deal with these subjects.*
- *He knows what's going on here in general, but politics and economy don't interest him much. He likes sports.*
- *It's more that if he likes the author, he follows his work, and if that writer has a column in some magazine, he reads it and then makes his own conclusions and forms opinion about the situation here. Well, he's been quite upset for a while. I mean, I usually meet him at large family gatherings.*
- *She usually asks about our son and me, and about her father and his health, you know, family stuff. Sometimes I tell her some news from the town, but she doesn't care much about that. And she doesn't care and doesn't know much about political events in Serbia. I don't think she knows the name of our Prime Minister.*

There are also a couple of answers when participants did not know whether their family member followed any domestic news, given that these topics had not ever been mentioned in their conversations.

## Conclusions

In the domain of communication applications, the respondents' answers indicate that they use either Skype or Viber, while Whatsapp was not mentioned by any of them. According to the same study by Schwartz [34], in the USA or Canada, where some of the respondents have family members, the most popular communication tool is Facebook Messenger. Nevertheless, majority of respondents do not use Facebook Messenger because of new applications that are available for the same purpose (as previously stated: Viber and Skype). The other reason could be that Messenger primarily offers texting services, while almost all respondents stressed that they usually talk to their family member who lives abroad. Only two respondents mentioned the use of camera; therefore, technical requirements may also be limiting factors for the type of use of an application.

Participants living in rural area particularly emphasized that the quality of the Internet signal restricts

or negatively influences the possibility and quality of their communication. In these cases, like elders, participants generally opt for the calls using landline telephones. It is interesting to notice that some of them cited the low cost as the reason to use landline telephones, even though the use of digital communication tools is usually regarded to be free of charge. However, prerequisites for Internet communication are often overlooked, such as the possession of technology equipment (computer or cell phone) and paying the Internet subscription.

Most of migrants talk to their family members at home every day or several times a week. Limiting factors are mostly recognized in working hours (either of the member at home or abroad) or in other aspects specific for the respondent (e.g. age) or situation (e.g. time difference). The availability or the nature of communication tools do not appear to be the restriction, but rather the facilitator of their effective communication. Therefore, in future, stronger presence of digital media can be expected with regard to their usage for communication reasons.

Migrants mostly use the same media to obtain information as their family members in the home country (such as: Blic, Kurir, Novosti and B92, with a predominance of the two first-listed). These findings can indicate that family members in the home country influence the choice of and opinions on media of the members living abroad. However, this assumption needs to be tested in some of the future studies. It is interesting also to notice that it seems that females tend to use a larger number of news media than males. Similarly, this observation needs to be proved by a quantitative research. Finally, the conversation with the respondents showed that their family members do not use social media (e.g. Facebook or Twitter) to a great extent for the purpose of acquiring information, yet they principally rely on the traditional news media.

It can be discerned that many migrants are primarily interested in political and social questions. According to their family members, they exhibit very high concern for the situation in the country, presumably in order to assess whether conditions have changed (compared to the time when they left to work abroad) or because they feel homesick (even though this answer was not directly cited by any of the interviewees, it can be considered as

a valid premise due to the context and wording of their statements).

Finally, some limitations to this study need to be observed. Firstly, this study is qualitative by its nature and, therefore, the determined results cannot be applied to whole population. However, provided that this is one of the first studies in Serbia exploring the given subject matter, it justifies its explanatory approach. Building on its findings, further studies should be conducted on a larger sample and a quantitative methodology should be adopted. Secondly, the sample comprised only family members living in Serbia, who provided answers on the media usage of their members living abroad. While the answers collected in this manner regarding the usage of communication media can be considered to be comprehensive, the responses on the use of news media might be sometimes less precise. Further research could benefit from the incorporation of both groups in the sample – family members living in Serbia and the ones who work abroad.

In view of recent social and technological trends, which include both soaring of the number of migrants and great advance in the use of digital media, the investigated topic will become more relevant in the near future and should arouse more interest both among the local scholars and media practitioners.

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# ANALYSIS OF COMMUNICATION WITH THE NON-MARKET ENVIRONMENT: THE CASE OF SERBIAN AND MONTENEGRIN COMPANIES

Analiza komunikacije sa netržišnim okruženjem – slučaj  
srpskih i crnogorskih kompanija

## Abstract

The aim of this analysis is to obtain data on the companies' communication with the non-market environment. As Baron [3] states, companies could be very successful in their market performance, but, at the same time, failing to manage well their relations with the political and social environment or regulatory bodies. The issue's characteristics, stemming from the fact that businesses operate in various social contexts, could be considered by using the institutional economics, public policy or the CSR approach. In this article, the managerial perspective is dominant. Communications, once understood as a process of exchange with the market forces (buyers, suppliers, distributors), are analyzed as a critical point for successful managing the non-market environment issues. The research is based on the practices and experiences of Serbian and Montenegrin companies. The collected data are one of the indicators of the companies' low commitment to managing relations with the non-market environment. The data in the research section were collected through an online questionnaire with closed answers and Likert scales. In Serbia, 80 companies out of 300 responded to the questionnaires sent, while in Montenegro 52 out of 397 companies in the country's most important economic centers answered to the questionnaires. Besides the cross-country approach, standard descriptive statistics and correlation analysis were applied in the survey. Bearing in mind the fact that a small number of Serbian and Montenegrin companies responded to a simple online questionnaire, this suggests a lack of trust among the respondents, which is often the case when relying on online questionnaires. On the other hand, this low response rate suggests that a large number of companies in both countries are not interested in the problem or that they are insufficiently informed or, furthermore, that they are not at all aware of the importance of non-market communication and corporate social responsibility.

**Keywords:** *non-market environment, regulatory environment, communication, public relations, event attendance*

## Sažetak

Analiza ima za cilj da se dobiju podaci o komunikacijama kompanija sa netržišnim okruženjem. Kao što Baron [3] konstatuje, kompanije mogu biti veoma uspešne u poslovanju na tržištu, a da istovremeno ne uspevaju da dobro upravljaju odnosima sa političkim i društvenim okruženjem ili regulatornim telima. Karakteristike ovog problema koje proizilaze iz činjenice da biznisi funkcionišu u različitim društvenim kontekstima mogu da se razmatraju koristeći postupke institucionalne ekonomije, javnih politika ili društvene odgovornosti korporacija. U istraživanju dominira pristup iz perspektive menadžmenta. Komunikacije, shvaćene kao proces razmene sa tržišnim snagama (kupcima, ponuđačima, distributerima), analiziraju se kao kritična tačka za uspešno upravljanje pitanjima koja proizilaze iz netržišnog okruženja. Istraživanje je bazirano na praksi i iskustvima srpskih i crnogorskih kompanija. Dobijeni rezultati predstavljaju jedan od indikatora nedovoljne posvećenosti kompanija upravljanju odnosima u netržišnom okruženju. Podaci u istraživačkom delu rada su prikupljeni putem onlajn upitnika sa zatvorenim odgovorima i Likertovim skalama. U Srbiji, na poslatic 300 upitnika odgovorilo je 80 kompanija, dok je u Crnoj Gori na 397 upitnika odgovorilo 52 kompanije u najvažnijim privrednim centrima u zemlji. Pored *cross-country* metodologije, u istraživanju su primenjeni i standardna deskriptivna statistika i korelaciona analiza. Imajući u vidu činjenicu da je mali broj srpskih i crnogorskih kompanija odgovorio na jednostavan onlajn upitnik, ovo upućuje na manjak poverenja kod respondenata, što je čest slučaj kod primene onlajn upitnika. Sa druge strane, mali odziv govori o tome da veliki broj firmi u obe zemlje nije zainteresovan, nedovoljno je upućen ili uopšte nije upoznat sa problematikom netržišne komunikacije i društvene odgovornosti kompanija.

**Ključne reči:** *netržišno okruženje, regulatorno okruženje, komunikacija, odnosi s javnošću, prisustvo na događajima*



## The role of non-market environment

Companies' communication and public relations were mostly focused on the markets: customers, competitors and business partners. Orientation in the communication process toward the market environment did not only dominate but was understood as the only address to which the companies were sending their messages. Now, the companies are aware that not only does the "invisible hand" of Adam Smith [20] create their environment and affect their business results, but the institutions and regulatory bodies do it, too. In the economic theory, criticism of the orthodox, neoclassical theory began much earlier – in the late 1920s, with the works of Veblen, Commons, Hamilton and Mitchel [19]. This theoretical stream is known as the old institutionalism. The revival of institutionalism started in the 1960s, with a full recognition of the importance of this heterodox theory in the late 1990s. The works of Coase [9], North [17], Becker [4], Williamson [26], Hart [13] and Holmstrom [14] have clearly shown that institutions matter, that companies do not deal only with the market forces, but operate in an institutional environment, as well. Having questioned one of the main assumptions of the neoclassical theory, the assumption of perfect information, Coase [9] introduced the category of transaction costs that was of great importance for business subjects. Moreover, the economic theory shifted toward the importance of institutions, formal and informal, such as various kinds of organizations, governmental bodies, political and regulatory bodies. Granovetter [12] recently published a book titled *Society and Economy* (opposite to the Weber's [22] opera magna *Economy and Society*) in order to emphasize the fact that companies are performing in a very complex environment, being influenced by various social factors, norms and institutions. In this research, the focus is on the managerial aspects of companies embedded in the complex structures of the non-market environment.

This phenomenon also influenced the development of certain management strategies that are to define the position of the company toward the non-market environment. At the same time, it was inevitable to redefine the concept of public relations and to create a special public relations campaign directed at the main factors of the companies'

non-market environment. From the managerial aspect, it is important to understand that there is also non-market competition, which means that the non-market strategy of one company is competing with the others, e.g. that the non-market environment is also designed by the competition. The goal is to enrich the communication with the non-market environment and to establish a kind of a non-market strategy. To begin with, the company needs to identify the main issues coming from the non-market environment and to try to influence either their development or its own adaptation to changes emerging from the main institutions, regulatory bodies, political organizations, or, why not, from the activities of the NGOs. Baron [3] is paying attention to the moment when the company starts addressing the issues emerging from the non-market environment. Thus, he is formulating the non-market issues life cycle and strategies [3, p. 36]. Coming back to David Baron, it is important to point to his major contributions to the field of business and its market and non-market environment [3]. This professor of Princeton University made a strong impact by offering a more profound understanding of the role of the non-market environment via formulating its main characteristics – the four Is: a. Issues; b. Interests; c. Institutions; and d. Information. In fact, the issues, interests and information meet in the arena framed by the institutions. However, institutions are not buildings – Granovetter [11] would say that the economic institutions should be understood as social constructions. These "non-market social institutions" [1] are shaping the relations outside the markets – but are strongly linked to it. Boddewyn [6] is proposing to be sensitive to the non-market interactions that could be intermediated not only by public institutions, but also by private institutions and voluntary organizations. Up to now, an abundance of research papers and books [16] has been produced, ultimately seeking a more integrative approach.

## The role of information and how to reach the audience in the non-market environment

In Baron's "4 Is" concept, information pertains to what the institutional officeholders know about the issues. Information plays a role of one of the pillars in Bach

and Allen's [2] framework which could be considered as a modification of Baron's 4 Is concept. As a general understanding of company communication and its orientation toward the market environment, particularly toward customers/clients, it was of great importance to find out to what extent the companies in the Republic of Serbia and in Montenegro communicate with the non-market environment. The communication process and PR activities need to be carefully crafted in order to reach the audiences from the institutional and regulatory environment, as well as from the circles of active NGOs that are affecting certain businesses. Reaching diverse audiences [24] calls for different approaches and employment of different techniques (conducting surveys, organizing events in order to produce a platform for meeting with political stakeholders, or other, very particular communication techniques). Besides the fact that firms are usually not very familiar with or in any aspect close to people from governmental bodies or NGOs, the same rules of successful communication apply – the company needs to expect a kind of a message from the decoder destination [23]. The non-market environment is affecting not only large companies, but small and medium-sized, as well. The aim of the undertaken research was also to identify to what extent the non-market communication is exclusively characteristic only of the large market players. However, the first chapter of *The International Handbook on Non-market Environment Valuation* is titled "The rise and rise of non-market environment valuation" [5]. Now, it is generally accepted that a company could be very successful in its market environment, but unsuccessful in dealing with the changes and impacts from the non-market environment. Williamson and Winter [25], inspired by Coase [9], understanding the transaction cost as costs of searching for information, underly the fact that changes in the institutional and regulatory environment are causing massive transaction costs to the companies in order to face the changes and adapt. The companies not only need to keep up with the changes in real time, but also to influence the process of creating new rules and regulations or, moreover, to initiate the changes that could improve the non-market environment in order to become more favorable for businesses. In short, having created a non-

market strategy, the company is increasing its chances for influencing the changes in the market environment. In countries where the regulatory changes are so dramatic and so frequent, as in the transition economies of the Western Balkan countries (such as Serbia and Montenegro), being involved with and influencing the non-market activities is of crucial importance for business success. The companies need to be positioned in their non-market environment. Going back to the fundamental understanding of positioning [18], this means that these activities (and the integrated strategy, as well) should position the company, in the minds of the main actors, in its institutional, political and regulatory environment.

### Data description and analysis

This section analyzes the research results of the companies' communication with the non-market and market environment in Serbia and Montenegro. The selection of cities for the Serbian sample was intentional. The sample includes more than 10 cities that are relevant economic centers in the country. In choosing the companies, the authors were mindful that the sample should represent the actual ratio between the number of small, medium and large companies in Serbia. For defining the size of companies, a valid criterion of the European Union was used [21]. In addition to this, we paid attention to the fact that the shares of Serbian business sectors in GDP needed to be credibly reflected in the sample: services 51.1%, industry 38.5% and agriculture 10.4% [8]. A selection of companies from the list of the Serbian Business Directory was prepared by using simple random sampling without repeating. As an instrument for collecting data, an online questionnaire with closed answers and Likert scales was used. Online self-administered questionnaires were sent to marketing managers and PR managers of the selected companies. The interviews were conducted from February 1<sup>st</sup> to 29<sup>th</sup> 2016. We sent 300 questionnaires and received answers from 80 companies.

The Montenegrin sample included the most important economic centers in the country. The research was carried out in targeted economic sectors that include: SMEs, IT, trade sector, MBA and tourism. The online questionnaire

was sent to 397 addresses, out of which 52 responses were received.

In the first part, which is the central part of the analysis, the frequency of communication between companies and the non-market environment was measured. The following hypothesis  $H_0$  was tested in the research: *Montenegrin companies have more frequent communication with the non-market environment than the Serbian firms*. The frequency of communication measured included four types of non-market institutions: social community, regulatory bodies, political institutions and local community. As an indicator of communication frequency with the non-market environment, we took into account the share of “sometimes + frequently + always” in the sum of answers. According to the criterion, the hypothesis  $H_0$  would be rejected if the Serbian firms achieved a more frequent communication with a larger number of the abovementioned institutions or under the condition that both Serbian and Montenegrin companies achieved a more frequent communication with two types of institutions. As for the Serbian companies, the most frequent communication was achieved with the social community and regulatory bodies. Communication with the local community and political institutions was much less frequent (Table 1a).

By using the statistical crosstabs technique, we linked the variable “communication with the social community” to the variable “size of the company”. After the crossing, it was established that the largest volume of communication is achieved by large firms with 250 or more employees. According to the results, 14.3% of

large companies sometimes maintain relations with the social community, 57.1% do it frequently, while 28.6% always nurture relations with this type of institutional environment. Large companies achieve the largest volume of communication with regulatory bodies. 28.6% of these companies frequently nurture relationships with regulatory bodies, while 57.1% always maintain communication with this kind of institution. On the basis of the results obtained, 28.6% of the large companies achieve communication sometimes, while 42.9% of them always communicate with political institutions. In terms of local communities, 28.6% of the large companies say that they nurture relationships frequently, 14.3% achieve communication sometimes, while 42.9% always nurture relationships with local community institutions. Based on the results obtained in Montenegro (Table 1b), the companies maintain the highest communication level with the social community and regulatory bodies. This is followed by communication with local community institutions and, finally, with political institutions. When taking into account the cumulative rate of the responses “sometimes, frequently and always”, a slightly higher share of companies that nurture relations with the social community was recorded in the Montenegrin sample (77.8%), compared to 71.4% of the Serbian companies. Serbian companies (62.6%) establish more relations with regulatory bodies, compared to 53.7% of the Montenegrin companies. When it comes to maintaining relations with the local community, 64.9% of the Montenegrin companies, compared to 57.6% of the Serbian companies, communicate

**Table 1a: Serbia – Does your company nurture relationships with the non-market environment?**

	Never %	Rarely %	Sometimes %	Frequently %	Always %
Social community	13.8	15	31.3	23.8	16.3
Regulatory bodies	16.3	21.3	26.3	16.3	20
Political institutions	48.8	25	12.5	5	8.8
Local community	26.3	16.3	25	16.3	16.3

Source: The authors' calculation.

**Table 1b: Montenegro – Does your company nurture relationships with the non-market environment?**

	Never %	Rarely %	Sometimes %	Frequently %	Always %
Social community	3.7	18.5	35.2	16.7	25.9
Regulatory bodies	16.7	29.6	20.4	11.1	22.2
Political institutions	48.1	24.1	18.5	1.9	7.4
Local community	9.3	25.9	31.5	20.4	13

Source: The authors' calculation.

with this type of non-market institution. Finally, only 27.8% of the Montenegrin companies, compared to 26.3% of the Serbian companies, nurture relations with political institutions. This minimal percentage difference in the case of political institutions should be taken with reservations due to a possible statistical error in such cases.

Since Montenegrin companies achieve more frequent communication with the social and local community and political institutions than the Serbian companies, it can be concluded that the hypothesis  $H_0$  is confirmed.

When it comes to receiving feedback from the non-market environment, it can be concluded that the response is greater in the Serbian case, i.e. that communication messages in Montenegro were one-sided to a larger extent (Tables 2a and 2b).

Tables 3a and 3b show the frequency with which companies invite the representatives of business partners, regulatory bodies, local communities, the Government, banks and business associations to events they organize. As an indicator of the invitation frequency, the cumulative rate of the responses “sometimes+ frequently+ always” is taken into account.

**Table 2a: Serbia – Have you received feedback on your communication messages from the non-market environment?**

Never %	Rarely %	Sometimes %	Frequently %	Always %
10	17.5	33.8	23.8	15

Source: The authors' calculation.

In both samples, it is observed that companies mostly invite business partners to the organized events. 44.8% of Serbian versus 66.7% of the Montenegrin companies invite representatives of regulatory bodies to their events, 50.1% of Serbian versus 63% of the Montenegrin companies invite representatives of the local community, 18.8% of Serbian versus 53.8% of the Montenegrin companies invite government representatives, while 48.8% of Serbian versus 87% of the Montenegrin companies invite bank representatives to their events. It is worth noting that Montenegrin companies invite more frequently to their events the representatives of all of the abovementioned institutions. It should be underlined that the frequency of inviting representatives of business associations was measured only in the case of Serbia. In the Serbian case, a positive correlation was found between the variable “company size” (number of employees) and inviting Government representatives to the events (0.497), representatives of the local community (0.364), representatives of regulatory bodies (0.337), bank representatives (0.325), representatives of business partners (0.262) and representatives of business associations (0.237).

**Table 2b: Montenegro – Have you received feedback on your communication messages from the non-market environment?**

Never %	Rarely %	Sometimes %	Frequently %	Always %
9.3	38.9	33.3	16.7	1.9

Source: The authors' calculation.

**Table 3a: Serbia – Do you invite the following parties to events organized by your company?**

	Never %	Rarely %	Sometimes %	Frequently %	Always %
Business partners	8.8	1.3	16.8	31.3	45
Regulatory bodies	40	15	22.5	11.3	11.3
Local community	38.8	11.3	18.8	20	11.3
Government	65	16.3	6.3	5	7.5
Banks	27.5	23.8	27.5	12.5	8.8
Business Associations	23.8	18.8	27.5	16.3	13.8

Source: The authors' calculation.

**Table 3b: Montenegro – Do you invite the following parties to events organized by your company?**

	Never %	Rarely %	Sometimes %	Frequently %	Always %
Business partners	3.8	0	18.9	0	77.4
Regulatory bodies	18.5	14.8	20.4	31.5	14.8
Local community	18.5	18.5	27.8	16.7	18.5
Government	25.9	20.4	27.8	5.6	20.4
Local banks	9.3	3.7	24.1	37	25.9

Source: The authors' calculation.

It is observed that the frequency of invitations to events increases with the number of employees in the company, i.e. big companies invite representatives of those institutions to the events they organize more often.

Regarding how often the representatives of those institutions attend the events, based on the results and employing the same criteria for measurement, it was noted that the Montenegrin companies recorded a greater attendance from all the representatives of the institutions that were observed (Tables 5a and 5b). It should be underlined

that attendance frequency regarding representatives of business associations was measured only in the case of Serbia, where 68.8% accepted the invitation.

In the Serbian case, a positive correlation was found between the variable “company size” (number of employees) and the attendance of business partners (0.213), representatives of regulatory bodies (0.291), representatives of local communities (0.348), Government representatives (0.457), bank representatives (0.372) and representatives of business associations (0.294) (Table 6).

**Table 4: Correlation between company size and inviting representatives to the events**

	Do you invite business partners to events organized by your company?	Do you invite representatives of regulatory bodies to events organized by your company?	Do you invite representatives of local community to events organized by your company?	Do you invite representatives of the Government to events organized by your company?	Do you invite representatives of banks to events organized by your company?	Do you invite representatives of business association to events organized by your company?	
Company size	Pearson correlation	.262**	.337**	.364**	.497**	.325**	.237*
	Sig. (1-tailed)	.009	.001	.000	.000	.002	.017
	N	80	80	80	80	80	80

\*. Correlation is significant at the 0.05 level (1-tailed); \*\*. Correlation is significant at the 0.01 level (1-tailed).  
Source: The authors' calculation.

**Table 5a: Serbia – What was the response of representatives to your invitations?**

	They never respond %	They rarely respond %	They sometimes respond %	They frequently respond %	They always respond %
Business partners	11.3	1.3	3.8	43.8	40
Regulatory bodies	33.8	18.8	23.8	17.5	6.3
Local community	35	15	13.8	28.8	7.5
Government	61.3	12.5	11.3	11.3	3.8
Banks	27.5	18.8	10	30	13.8
Business associations	21.3	10	20	37.5	11.3

Source: The authors' calculation.

**Table 5b: Montenegro – What was the response of representatives to your invitations?**

	They never respond %	They rarely respond %	They sometimes respond %	They frequently respond %	They always respond %
Business partners	5.6	0	3.7	38.9	51.9
Regulatory bodies	24.1	11.1	13	40.7	11.1
Local community	20.4	13	24.1	24.1	18.5
Government	24.1	14.8	25.9	24.1	11.1
Local banks	13	0	16.7	38.9	31.5

Source: The authors' calculation.

**Table 6: Correlation between company size and response rate of representatives to company invitations**

	Response of business partners	Response of regulatory bodies' representatives	Response of local community representatives	Response of Government representatives	Response of bank representatives	Response of business association representatives	
Company size	Pearson Correlation	.213*	.291**	.348**	.457**	.372**	.294**
	Sig. (1-tailed)	.029	.004	.001	.000	.000	.004
	N	80	80	80	80	80	80

\*. Correlation is significant at the 0.05 level (1-tailed); \*\*. Correlation is significant at the 0.01 level (1-tailed).  
Source: The authors' calculation.

As it can be seen, the greatest correlation is recorded in the case of attendance of Government representatives. It is noted that the attendance frequency of the representatives increases with the size of the company, i.e. representatives will attend more often the events organized by large companies.

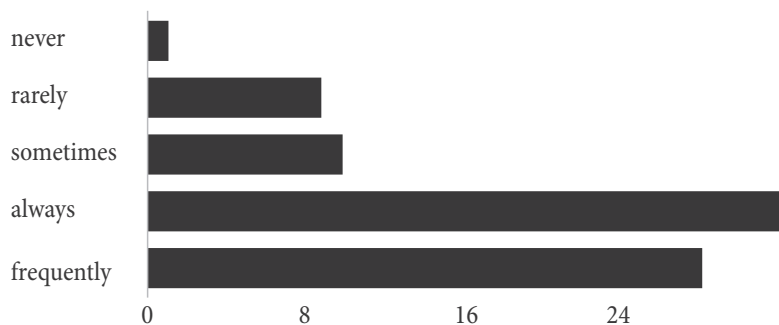
In the next segment, the companies' communication with the market environment was analyzed. In the Serbian sample, we measured communication between companies and banks, competitors and business associations, while in the Montenegrin sample communication with the market in general and with banks was measured. As an indicator of frequency of nurturing relationships, the cumulative

rate of the responses "sometimes, frequently and always" was taken into account (Figures 1-3). Serbian companies maintain relations mostly with banks (87.5%), followed by competitors (81.3%) and business associations (67.6%).

When it comes to the Montenegrin sample, 90.7% of the companies maintain relationships with banks, and 90.8% of them with the market in general.

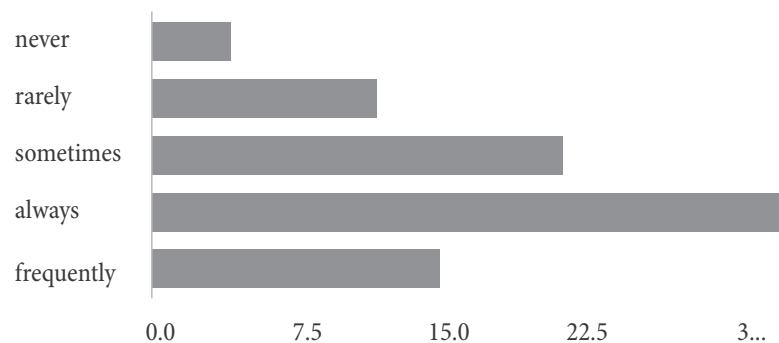
When economic sectors are taken into consideration, the following results have been recorded in Montenegro (Figures 4- 5). When frequency of communication is considered, small and medium-sized companies, as well as companies from the IT sector, are the ones that stand out.

**Figure 1: Serbia – Does your company nurture relationships with banks?**



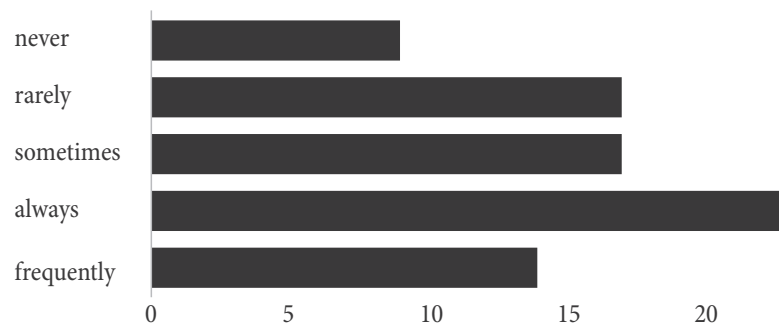
Source: The authors' calculation.

**Figure 2: Serbia – Does your company nurture relationships with competitors?**



Source: The authors' calculation.

**Figure 3: Serbia – Does your company nurture relationships with business associations?**



Source: The authors' calculation.

**Table 7: Montenegro – Does your company nurture relationships with the market environment?**

	Never %	Rarely %	Sometimes %	Frequently %	Always %
Banks	1.9	7.4	7.4	29.6	53.7
Market	1.9	7.4	9.3	31.5	50

Source: The authors' calculation.

Tables 8a and 8b show the extent to which companies received feedback from the market environment. As an indicator of the frequency of receiving feedback, the cumulative rate of the responses “sometimes+ frequently + always” was taken into account.

The results obtained show that Serbian companies receive more feedback from the market environment.

When asked the question “Are your public relations a product of your company’s activity, external agency or mixed activity?”, 70% of the Serbian companies answered that the relations were a product of their own activities,

22% of mixed activities, and 2.5% of an external agency. In the Serbian sample, as opposed to small and large companies, a higher response rate according to which public relations are product of mixed activity (42.1%), or product of an external agency (5.3%) was recorded in medium-sized companies (50-250 employees). When asked the same question in Montenegro, 81.5% of the companies claimed that public relations were a product of their own activities, 14.8% that they were a product of mixed activity, and 3.7% that they were a product of the activity of an external agency. It should be noted that there is a significant positive correlation in the Serbian sample between the variables “Are your public relations a product of your company’s activity, external agency or mixed activity” and “receiving feedback on the company’s communication messages from the non-market environment” (Table 9).

As it can be observed, correlation between the variables “Are your public relations a product of your company’s

**Table 8a: Serbia – Have you received feedback on your communication messages from the market environment?**

Never %	Rarely %	Sometimes %	Frequently %	Always %
3.8	13.8	31.3	38.8	12.5

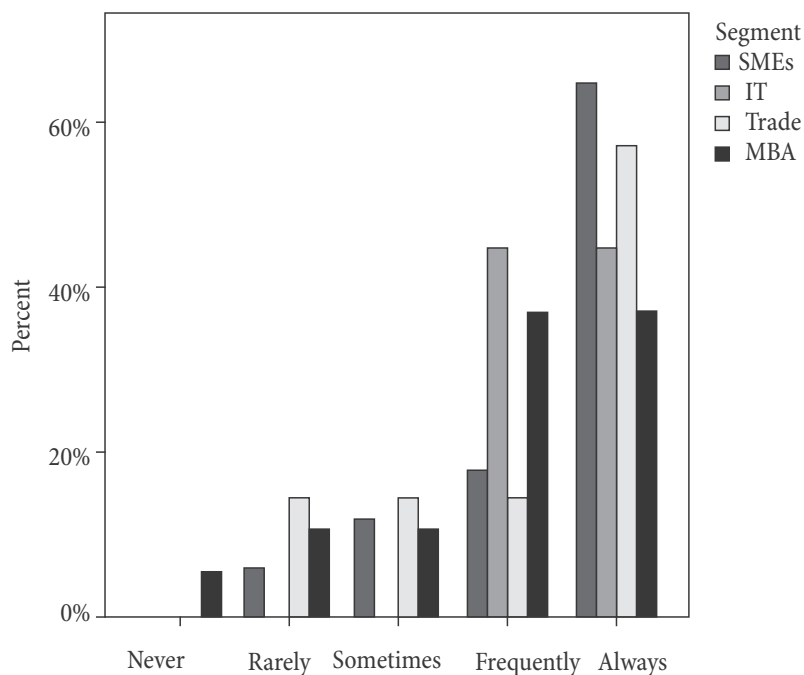
Source: The authors' calculation.

**Table 8b: Montenegro – Have you received feedback on your communication messages from the market environment?**

Never %	Rarely %	Sometimes %	Frequently %	Always %
1.9	44.4	31.5	16.7	5.6

Source: The authors' calculation.

**Figure 4: Does your company communicate with the market?**



Source: The authors' calculation.

activity, external agency or mixed activity?” and “receiving feedback on the company’s communication messages from the market environment” was not significant.

When asked “How do you address the public?”, 40% of the Serbian companies claim that they initiate debates, 36.3% try to solve social problems, while 23.8% have a newsletter that is open to communication. In Montenegro, 44.4% of the surveyed companies have a newsletter that is open to communication, 31.5% of companies try to solve social problems, while 24.1% initiate debates. In Serbia, 85% of the surveyed companies visit relevant websites, 10% indirectly comment on electronic news through social networks, while 5% actively post comments on the websites. In the Montenegrin sample, 66.7% of the respondents read the sites, 16.7% indirectly comment on electronic news through social networks, and 16.7% actively participate in the comments. According to Madhurd Chaturvedi [7], with the explosion of social media usage around the world, social media websites have become an important platform for businesses to engage with customers, prospective customers, employees and candidates. In order to interact with the existing and prospective customers, companies use external social media platforms. By using the social media, they reinforce brand

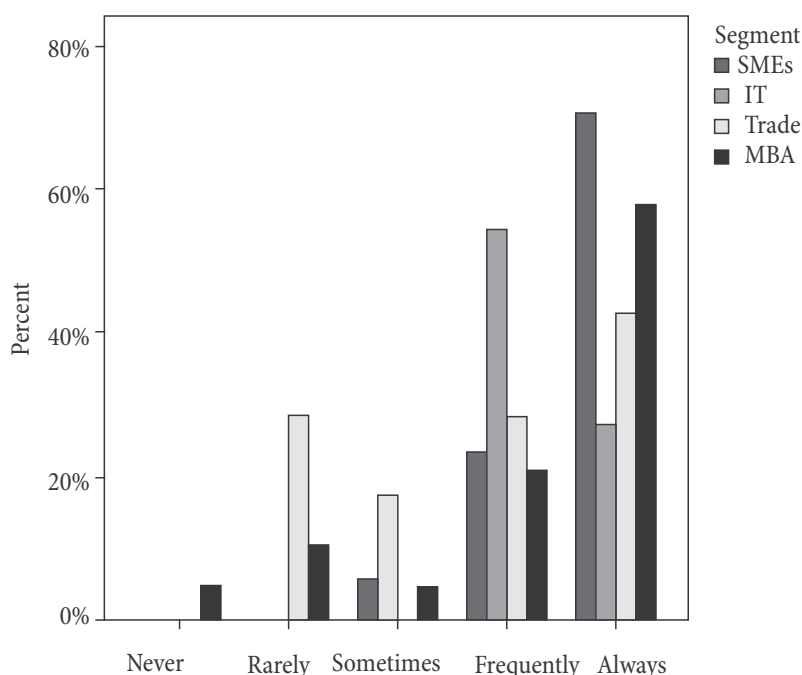
messaging, influence customer opinions, provide targeted offers, provide services to customers more efficiently and improve social responsibility (*ibid*).

### Conclusion

The research was carried out in order to detect the awareness among the Serbian and Montenegrin companies of the importance of creating non-market strategies [10]. Adapting to the institutional framework, augmenting or trying to transform the performance of the regulatory bodies, could create a value for the companies. However, the precondition is to manage effective ways of communication with the factors playing roles in the non-market environment. Communication could be seen as a starting point for a more integrative approach to this issue.

Having in mind the fact that only 26.6% of Serbian and 13.1% of the Montenegrin companies responded to a simple online questionnaire, it should be pointed out that there is a lack of trust among the respondents, which is often the case when relying on online questionnaires. On the other hand, a low response rate suggests that a large number of companies in both countries is not interested, not at all aware or purely uninformed of the importance

Figure 5: Does your company communicate with banks?



Source: The authors’ calculation.

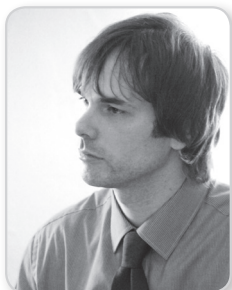


of non-market communication and corporate social responsibility. This indicates a significant qualitative difference compared to corporate management in the developed countries [15]. The research has shown that Montenegrin companies establish more frequent communication with the non-market environment. On the other hand, the Serbian companies receive more feedback from non-market institutions. This could be explained by a higher level of organization of Serbian non-market institutions, i.e. the quality of communication messages sent by the Serbian companies to the aforementioned institutions. It has been established that Montenegrin companies invite more frequently to their events representatives of business partners, regulatory bodies, local communities, governments and banks, and they record a higher attendance of those representatives at the events. In the Serbian case, it has been established that the frequency of invitations to such events and attendance of the representatives increase with the number of employees in the company. Large companies invite to their events more often, and representatives attend their events more frequently. Both in case of the invitations and the attendance, the most pronounced correlation with the variable “size of the company” is recorded in the case of government representatives. When it comes to nurturing relations with the market environment, Serbian companies communicate mostly with banks (87.5%) and competitors (81.3%), while the Montenegrin ones maintain relations mainly with the market in general (90.8%) and with banks (90.7%). When it comes to the method of addressing the public, a larger percentage of Serbian companies opens a debate and initiates resolution of a social problem, while a larger number of Montenegrin companies have a newsletter that is open to communication. More companies in Serbia read relevant websites, while a larger number of Montenegrin companies indirectly comment on electronic news on social networks and actively post comments on websites. In both countries, most of the companies use their own sectors and departments to manage public relations, while a very small number engages external agencies.

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# THE IMPACT OF BANK-SPECIFIC FACTORS ON THE LIQUIDITY OF COMMERCIAL BANKS IN SERBIA

Uticaj specifičnih bankarskih faktorana likvidnost komercijalnih banaka u Srbiji

## Abstract

The aim of this work is to identify internal factors that affect the liquidity of commercial banks in Serbia. Research results in the observed period from 2008 to 2013 using regression analysis indicate that the liquidity of banks is positively correlated with capital adequacy ratios and interest income to total assets ratio, while negative and statistically significant relationship exists between the indicators of liquidity and the size of the bank (measured by bank assets), expense ratios compared to interest income and return on equity ratios. This research represents the first step in achieving optimization model of liquidity, because many financial institutions, although profitable, are faced with the problem of maintaining liquidity. Research question that arises is the following: Which of the observed indicators affect the liquidity of commercial banks in Serbia the most? The survey used unconsolidated balances of 23 commercial banks in the period from 2008 to 2013. In particular, using ordinary least squares technique, author takes two different measures of liquidity risk into consideration. After obtaining an answer to the main question of this work regarding the key indicators of impact on the liquidity of the banking sector in Serbia, one can define the strategies and model for improvement of the operation of banks in financial markets. The results highlight that size, capitalization and profitability of banks can have an impact on liquidity risk management.

**Keywords:** *commercial banks, determinants of liquidity, liquidity ratios, financial indicators, regression analysis*

## Sažetak

Cilj ovog rada je da identifikuje interne faktore koji utiču na likvidnost komercijalnih banaka u Srbiji. Rezultati istraživanja dobijeni korišćenjem regresione analize, u posmatranom periodu od 2008. do 2013. godine, ukazuju na to da je likvidnost banaka u pozitivnoj korelaciji sa pokazateljem adekvatnosti kapitala i racijom kamatnih prihoda prema ukupnoj aktivi, dok negativna, statistički značajna veza postoji između pokazatelja likvidnosti i veličine banke (merene bankarskom aktivom), racija rashoda od kamata u odnosu na prihod od kamate i racija prinosa na kapital. Ovaj istraživački rad predstavlja prvi korak u postizanju optimizacije modela likvidnosti jer su mnoge finansijske institucije, iako profitabilne, suočene sa problemom održavanja likvidnosti. Istraživačko pitanje koje se nameće jeste koji od posmatranih indikatora najviše utiču na likvidnost komercijalnih banaka u Srbiji. U istraživanju su korišćeni nekonsolidovani bilansi 23 komercijalne banke u periodu od 2008. do 2013. godine. Konkretno, koristeći tehniku običnih najmanjih kvadrata, autor razmatra dve različite mere rizika likvidnosti. Dobijanjem odgovora na pitanje koji su ključni indikatori od uticaja na likvidnost bankarskog sektora Srbije, može se definisati strategija i model poboljšanja poslovanja banaka na finansijskom tržištu. Rezultati ističu da veličina, kapitalizacija i profitabilnost banke mogu uticati na upravljanje rizikom likvidnosti.

**Ključne reči:** *komercijalne banke, determinante likvidnosti, racio likvidnosti, finansijski indikatori, regresiona analiza*

## Introduction

In developing countries, such as the Republic of Serbia, banks are the most important financial institutions. By turning savings into investments, they stimulate economic growth, which is why it needs to be emphasized that their stability is one of the prerequisites for successful operation of the economy itself. Liquidity is the bank's ability to meet its financial obligations within maturity period. The risk of liquid funds represents bank's failure to respond to expected and unexpected current and future needs of cash flows. The basic rule for preserving liquidity is good synchronization of liabilities' maturity periods with debt collection maturity. Recent financial crisis has shown that the lack of liquidity in the banking system is the trigger of negative events. Under these circumstances, the identification of liquidity determinants is essential for a better understanding of the concept and also for the appropriate positioning of liquidity risk in relation to other financial risks. This paper is structured as follows: Section 2 provides an overview of the literature on the concept of liquidity, Section 3 describes data and methodology, as well as the econometric model, while Section 4 outlines empirical results, followed by the conclusion of this work.

## Literature review

Literature on determinants of liquidity provides limited empirical evidence on the impact of internal, bank-specific factors and external, macroeconomic factors on the bank's liquidity.

Dinger analyzed the liquidity position of foreign-owned banks in ten Central and Eastern European economies (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia) in the 1994–2004 period. The results showed that transnational banks hold a higher relative volume of liquid assets only in case of aggregate liquidity shortages. In normal conditions, the liquidity of banks operating in a single country is higher. This is caused by the fact that transnational banks have access to foreign sources of liquidity. Larger banks hold less liquid assets than smaller ones. Bank liquidity is

increasing with better capitalization, a higher interbank rate, a lower deposit rate, a lower growth rate of GDP and a lower GDP per capita [7].

Munteanu analyzed the factors that influence bank liquidity through a multiple regression model, a panel of 27 commercial banks in Romania over the 2002-2010 period, emphasizing the differences between the precrisis years (2002-2007) and the crisis years (2008-2010). The results reflect both common and differing determinants for the two liquidity rates analyzed and are consistent with the results in literature [10].

In his study, Vodová included Czech commercial banks in the period from 2001 to 2009, analyzing determinants of liquidity risk measured by various indicators of balance sheet. Study results show that the liquidity of commercial banks in the Czech Republic is higher when capital adequacy is higher and when interest rates on loans are higher. Measures of liquidity showed a positive relationship with capitalization and the size of the bank measured by bank assets. The author has also presented that larger banks maintained lower levels of liquidity which is positively correlated with the theory of "too big to fail". He also pointed out that the level of unemployment, interest margin, reference interest rate and profitability have no significant impact on liquidity of commercial banks in the Czech Republic [13].

In his work about the determinants of liquidity of commercial banks in Slovakia, Vodová included four specific and eight macroeconomic indicators in the period from 2001 to 2010. The research results have pointed out that liquid assets of the bank decreased with increasing profitability, higher capital adequacy ratio and size of the bank. Liquidity, measured by the share of loans in total assets and in deposits and short-term borrowings, increases with the growth of gross domestic product. Clients reduce their debt in the expansion phase and increase demand for loans in the recession phase. This fact is precisely the reason why banks tend to borrow more (and in this way reduce their own liquidity), even in the period of higher unemployment and lower profitability. Author also pointed out that interest rates (on loans, interbank transactions and monetary policy of interest rates), interest margin and share of problem loans and rate of inflation are not

statistically important for the liquidity of commercial banks in Slovakia [12].

In his work about the determinants of liquidity of commercial banks in Poland in the period from 2001 to 2010, Vodová included over thirty banks. The research results have pointed out that the liquidity of banks is strongly determined by economic conditions and consequences of the financial crisis. Liquidity of a bank decreases with increasing profitability, interest rate margins and the size of bank assets. Conversely, liquidity increases with the increase in capital adequacy rate and inflation rate [14].

In the study of the determinants of liquidity of commercial banks in Hungary in the period from 2001 to 2010, Vodová showed that the bank liquidity is positively related to capital adequacy ratios, interest rates on loans and interest rates on interbank transactions and correlates negatively with the size of the bank, interest margins, monetary policy of interest rates and interest rates on interbank transactions. The correlation between gross domestic product and banking liquidity is ambiguous [15].

Roman and Sargu included 11 banks in Bulgaria and 15 banks in Romania in their study of the determinants of liquidity risk of commercial banks in Romania and Bulgaria in the period from 2003 to 2011. They focused only on internal factors, as these can influence the overall liquidity of banking institutions. The obtained results underline that the capital adequacy ratio and the impaired loans to gross loans ratio have a statistically significant impact on the liquidity risk of the banks operating in Bulgaria and Romania [11].

## Data and methodology

For the purpose of this study, the following liquidity indexes were used. Ratio of funds provides information on available liquid funds to secure liquidity in case of withdrawal of deposits.

$$L1 = \frac{\text{cash} + \text{income} + \text{foreign exchange} + \text{reserves account} + \text{marketable securities}}{\text{total assets}}$$

Descriptive statistics indicates relatively extreme values of liquidity ratio (minimum and maximum) held

by the banks in the reporting period, from 2008 to 2013. That is to say, the lowest liquidity ratio in the reporting period amounted to 1.16, which UniCredit Bank made in 2008 and Credit Agricole in 2012, while the highest level of liquidity indicators amounted to 11.08 in Opportunity Bank in 2009.

$$L2 = \frac{\text{loans}}{\text{total assets}}$$

L2 is the share of loans in total assets. It shows that the percentage of assets is converted into illiquid assets, loans. High value of this indicator indicates the existence of lower liquidity potential for banks.

Descriptive statistics indicates relatively extreme values of the share of loans in total assets indicator (minimum and maximum) held by the banks in the reporting period from 2008 to 2013. The L2 indicator is actually inverse indicator of liquidity. Higher value of this indicator suggests lower liquidity of a specified bank. The highest indicator value of 85.72% belonged to Raiffeisen Bank in 2009. Raiffeisen Bank, as measured by assets, belongs to the group of large banks, as evidenced by the fact that large banks maintain lower liquidity buffer. In 2009, Postal Savings Bank, as measured by assets, belonged to the group of small banks and maintained this ratio at 20.78%, which suggests keeping high levels of liquidity buffers.

**Table 1: Descriptive statistics – L1**

N	Valid	120
	Missing	0
Mean		2.6349
Median		2.1150
Std. deviation		1.69988
Minimum		1.16
Maximum		11.08

Source: Author.

**Table 2: Descriptive statistics – L2**

N	Valid	120
	Missing	0
Mean		60.7589
Median		62.1700
Std. deviation		12.37069
Minimum		20.78
Maximum		85.72

Source: Author.

Negative correlation between the observed indicators confirms the theoretical assumptions that the increase in the share of loans in total assets influences the liquidity reduction, i.e. the indicator L1.

Many authors have analyzed determinants of liquidity risk. Four groups of influential factors were used as explanatory variables: macroeconomic factors, bank performance, bank characteristics and size of the bank [3], [8], [5], [1], [16] and [17]. In the analysis, we used variables that represent the impact of bank-specific performance on liquidity. Bearing in mind the conflicting objectives of liquidity and profitability, negative relationship between these performances is assumed. Banks are forced to seek the optimum which would be the result of a nuanced equilibrium of profit and liquidity rate. As regards the rate of return of commercial banks, we can state that Serbian commercial banks in 2013 had to engage more capital to earn the same as in 2008 or less.

Despite major losses, Serbian banking system is adequately capitalized and highly liquid. The problem in Serbia does not lie on the side of sources, but on the side of investments. Because of the extraordinary liquidity on the one hand, and higher credit risk on the other, with not so aggressive demand for loans, there is a downward trend in interest rates on deposits and savings.

Liquidity ratio measured by the ratio of loans in total assets indicates the percentage of the funds that the bank bound to illiquid assets or loans. Higher ratio indicates lower liquidity of the bank. Positive relationship of capital adequacy and liquidity is in connection with the assumption that banks with sufficient capital adequacy should be more liquid. If the banks see themselves as too big (size measured by total assets-action capital) to fail, their motivation for holding highly liquid assets of active capital is limited. Methodology applied in the analysis is

**Table 3: Correlations between L1 and L2**

	L1	L2
Pearson correlation coefficient	1	-.247**
Sig. (2-tailed)		.006
N	120	120
Pearson correlation coefficient	-.247**	1
Sig. (2-tailed)	.006	
N	120	120

\*\*Correlation is significant at the 0.01 level (2-tailed).  
Source: Author.

OLS (Ordinary Least Squares) regression used to identify determinants of liquidity of commercial banks in Serbia. The following formula was used for each liquidity ratio.

$$L_{it} = \alpha + \beta_1 CAP_{it} + \beta_2 ROE_{it} + \beta_3 CIR_{it} + \beta_4 YOA_{it} + \beta_5 TOA_{it} + \beta_6 EIR_{it} + \epsilon_{it}$$

Where:

$L_{it}$  – one of the two indicators

$X_{it}$  –vector of explanatory variables for bank i in time t

$\alpha$  – constant,

$\beta$  – coefficient which represents the slope of variables

$\epsilon_{it}$ – the error term

In order to investigate the influence of factors on liquidity, two multiple regression analyses for each indicator of liquidity were made. Table 5 provides an overview of internal variables that influence the dependent variable – liquidity. The basis for the selected independent indicators represents the previously conducted research on this topic by numerous authors. The table shows a list of variables that are used in the regression analysis.

Six internal banking factors were observed in this paper, as presented in the above table. It is expected that three factors should have positive influence on liquidity, while the rest of the above factors should have negative impact. The survey used unconsolidated balances of 23 commercial banks in the period from 2008 to 2013.

## Results and discussion

The correlation of the observed variables is calculated using 120 observations of internal independent variables that impact dependent variable –liquidity. A preliminary analysis was carried out to confirm the assumptions about normality, linearity and homogeneity of variances. The connections within the whole group of variables were investigated by Pearson correlation. Table 6 shows the correlation of variables.

**Table 4: Review of return of commercial banks**

ROE	2008	2009	2010	2011	2012	2013	Index
Banca Intesa	14.59	13.41	14.76	13.29	11.44	9.32	63.88
Komercijalna Banka	11.9	12.05	12.27	13.89	15.05	11.46	96.30
UniCredit Bank	17.44	14.23	14.4	13.57	11.17	7.68	44.04
Raiffeisen Bank	19.22	7.62	6.14	10.61	12.01	11.36	59.11
Societe General	10.88	8.68	8.13	5	0.3	3.64	33.46

Source: Author.

**Table 5: Variables definition**

Variables	Source	Expected impact on liquidity
<b>Independent variables</b>		
CAP: the share of equity in total assets of the bank	Annual reports	+
ROE: return on equity	Annual reports	-
CIR: the ratio of operating expenses to income from interest and fees	Annual reports	-
YOA: the ratio of interest income to total assets	Annual reports	+
TOA: logarithm of total assets of the bank	Annual reports	+
EiR: the ratio of interest expense to interest income	Annual reports	-
<b>Dependent variables</b>		
L1: liquidity cash ratio	Annual financial statements of commercial banks (2008-2013)	
L2: share of loans in total assets	Annual financial statements of commercial banks (2008-2013)	

Source: Author.

The study has shown that there is a strong positive and statistically significant relationship between the indicators of liquidity and capital adequacy amounting to 0.569. The size of a bank also represents a statistically significant liquidity indicator, which has a negative impact on liquidity. There is a strong negative link between liquidity and size of a bank presented in the value of -0.561. A negative and statistically significant relationship was observed between the ratio of interest expense to interest income and liquidity ratio (-0.306).

The data in Table 7 indicate that there is no problem of multicollinearity because the value of the VIF is lower than the reference value 10. The mean value of VIF is 1.972, below 10, which confirms the absence of multicollinearity and the VIF test for individual variables does not exceed

the maximum value 10. The values of the tolerance test and variance inflation factor in the VIF test are significantly below the critical values which is why it can be concluded that the assumption of the nonexistence of multicollinearity for model was not impaired. Further diagnostic tests are executed to ascertain the validity of the model.

This model explains 44.3% (41.3) of liquidity variance. The above table shows the highest importance of liquidity determinants measured by L1 liquidity ratios. Liquidity is determined by capital adequacy ratios and size of bank assets. If we measure liquidity L1, we find that the most significant liquidity determinants of commercial banks in Serbia are shown in Table 8. The size of the bank measured

**Table 7: Multicollinearity statistics - Tolerance test and variance inflation factor (VIF)**

Independent variable	Tolerance (1/VIF)	VIF(>10 collinearity problem)
CAP	.633	1.580
TOA	.352	2.838
ROE	.650	1.538
EiR	.567	1.762
YOA	.540	1.852
CIR	.442	2.262
		Mean VIF: 1.972

Source: Author, SPSS output.

**Table 6: Correlation of variables**

	L1	CAP	TOA	ROE	EiR	YOA	CIR
Pearson correlation	1	.569**	-.561**	-.073	-.306**	.348**	.142
L1 Sig. (2-tailed)		.000	.000	.425	.001	.000	.123
N	120	120	120	120	120	120	120

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Source: Author, SPSS output.

**Table 8: Determinants of the L1 liquidity ratio in Serbia**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Quality model
	B	Std. error	Beta			
(Constant)	12.383	3.991		3.103	.002	No. of obs 120
CAP	.064	.015	.377	4.267	.000	R-squared .443
TOA	-1.361	.425	-.379	-3.204	.002	Adjusted R-squared .413
L1 ROE	-.007	.007	-.090	-1.031	.305	F 14.969
EiR	-.009	.013	-.062	-.664	.508	p .000
YOA	-.004	.079	-.005	-.051	.959	Durbin Watson statistic:
CIR	-.003	.005	-.054	-.510	.611	1.860731

Source: Author, SPSS output.

by the logarithm of assets (-.379) and capital adequacy (.377) are variables that give statistically significant and unique contribution to the equation. Indicator of negative correlation between bank size and liquidity is statistically significant. Liquidity drops with the size of the bank. This means that large banks provide liquidity in the interbank market or rely on the help of a lender as a last resort. This view completely corresponds to the famous hypothesis: too big to fail.

Breusch-Godfrey serial correlation test was used to investigate the presence or absence of autocorrelation. The F-statistic and Obs\*R-squared probability values are higher than 0.05 (5% level of confidence), which indicates the absence of autocorrelation in the model.

The validity tests of the L1 model, i.e. the F, Durbin-Watson, ANOVA, VIF and LM, confirm that the results are robust. In addition, the adjusted R2 (41.3%) is relatively high, indicating that the explanatory variables have a significant ability to explain the change in the dependent variable.

Liquidity indicators of small and large banks in the reporting period from 2008 to 2013 are shown in Figure 1. Banks are classified as “large”, “small” and “medium-sized”. In this segment, conclusions were drawn regarding the legality of moving liquidity indicator at “small”, “medium-sized” and “large” banks. Differentia specifica according to which banks are classified as “small”, “medium-sized” and “large” is the size of assets. The rank (minimum and maximum value) for “medium-sized” banks is determined on the basis of the total share of assets in the banking sector, which ranges from 2% to 6%. The banks with the share of assets above the limit value for “medium-sized” banks (over + 6%) are classified as “large” banks. The banks whose assets are below the lower limit value for “medium-sized” banks (less than 2% of the total assets of the banking sector) have been marked as “small” banks [9, p. 73].

This study observes that, in the specified period of time, the number of large banks ranged from 5 to 6, medium-sized banks from 7 to 9 and small banks from

**Table 9: Breusch-Godfrey serial correlation LM test for L1 model**

F-statistic	0.794160	Prob. F(2,111)	0.4545
Obs*R-squared	1.692879	Prob. Chi-Square(2)	0.4289

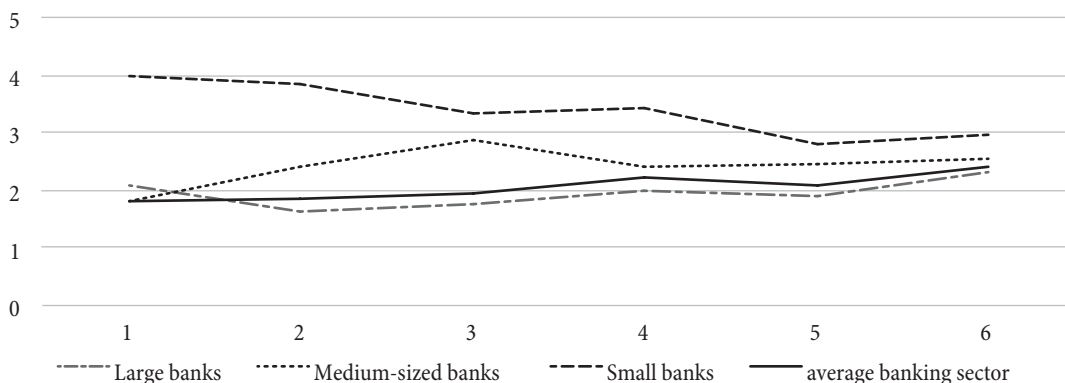
Source: Author, EViews output.

**Table 10: Determinants of L1 liquidity ratio in Serbia from 2008 to 2013**

Liquidity	'08	No.	'09	No.	'10	No.	'11	No.	'12	No.	'13	No.
Large banks	2.07	5	1.63	6	1.77	5	2	6	1.89	5	2.3	5
Medium-sized banks	1.81	7	2.42	8	2.85	7	2.4	7	2.47	9	2.56	8
Small banks	3.98	7	3.85	7	3.33	8	3.42	7	2.87	6	2.98	6
Average banks	2.68	19	2.67	21	2.77	20	2.64	20	2.44	20	2.62	19
Average banking sector	1.81	35	1.86	34	1.96	34	2.2	33	2.08	31	2.41	30

Source: Author based on Milošević Avdalović and Kalaš [9, p. 73].

**Figure 1: L1 liquidity - according to the size of banks in Serbia**



Source: Author based on Milošević Avdalović and Kalaš [9, p. 73].



6 to 8. Average liquidity ratios and the number of banks surveyed are shown in Table 10.

Figure 1 shows that small banks hold the largest liquidity buffer in the reporting period. The liquidity of large banks had the lowest, constantly below-average value in the banking sector (the exception being 2008). Mid-sized banks have to maintain their liquidity at and above the level of average liquidity indicator of the banking sector in Serbia. On the basis of the analysis, it can be concluded that large banks in Serbia strongly rely on the interbank market or on liquidity of the lender helping them.

The correlation for the observed variables was calculated from 120 observations for internal independent variables influencing the dependent variable – liquidity, measured by the loans to assets ratio. First, a preliminary analysis was carried out to prove that assumptions of normality, homogeneity and linearity of variances are confirmed. This indicator of the relation between loans and assets is actually an inverse indicator of liquidity. A large share of loans in assets indicates a lower level of liquidity. Pearson correlation investigated connections within the whole group of variables.

Table 11 depicts the correlation of variables. Correlation of variables has shown that there is negative and statistically significant relationship between the inverse indicators of liquidity L2 and capital adequacy and the ratio of operating expenses to income from interest and fees. The size of a bank and return on equity also represents a positive statistically significant inverse liquidity indicator, which has a impact on liquidity. Actually, this indicator can be interpreted as follows: with the growth of the size of bank assets and increase in profitability – ROE, the liquidity of the banking sector is reduced. Increase in bank liquidity follows the growth of capital adequacy and ratio of operating expenses to income from interest and fees.

If we measure L2 liquidity, we find that the most significant determinants of liquidity of commercial banks in Serbia are shown in Table 12. Capital adequacy ratio (-.477) and return on equity (.205) are variables that give statistically significant and unique contribution to the equation. The reason is that the joint contribution to the observed variables is included in the overall model. This model explains 30.3% of liquidity variance. Ratio of

**Table 11: Correlation of L2 variables**

	L2	CAP	TOA	ROE	EiR	YOA	CIR
Pearson correlation	1	-.455**	.255**	.196*	.168	-.005	-.221*
L2 Sig. (2-tailed)		.000	.005	.032	.067	.953	.015
N	120	120	120	120	120	120	120

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Source: Author, SPSS output.

**Table 12: Determinants of L2liquidity ratio in Serbia**

Model	Unstandardized coefficients		Standardized coefficients Beta	t	Sig.	Quality model
	B	Std. error				
(Constant)	68.294	32.489		2.102	.038	No.of obs 120 R-squared .303 Adjusted R-squared .266 F 8.787772 (p .000) Durbin Watson statistic: 2.288084
CAP	-.590	.122	-.477	-4.834	<b>.000</b>	
TOAlog	-.217	3.459	-.008	-.063	.950	
ROE	.113	.054	.205	2.106	<b>.037</b>	
L2 EiR	.113	.105	.113	1.079	.283	
YOA	.882	.645	.146	1.368	.174	
CIR	-.046	.041	-.133	-1.123	.264	

Source: Author, SPSS output.

**Table 13: Breusch-Godfrey serial correlation LM Test for L2 model**

F-statistic	1.728367	Prob. F(2,111)	0.1823
Obs*R-squared	3.624147	Prob. Chi-Square(2)	0.1633

Source: Author, EViews output.

loans to assets is determined by capital adequacy ratios and return on equity.

Breusch-Godfrey serial correlation test was used to investigate the presence or absence of autocorrelation. The F-statistic and Obs\*R-squared probability values are higher than 0.05 (5% level of confidence), which indicates the absence of autocorrelation in the model.

The validity tests of the L2 model, i.e. the F, Durbin-Watson, ANOVA, VIF and LM, confirm that the results are robust. In addition, the adjusted R2 (26.6%) indicates that the explanatory variables have a significant ability to explain change in the dependent variable.

The percentage of the share of loans in assets of large banks observed in the period from 2008 to 2013 was roughly the same, the average being 66.35%. A higher proportion of loans (illiquid assets) in total assets indicates that banks hold less liquidity. This indicator proves that small banks hold higher liquidity buffer compared to big banks.

Figure 2 shows that large banks have the largest relative share of loans in total assets. Big banks sell more

loans to medium-sized and small banks. Credit placements represent the most insolvent kind of assets and therefore this indicator can be taken as an inverse indicator of liquidity. A high share of loans in assets through credit risk can jeopardize the indicator of liquidity.

### Conclusion

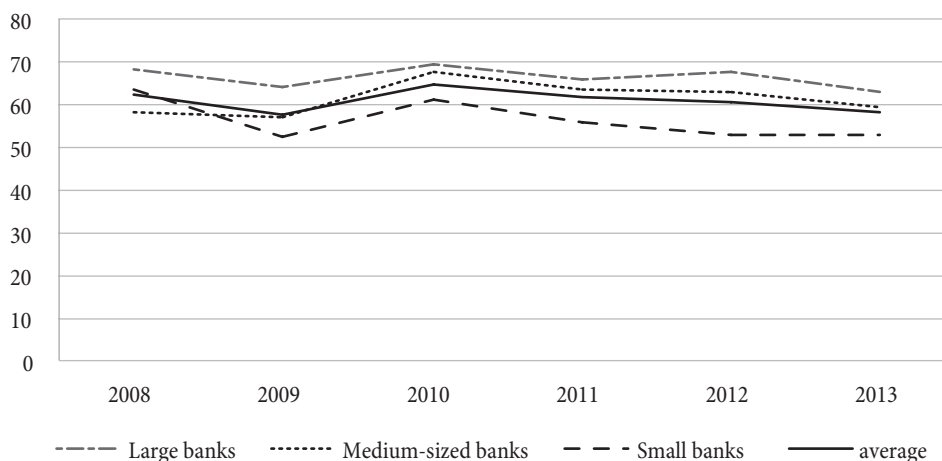
The aim of this study is to identify the determinants of liquidity of commercial banks in Serbia, using multiple regression analysis for two indicators, namely the cash ratio (liquidity ratio) and the loans in total assets ratio. The results highlight that size, capitalization and profitability of banks can have an impact on liquidity risk management. The results of the proposed model lead to the following conclusion: bank liquidity is strongly determined by the size of the bank’s assets. Liquidity decreases with the increasing size of banks: big banks actually rely on the interbank market or the help of a lender in the last instance, while medium-sized and small banks maintain

**Table 14: Analysis of the share of loans in total assets, as a measure of liquidity, and the size of bank assets**

Banks	Large	No.	Medium-sized	No.	Small	No.	Average
2008	68.28	5	58.13	7	63.48	7	62.24
2009	64.29	6	56.80	8	52.40	7	57.47
2010	69.38	5	67.51	7	61.15	8	64.51
2011	65.77	6	63.44	7	55.64	7	61.41
2012	67.44	5	62.61	9	52.83	7	60.80
2013	62.92	5	59.39	8	52.81	6	58.24
Average	66.35		61.31		56.39		

Source: Author.

**Figure 2: L2 - Loans in total assets ratio according to the size of banks in Serbia**



Source: Author.

larger liquidity buffer. Increase in the capital adequacy ratio has a positive impact on the liquidity of the bank, while the bank's profitability indicates a negative impact on the level of liquidity of the banks surveyed. The findings of this study are similar to the results of some variables utilized by Arif [2], Vodová [13], [14] and [15], Bonfim and Kim [4] and Cucinelli [6]. This study paves the way for more detailed studies into controlling liquidity risk in banks in Serbia. Further research may extend the proposed model to incorporate other causes of liquidity risk and economic factors.

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## EU BUDGET AND BUDGET OF SERBIA: IMPACT ON SERBIA'S ACCESSION TO THE EU\*

Budžet EU i budžet Srbije - uticaj na proces  
pridruživanja Srbije Evropskoj uniji

### Abstract

Our research is focused on identifying the European Union's budgetary policy and the fiscal rules that must be obeyed by the European Union (EU) member states in order to compare them with Serbia's fiscal policy. We want to see how the budget balance in the EU is being achieved, and to what extent Serbia follows the EU budget principles and how much support it receives from the Union on this path. The structure of revenues and expenditures of the EU budget and the budget of Serbia is also given. The first part of this paper discusses the changes in the budgetary policy of the EU, given that the global financial crisis has revealed significant weaknesses in the design and implementation of the existing economic governance in the EU, leading to the signature of the Fiscal Compact and creation of the European Stability Mechanism. The second part deals with elements and functions of the budget of Serbia and with fiscal responsibility. The Serbian budget is burdened with fiscal deficit and the accumulation of public debt. Serbia has introduced fiscal rules that are applied in the EU, but the same unfortunately have not been fully applied in Serbia. In the third part we examine the impact of the EU budget on Serbia's accession process through the Instrument for Pre-Accession Assistance (IPA), which European Union has allocated to the EU candidate countries, to help them reform and achieve European standards.

**Keywords:** *budget, EU, Serbia, fiscal rules, deficit, accession, IPA*

### Sažetak

Naše istraživanje je usmereno ka identifikovanju budžetske politike Evropske unije (EU) i fiskalnih pravila koje moraju poštovati države članice EU, kako bi ih uporedili sa fiskalnom politikom Srbije. Želimo da vidimo kako se ostvaruje budžetska ravnoteža u EU, kao i u kojoj meri Srbija prati budžetske principe EU i koliko podrške dobija od Unije na tom putu. Date su i strukture prihoda i rashoda budžeta EU i budžeta Srbije. U prvom delu rada sagledavamo promene u budžetskoj politici EU, s obzirom na to da je globalna finansijska kriza otkrila velike slabosti u projektovanju i implementaciji postojećeg ekonomskog upravljanja u okviru EU, te je zato potpisan Fiskalni pakt i kreiran Evropski stabilizacioni mehanizam. Drugi deo se bavi elementima i funkcijama budžeta Srbije i njenom fiskalnom odgovornošću. Budžet Srbije je opterećen fiskalnim deficitom i akumulacijom javnog duga. Srbija je već uvela fiskalna pravila koja se primenjuju u EU, ali koja nažalost nisu u potpunosti primenjena u prethodnom periodu. U trećem delu ispitujemo uticaj budžeta EU na proces pridruživanja Srbije kroz Instrument za pretpristupnu pomoć, koji je Evropska unija dodelila zemljama kandidatima za članstvo u EU, kako bi im pomogla u reformama i postizanju evropskih standarda.

**Ključne reči:** *budžet, EU, Srbija, fiskalna pravila, deficit, pridruživanje, IPA*

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## Introduction

The budget is a government document presenting data on government revenues and expenditures in a certain future period, most often over a one-year period (annual budget). The European Union does not have a usual government, like its member states have, but has a budget with a revenue and expenditure structure. In addition to the budget, European Union has the Multiannual Financial Framework, which represents an approximate or indicative overview of revenues and expenditures over the next several years. Due to this framework, it is known that the EU funding has been in order since 2013, and how it will look with all planned moves until the end of 2020.

The EU budget is a controversial instrument aimed at achieving an effective common economic policy. On the one hand, we have disputes over jurisdictions between the EU Council, the European Commission and the European Parliament debated in the preparation of the budget and content of the EU budget policy objectives and actions, and on the other hand, we have the problem of righteous financial distribution of burdens between the member states.

The fiscal policy of the EU (in contrast to the fiscal policy and public finances of the member states) deals primarily with the EU budget (its revenue and expenditure side in terms of the financial expression of complex relations between the EU and the member states) and taxes from the aspect of tax harmonization between the member states in order to achieve “the four freedoms” (free movement of persons, goods, services and capital).

However, the global financial crisis has revealed major weaknesses in the design and implementation of existing economic governance within the EU, and the Eurozone in particular. In response to the global financial crisis, the European Council adopted the Treaty on Stability, Coordination and Governance (TSCG) in the Economic and Monetary Union (EMU) also referred to as the Fiscal Compact. The main feature of TSCG is limiting the deficit: the rule of a balanced budget, the automatic correction mechanism, incorporation of these rules into national legislation and in the jurisdiction of the European Court of Justice. In line with the Fiscal Compact, the Eurozone

Fund has been established in the form of the European Stability Mechanism (ESM).

In a modern economy the budget has a great importance because of its many functions and areas of operation (economic, political and legal). Through the budget, redistribution and spending of a large part of the national income is carried out. Also, through the budget, the state undertakes numerous, often decisive actions in the development of the economy. One of the main goals, and also the most difficult problem facing the fiscal policy of every modern state, including Serbia, is achieving a balanced budget and then maintaining its balance.

In order to achieve a budget balance, the main principle of fiscal policy should be fiscal responsibility and fiscal discipline. Whether the principle of fiscal responsibility when determining, adopting and implementing the budget of Serbia (with a view to the EU budget) was honoured we will determine in the paper.

Also, the impact of the EU budget on the negotiations on Serbia's accession to the EU will be taken into consideration as well, since Serbia receives funds from the Instrument for Pre-Accession Assistance (IPA). This phase of IPA use is especially significant because it represents a kind of preparation for the EU membership. EU funds are intended for EU candidate countries, to help in the reform process and to achieve European standards. IPA establishes a strong link between the budgetary and strategic aspects of enlargement.

## EU budget

The first EU budget (European Economic Community budget) was small and its primary role was to cover administrative needs of the EU (community). However, as the EU expanded and the member states became increasingly dependent on each other, the role of the budget also grew. The funds that went into the budget and the fields of its application grew as well.

Today, the EU budget policy works on different bases in relation to national policies. This means that member states simultaneously implement and finance their economic and political activities within two different public finance systems (national and European). Namely, EU membership

imposes on member states an obligation to finance a common EU budget. In accordance with the established mechanism for the functioning of the EU public finance system, each member state renounces a certain portion of its national revenues and invests them in a common EU budget, from which common EU policies are financed.

The volume of EU budget revenues and expenditures was not linked to the Union's need to influence economic life and (until recently) the economic wealth of member states (agriculture is the only exception). Anyway, if the EU is unable to increase or significantly reorganize spending, then it should continue attempts to harmonize its own expenditure with the member states' expenditures [17].

The best solution would probably be that instead of choosing economic policies (areas for intervention) that can fit into limited resources, the EU should locate areas that need to be influenced at the EU level and only then create the necessary resources.

### The relationship between the EU budget and the budget of the member states

The European Union funding is closely linked to the relations between the EU and the member states and the specific nature of EU as a supranational institution. These relations are based on the application of the transposition principle, the principle of subsidiarity and the principle of proportionality of the EU competences [22, p. 74].

The transposition principle implies that the EU competencies have been derived from the competence of the member states and are generally limited by exclusivity. Exceptions to this rule have been made in agriculture, transport and international trade. In the internal market, the EU competences are significantly limited and national legislation has a primacy.

The principle of subsidiarity means that every public function should be done by the lower level of government, if it is more efficient, and if this creates the lowest possible administrative costs.

The principle of proportionality is governed by the EU enforcement mechanisms. This principle refers to the proportionality between the goals that are to be achieved and the means used in achieving these objectives.

Most of the EU jurisdictions belong to a group of non-exclusive and joint competencies with member states. A group of joint competences has a residual nature, and the so-called competencies that serve as a support to the competencies of member states are carried out in areas such as: industry, protection and promotion of citizens' health, education, youth and sport, culture, citizens' protection, etc.

For these reasons, the EU budget has very specific sources on the revenue side, different from the taxes for the member states' national budget. On the expenditure side of the EU budget there are items for satisfying public needs which can essentially be satisfied at the national level, but in the interest of all member states are met at a supranational level.

What is the role of the fiscal policy of the EU and the member states then? The main task of the member states' fiscal policy is to establish a balance between, on the one hand, the need for the flexibility of the national budget and meeting the public needs of their own citizens, and, on the other hand, the obligation to prevent the negative effects of national budget deficits from spreading to other member states. At the EU level, member states do not have the tools to counter negative economic shocks, so the national budgets must be flexible enough to play the role of an automatic stabilizer when the country is in a state of recession, whereby that role should be such as not to endanger business flows in other member states. In addition, although it does not have a centralized budget because it is not a state, the EU as economic integration and a supranational institution, has the interest to form its own budget from which it will meet agreed public needs at the EU level.

Fiscal policy and public finances of the European Union (as opposed to the fiscal policy and public finances of member states) deal with:

- The EU budget and its revenue and expenditure side in terms of the financial expression of specific and complex relations between the EU and the member states, and
- Taxes from the aspect of tax harmonization between member states in order to achieve four proclaimed freedoms in the EU, and not as public revenues of the EU budget.

## EU financial perspective

The financial perspective represents the framework for the EU spending over a certain perennial period. The financial perspective is determined on the basis of the inter-institutional agreement of the EU Council, the European Parliament and the European Commission, which marks the maximum amounts and structure of expenditures in a given period.

The European Commission is finishing the financial perspective annually to take into account prices and GDP (Gross Domestic Product) growth in the EU. The financial perspective does not represent a multi-annual budget since the annual budgetary procedure is crucial in determining the actual amount of expenditures and the structure of the various budget chapters. To date, 5 inter-institutional agreements have been concluded:

- Financial Perspective 1988-1992 (Delors I Package),
- Financial Perspective 1993-1999 (Delors II Package),
- Financial Perspective 2000-2006 (Agenda 2000),
- Financial Perspective 2007-2013, and
- Financial Perspective 2014-2020.

The multi-annual financial framework aims to ensure that costs go within the foreseen, reminding the EU of the constraints on its own sources of funding.

The EU Council, at a meeting held on 8 February 2013, reached an agreement on the multi-annual financial framework covering the period 2014-2020. The agreement reached at the EU Council limits the maximum possible spending for 28 countries of the European Union to the amount of 959.99 billion euros (of commitments), representing 1% of the gross national income of all EU member states. Compared to the financial framework for the period 2007-2013, it can be concluded that the total expenditures were actually reduced by 3.4% in real terms, which is a precedent in the history of the EU [10].

### The Fiscal Compact and the European Stability Mechanism as a response to the global financial crisis

The global financial crisis has revealed major weaknesses in the design and implementation of existing economic governance within the EU, and the Eurozone in particular.

The EU Council in December 2011 adopted a comprehensive package of measures that should provide a response to the current crisis, as well as to prevent the emergence of new crises in the future.

The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union known as the “fiscal intergovernmental agreement” or “fiscal compact” was adopted on 2 March 2012, and it was signed by 25 EU member states (United Kingdom and the Czech Republic did not sign). The intention is to join this Treaty with existing EU Treaties. The main features of the Fiscal Compact are [11]:

- Limiting the deficit - the rule of a balanced budget (the so-called “golden rule”). This requires that the national budgets of the member states be in balance or in surplus, and are considered to have been achieved if their annual structural state deficit does not exceed 0.5% of the nominal GDP. A temporary exception from this “balanced budget rule” is permitted only in exceptional economic circumstances, for example, during serious deterioration of economy. If the government debt is well below 60% of GDP, the deficit limit can be set at 1% of GDP;
- Automatic correction mechanism. If a member state deviates from a balanced budget rule, an automatic correction mechanism will be launched. The concerned member state will have to correct the deviations in a certain period of time. This mechanism will fully respect the prerogatives of national parliaments;
- Incorporation of these rules into national legislation. Member states are required to include a request for budget discipline and a mechanism for automatic correction in their national legal systems, preferably at the level of the Constitution;
- The jurisdiction of the European Court of Justice. In the event that a member state does not include in its legal system a balanced budget rule and a correction mechanism, the European Court of Justice will be empowered to make a decision on the matter.

The Fiscal Compact came into force on 1 January 2013, since it was also ratified by Finland as the 12th member state of the Eurozone. This treaty is legally binding as an international agreement and is available for signing to EU member states that were not initially signatories.

In line with the new Fiscal Compact, a new Eurozone fund - the European Stability Mechanism was created. Decision-making in the ESM is simplified in emergency situations so that 85% of the capital owners' votes are needed to help countries in trouble. This should prevent smaller countries from blocking or slowing down emergency measures, as it previously happened in the case of the Greek government-debt crisis. It is envisaged that the member states of the Eurozone will pay in 80 billion euros in cash and 620 billion euros in the form of committed callable capital. With this capital in the background, ESM will sell bonds in the capital market, and with the received money it will help the countries in need. An important step towards the full functioning of this mechanism is its recognition in the global capital market [12]. It will be possible to release 500 billion euros, and the remaining 200 billion euros serves as an additional guarantee to investors that their money is well invested. The largest share in ESM, as the largest country in the Eurozone, has Germany with 27% or 190 billion euros. However, the road to Germany's consent to giving guarantees in such a large amount was not easy. In addition to the German Bundestag, Germany's participation in the ESM had to be confirmed by the German Constitutional Court [13].

How and to what extent the fiscal rules apply in Serbia, as a candidate country for the EU membership, will be analysed in the next chapter of this paper, especially given the fact that the fiscal rules applied in the EU will be binding for Serbia when it becomes a full member of the European Union.

### Financing the EU budget

Today, the EU financing system consists of several own resources and resources from other sources. In line with the EU Council decision, the EU's own resources are [9]:

- Traditional own resources (duties and charges on agricultural products). The characteristic of these revenues is that member states pay to the EU budget only 75% of the funds collected, while the rest (25%) belongs to the national budgets in a form of compensation for the costs of collection;

- VAT-based own resources. This resource is charged on the so-called "abstract" harmonized VAT base of all member states. The abstract base is calculated in order to compensate for the differences in the national VAT regimes since no harmonization of VAT was performed at the EU level. Also, the unique percentage rate, the so-called "obligatory rate" is calculated on the limited and harmonized VAT bases of all member states and cannot exceed 0.5% of the base;
- GNI (Gross National Income)-based own resources. Unlike VAT-based own resources, GNI-based own resources is charged as a single rate in proportion to the GNI of a single member state. There is no specific restriction mechanism applied here, the only limitation is the limitation of total own resources to 1.24% of GNI in the EU.

Member states are obliged to transfer funds generated by collecting their own resources into the EU budget. If they avoid doing so, the European Commission can file a special lawsuit within the European Court of Justice whose decisions always contain high penalties for the accused country or countries<sup>1</sup>.

In addition to the EU's own resources, the budget also belongs to the so-called miscellaneous revenue that is comprised of: fines, revenues generated by administrative activities of the EU institutions, contributions related to activities in the European economic area and other revenues. Although in the group *miscellaneous revenue* there is more income than in the group *own resources*, from the first group the EU budget accounts significantly less funds than from its own resources. This is, at the same time, the main reason why it is usually talked only about own resources as a source of EU budget funding.

Also, one of the elements of the EU's own resources system is the United Kingdom (UK) "abatment", "rebate" or "correction" mechanism. This mechanism, in effect since 1985, lowered the UK's contribution to the EU budget by reimbursing 66% of the country's budgetary

<sup>1</sup> Article 228 of the Treaty establishing the European Community provides that if a member state fails to fulfill its obligation to pay contributions to the budget, a suit may be brought against it before the European Court of Justice, requesting that the accused state pay a one-time fine.



imbalance (the difference between payments and receipts), but for the same amount increased the payment of other member states (with the exception of Germany, Austria, Netherlands and Sweden) [16].

Bearing in mind the evolving nature of the EU's own resources system, as well as many changes made in the past few years, general conclusion is that the current system abounds with shortcomings. First of all, it is very complex and non-transparent. The EU is mainly financed by VAT and GNI revenues, which, in fact, represent a form of contributions paid by member states. Therefore, there is no direct link between the EU budget and the EU citizens, which leads to limiting the financial autonomy of the EU. Also, the current system is very inefficient. The only real EU revenues are traditional own resources, which have a direct impact on relative market prices and allocation decisions. One more disadvantage is that the current financing system significantly distorts equality among member states. This is mainly due to the application of the general compensation mechanism and the reduction of the participation that individual member states pay on this basis [5].

### EU budget revenue for 2017

The EU's total budget revenue for 2017 amounts to 134.5 billion euros (Figure 1), and includes an inflow of funds from [7]: Traditional own resources of 21.5 billion euros (16%), VAT-based own resources of 16.6 billion euros (12%), GNI-based own resources of 93.6 billion euros (70%), and Miscellaneous revenues of 2.8 billion euros (2%).

Revenues are budgeted in a manner that is proportional to the wealth of each member state. UK, the Netherlands,

Germany, Austria and Sweden, however, have some benefits when finalizing their contributions. On the other hand, the EU funds are "converging" towards member states according to the priorities defined within the EU. Fewer prosperous member states receive proportionately more resources than those rich, so more countries receive more money from the budget than they give. Some early analyses were made about what consequences Brexit will have on the future EU budget [16].

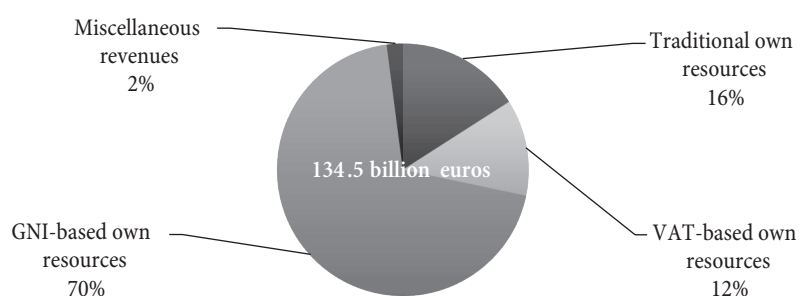
### EU budget expenditures for 2017

The total EU budget expenditure for 2017 amounts to 134.5 billion euros (Figure 2), and that includes funds allocated for [7]: Competitiveness for growth and jobs; Economic, social and territorial cohesion; Sustainable growth: natural resources; Security and citizenship; Global Europe; Administration; and Other special instruments.

By allocating funds for Competitiveness for growth and jobs in 2017 in the amount of 19.3 billion euros (14%), the EU member states have decided to devote most of the joint forces to creating a more economically sustainable development, which has become one of the EU's top priorities. The economy of the European Union has to be more competitive, and less developed regions have to catch up with others. Achieving long-term sustainable development depends on increasing the EU's development potential.

The allocation for Economic, social and territorial cohesion (linkage) in the amount of 37.2 billion euros (28%) shows that the EU member states are helping regions to a lesser extent, in order to transform their economy towards achieving global competitiveness. Innovation

**Figure 1: Structure of the EU budget revenue for 2017**



Source: Authors [7].

and the knowledge economy provide a new framework for the opportunities for launching economic growth in these regions.

Allocating funds for Sustainable growth: natural resources, in the amount of 54.9 billion euros (41%), are due to geographical and climatic diversity. EU countries produce a large number of different agricultural products, which European consumers can buy at reasonable prices. EU efforts in this field have two objectives: first, what products must correspond to what consumers want, including a high degree of safety and quality of agricultural products, and second, from the production point of view, manufacturers should plan and adapt products according to customer requirements, but in line with the environment, through the inclusion of direct environmental protection measures, the restructuring and diversification into the rural economy and the promotion of sustainable fishery. Animal diseases, oil spills and air pollution do not stop at national borders. Such threats require action in different fields and in a large number of countries.

Then, the allocation funds for Security and citizenship in the amount of 3.8 billion euros (3%) is for the fight against terrorism, organized crime and illegal immigration, because it is more effective if the EU member states share information and act together.

The allocation funds for Global Europe in the amount of 9.5 billion euros (7%) is because the impact of the EU funds does not stop at external borders. In many cases, the EU budget provides the necessary assistance in the emergency situations like natural disasters. In other cases, it is a long-term help in achieving prosperity, stability and security.

The allocation funds for Administration in the amount of 9.4 billion euros (7%) covers the costs of staff salaries and construction of all EU institutions, including the European Parliament, the European Council, the European Commission, and the European Court of Justice.

By allocation for Other special instruments in the amount of 0.4 billion euros (which are less than 1%), other costs are covered.

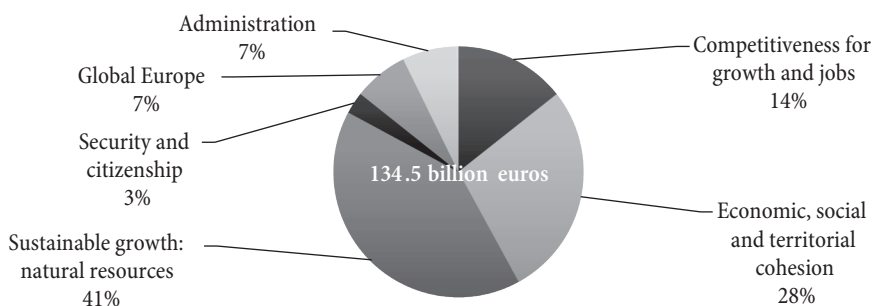
Almost half of total EU budget expenditures relate to sustainable growth: natural resources due to the fact that the common agricultural policy is one of the most important EU policies. On the other hand, allocations for administration are the smallest, but still very important, because without it functioning of the European Union would not be possible.

### Budget of Serbia

As part of the Serbia’s public finance system and policy reform on the road to the EU, in the middle of 2009, a new Law on the Budget System was adopted and on its basis a number of bylaws were adopted. That fully rounded up the matter of the budget system in Serbia.

With the aforementioned law regulating the planning, preparation, adoption, control and budget revision, the budget system in Serbia began to receive outlines of a developed market economies budget. Based on the fact that most European countries develop and improve their budget systems for one hundred years or more, it is understandable that in Serbia this is a system that is only being built and is undergoing many difficulties, ranging from inadequate personnel to the absence of a clear strategy for its development.

Figure 2: Structure of EU budget expenditures for 2017



Source: Authors [7].

## Elements and functions of the budget of Serbia

Following general activities that precede the formation of a budget, the identification of available resources and needs is the first of a number of practical activities that are carried out in the procedure for budget adoption.

Based on statistical data, sources are formed and potential resources are estimated. Serbia's resource for budgetary purposes is located in: taxes (VAT, property tax, corporate income tax, personal income tax), excises (special types of public revenues, in the literature referred to as "taxes on luxury"), and contributions for compulsory social security and customs [19].

Therefore, the available resources come from the economic activity of enterprises, i.e. from each activity of traffic and the transfer of values, rights and licenses between individuals. Based on the results of the previous year and the values of individual volumes, turnover and growth development projections for the next year, the planned budget inflows are formed, which are constantly monitored and, if necessary, their reassessment is carried out. The other side of the budget is for the use of budget funds. This side of the budget represents the needs of society and state institutions so that they can function. It is called public expenditures. Public expenditures are based on the financing following activities and functions: activities of public administration bodies and local self-government, activities of the Ministry of Interior, military activities, activities of public enterprises, health sector activities, education activities, etc. Based on the needs of individual budget users, the demand side of the budget is formed [19].

If there are significant differences between the amount of resources and needs, there is a deficit (resources are smaller than needs) or a surplus (resources are higher than needs) of the budget. If there is a budget deficit, it is necessary to determine in the process of budget adoption the ways to finance this deficit [21]. If a surplus is planned in the budget, it is transferred in the next year and its use is defined, most often in capital investments and formation of investment zones.

Since resources in modern conditions are limited and their effective use is imperative, it is completely logical

and understandable that in the set of all needs it is not possible to satisfy everything. It is necessary to prioritize among all needs and to choose the ones that are necessary and those that will lead to the fulfillment of the highest number of goals that are conditioned by the budgetary, economic and development policies in Serbia.

There are a number of economic functions of the modern state, but the most important ones are as follows: providing conditions for the best inflow of investments, adequate social policy (employment policy, social health care policy, etc.), then appropriate tax policy, which affects redistribution of income for the benefit of the poorer population through impact on consumption [23].

The advanced economic functions of the modern state are mainly incorporated into the Fiscal Strategy of the Government of the Republic of Serbia for 2017 with projections for 2018 and 2019, where, in accordance with the fiscal balance rule, fiscal consolidation will be focused on the limitation of current budget expenditures, in the state sector and pensions, while creating a space for increasing public investment. At the same time, the measures for the protection of the most vulnerable parts of the population will be strengthened through dedicated programs. By reducing the current consumption of the state sector, a room for maintenance and then an increase in public investment for the next medium-term period is created. Bearing in mind the limited resources, investments of national importance will have special significance in the planning of investments in the medium-term.

## Fiscal policy in Serbia

Uncontrolled fiscal deficits and the accumulation of public debt endanger economic stability, development prospects of the state and the well-being of future generations. Responsible fiscal policy is transparent, predictable and takes care of fiscal risks [24].

The effects of fiscal policy depend on how the public assesses the government's long-term policy. That means, if the government permanently increases public spending and fiscal deficit, the public can expect a significant tax increase in the future, which leads to a reduction in the expected future income of the population (wealth), and

consequently the current private consumption (net effects of fiscal expansion can be restrictive). Otherwise, if the government reduces public spending and if the public estimates that this is a permanent change of policy, the expected future income of the population (wealth) increases, private consumption and total domestic demand increases (the net effects of fiscal restriction can be expansive) [15].

The expectations of the private sector can significantly reduce, neutralize or even change the direction of the impact of fiscal policy (instead of expansionary, there are restrictive effects and vice versa). Given that the behaviour of the private sector depends on expectations, the government can try to manipulate expectations. If the Government violates the promises, the public will expect future violations of the promises, even when the Government really intends to implement them. In order to avoid the problem of time inconsistency in the realization of economic policy, it is necessary for the Government to commit to a certain type of policy. The obligation is assumed by the adoption of a particular law or by imposing certain restrictions on economic policy in the Constitution: it is forbidden that the Central Bank directly credits the state, it is forbidden for the Government to influence the monetary policy, the possibilities for the change of the management of the Central Bank are strictly restricted, limiting the maximum size of the public debt, limiting the maximum fiscal deficit, or the average fiscal deficit during the economic cycle is determined, and so on. In order for the legal provisions to work on expectations, it is necessary that the Government consistently implement the adopted rules over a longer period of time, to gain public confidence.

Fiscal rules should be general in order to allow different governments to implement different policies, therefore fiscal rules limit the basic aggregates: debt (in Serbia, public debt is limited to 45% of GDP), deficit (in Serbia, the deficit is limited to 3%), total expenditures and revenues, while the structure of revenues and expenditures is a matter of discretionary policies of different governments, although discretion is limited by other laws (in Serbia less than 20% of expenditures are discretionary) [24].

Fiscal rules have, on average, improved the fiscal performance of the countries in which they are applied,

and the importance of introducing rules is higher in developing countries, including countries in transition in which the institutions are weak, which was the case in Serbia. The main reasons for the introduction of fiscal rules are: relatively weak institutions, the existence of broad coalition governments, and the existence of the risk of excessive public debt growth. The introduction of fiscal rules is certainly part of the process of European integration (there has been a sharpening of EMU conditions after the experience with Greece).

Improving fiscal procedures introduces a medium-term horizon in fiscal policy where the government is obliged to: deliver the medium-term objectives and guidelines of economic and fiscal policy to the Parliament and the public, to publish medium-term expenditure frameworks, to quantify fiscal risks, and to analyze the fiscal implications of economic policies and reforms.

In many countries where there are fiscal rules, a fiscal council has been formed. In Serbia, the Fiscal Council and fiscal rules were established in October 2010 with the amendments to the Law on the Budget System. The new institution and new principles in the fiscal system of Serbia should help to achieve fiscal and financial stability, transparency and predictability. The mission of the Fiscal Council is to evaluate the credibility of fiscal policy from the aspect of respecting established fiscal rules and to ensure the publicity and accountability in the conduct of fiscal policy. Fiscal Council should improve the culture of fiscal responsibility in Serbia, give independent analysis of fiscal policy and foster expert discussions on fiscal policy. Serbia will be obliged, when it becomes a full member of the EU, to implement the rules prescribed by the EU fiscal intergovernmental Regulation No. 472/2013 [11], and in particular:

- The rule of a balanced budget (limiting the deficit in the amount of 0.5% of nominal GDP), and
- Mechanism for automatic correction of deviations from a balanced budget (EU recommendation is to introduce this mechanism at the level of the Constitution).

The Serbian Law on the Budget System stipulates similar fiscal rules, as well as the rules that apply in the EU, but the same unfortunately have not been applied fully

in Serbia, which will be shown in details in the following part of this paper.

### Serbia's budget revenues and expenditures in the period 2006-2017

This period was taken as the subject of the analysis, given that the budget of Serbia was in surplus only in 2006, while in the remaining years it was in a big deficit, which tells us that Serbia in the period from 2007 to 2017 did not comply with the fiscal rules prescribed by the Law on the Budget System (Table 1).

By analyzing the budget, we can conclude that the budget revenues and expenditures, in the observed period, were constantly increasing, that only in one year a budget surplus was achieved, and that in the 2006-2017 period a total deficit of 1,088 billion dinars was accumulated, which was financed through various loans on the domestic and foreign markets (Figure 3).

Also, by analyzing the Law on the Budget of the Republic of Serbia for 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016 and 2017, we can conclude that Serbia in the observed period conducted a mainly expansive fiscal policy, with constant growth of external

(and internal) debt. In the first year of the observed period, a surplus was achieved because the revenues from privatization represented a significant item in the total budget revenues, while in the subsequent years due to the lack of revenues from privatization and the reduced interest of foreign investors (due to investments risks), lack of capital and the global economic crisis, the budget revenue was reduced. In addition to these macroeconomic indicators, a significant element of the Serbia's budget is expenditure for government investments, through a national investment plan. This specifically implies an increase in the volume of investments in transport infrastructure, education, science and technology, as well as the establishing of industrial zones (which is expected to accelerate the attraction of foreign direct investment, employment, GDP growth and, consequently, export growth), as the most important macroeconomic indicators [1].

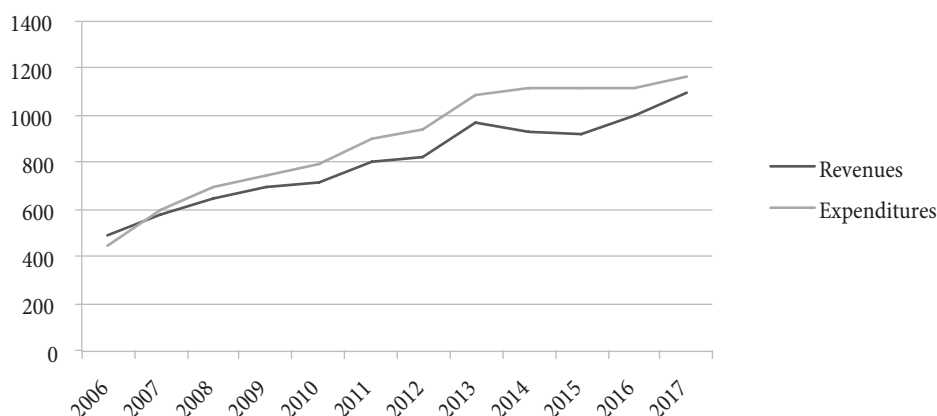
Growth in budget revenues came from (apart from privatization) growth in consumption and growth in economic activity in Serbia. We can notice that Serbia's budget revenues (and expenditures) more than doubled for the 2006-2017 period. It means that the budget and its constituents grew more than 10% per year, while the economy and production grew by an average of 1.7% [20].

**Table 1: Overview of Serbia's budget revenues and expenditures in the 2006-2017 period in billions of dinars**

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenues	488	582	651	699	715	805	824	966	930	925	997	1,093
Expenditures	448	596	696	749	797	899	940	1,088	1,113	1,116	1,119	1,162
Deficit/Surplus	40	-14	-45	-50	-82	-94	-116	-122	-183	-191	-122	-69

Source: Authors [26].

**Figure 3: Growth of Serbia's budget revenues and expenditures in the 2006-2017 period in billions of dinars**



Source: Authors [26].

This information clearly tells us that the expansive fiscal policy was carried out during the observed time interval. Since this type of economic policy must be coordinated and given that in the course of one economic cycle (from 3 to 5 years) certain results can be achieved, in the absence of such results we can conclude that the elements of the budget were created in the wrong way. Most important events in this period were privatization on the revenue side, and costs of public enterprises restructuring on the expenditure side. Therefore, we can conclude that in the observed period, Serbia did not keep fiscal policy in line with the principles prescribed by the Law on the Budget System.

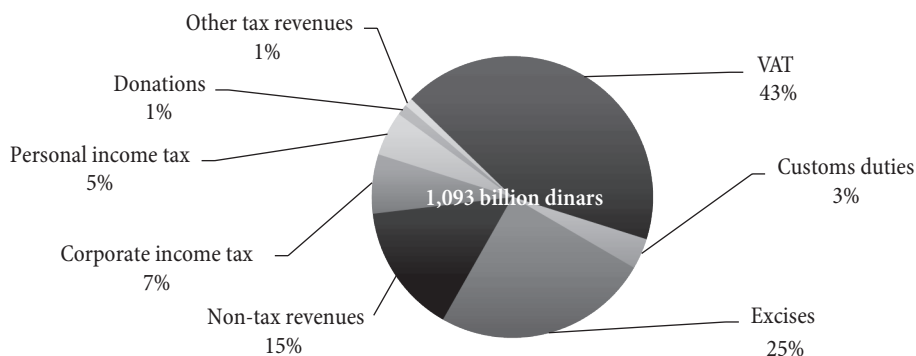
### Budget revenues and expenditures of Serbia for 2017

It should be emphasized that the total Serbia's budget revenues for 2017 [25] are nominally higher by 9.6% and amount to 1,093 billion dinars (Figure 4), in comparison to the total budget revenues in 2016; while the total Serbia's

budget expenditures for 2017 are nominally higher by 3.8% and amount to 1,162 billion dinars (Figure 5), compared to the total budget expenditures in 2016. Serbia's total budget revenues for 2017 include the inflow of funds from [25]: VAT in the amount of 466 billion dinars (43%), customs duties in the amount of 39 billion dinars (3%), excises in the amount of 271.5 billion dinars (25%), non-tax revenues in the amount of 163 billion dinars (15%), corporate income tax in the amount of 74.5 billion dinars (7%), personal income tax in the amount of 56 billion dinars (5%), donations in the amount of 13 billion dinars (1%), and other tax revenues in the amount of 10 billion dinars (1%).

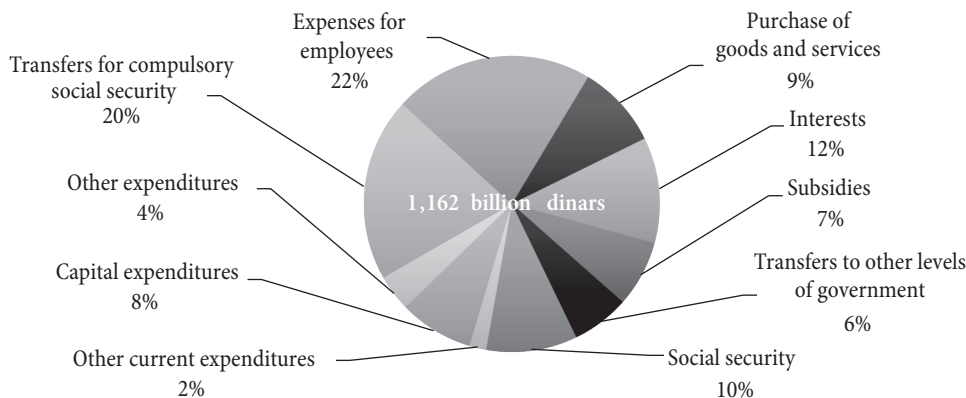
Serbia's total budget expenditures for 2017 include funds allocated for [25]: purchase of goods and services in the amount of 106 billion dinars (9%), interests in the amount of 134 billion dinars (12%), subsidies in the amount of 84 billion dinars (7%), transfers to other levels of government in the amount of 73 billion dinars (6%), social security in the amount of 116 billion dinars (10%),

Figure 4: Structure of budget revenues of Serbia for 2017



Source: Authors [25].

Figure 5: Structure of budget expenditures of Serbia for 2017



Source: Authors [25].

other current expenditures in the amount of 22 billion dinars (2%), capital expenditures in the amount of 94 billion dinars (8%), other expenditures in the amount of 46 billion dinars (4%), transfers for compulsory social security in the amount of 233 billion dinars (20%) and expenses for employees in the amount of 254 billion dinars (22%).

The Budget of the Republic of Serbia for 2017 is planned with a deficit of 69 billion dinars, which is 1.7% of GDP. The necessary funds for financing the budget deficit is provided from loans from domestic and foreign financial commercial and multilateral institutions and foreign governments, then through the issuance of government securities (bills and bonds issued on the domestic market in domestic and foreign currency), as well as from the revenue from the issuance of Eurobonds (government securities issued on foreign markets in domestic and foreign currency).

The Serbian government adopted a program of fiscal consolidation measures to stop further debt growth, and this program envisages a significant fiscal adjustment in the next three-year period (Table 2).

Even in the case of higher GDP growth rates, with the current state of debt, a strong shift and a change in the fiscal policy course is needed. The shift should be in the direction of applying measures to bring the actual fiscal deficit to the target in the medium term, given that the fiscal rules define the maximum level of deficit. The Fiscal Strategy established the fiscal framework by which the deficit in 2019 drops to 1% of GDP and the general government debt to 67% of GDP, in order to restore the stability of public finances and ensure sustainable debt financing.

If the Serbian government succeeds in achieving an ambitious plan foreseen by the Fiscal Strategy, we can expect Serbia to meet the strict fiscal rules of the EU even before joining the EU. However, we note that the intention

to comply with fiscal rules has also existed in the previous period, but it has not been implemented.

### The impact of the EU budget on the Serbia's accession process

After the political changes in 2000, the EU's accession becomes the main foreign policy priority of Serbia. European integration and entry into full EU membership are proclaimed as the strategic goal of the entire society. Achieving European perspective and looking at the future within the EU is one of the few topics on the political scene of Serbia around which almost all political factors and a large part of the citizens agree. In the preceding decade, the relations between the two have reached the point that the European Union has become Serbia's largest trading partner. With more than 60% of Serbia's total exports and total imports is realized with the EU as traditionally Serbia's key trading partner, and with over 3 billion euros in non-returnable aid invested in Serbia since 2000, the EU is also the largest donor of funds for support of political and economic reforms in Serbia [3].

Serbia is at the top of the list of EU aid per capita, which confirms that the EU's commitment to Serbia is long-term and solid. EU aid to Serbia is financed through the EU budget, precisely from the EU budget fund envisaged for a Global Europe [8]. The European Agency for Reconstruction in Serbia (EAR), which has been in the 2000-2007 period the main institution for the EU financial assistance distribution, was managing with a budget of close to 1.3 billion euros. The EAR started operations in Serbia in December 2000 when it implemented the Emergency Aid Program in the amount of 182 million euros, which was supposed to help the country recovery. In 2002, the EU strengthened its support to the long-standing challenges of economic development, the promotion of

**Table 2: Planned growth of Serbia's GDP, changes in fiscal deficit and general government debt in the 2017-2019 period**

Year	2017	2018	2019
Real growth rate of GDP in %	3	3.5	3.5
Fiscal deficit in % of GDP	1.7	1.3	1
General government debt in % of GDP	74	71	67

Source: Authors [14].

state administration and the rule of law. That year EAR managed a 168 million euros program for Serbia, which included reconstruction of infrastructure, SME support, reform assistance, and support to independent media and civil society. The focus in 2003, when the EAR in Serbia realized 216 million euros of aid, moved to the field of public finance, judiciary and internal affairs, as well as to the process of decentralization of administration. Support to Serbia's European path has also been high on the agenda of helping Serbia to harmonize institutions and regulations with EU-wide standards. In 2004, EAR managed a 206 million euros budget for reconstruction in Serbia, and in 2005 this budget amounted to 152 million euros. During this period, EAR's priority was to strengthen the partnership with the Serbian government in the process of European integration. The programs were aimed at improving economic development as well as paving the way for future foreign financial institutions investments. In 2006, the European Commission entrusted EAR with a budget of 148 million euros for the financial assistance to Serbia [18, p. 23].

Since September 1, 2008, the responsibilities of EAR have been transferred to the Delegation of the European Union to the Republic of Serbia. In April 2008, the Agreement on EU financial assistance to Serbia under IPA was signed, giving Serbia grants of approximately 170 million euros [18, p. 23]. This is the first tranche of the IPA funds to Serbia, which amounts to 1 billion euros for the entire period from 2007 to 2013. These funds are not a loan but a non-repayable aid, which should help accessing countries to reform, transform and prepare for membership.

#### The use of the Instrument for Pre-Accession Assistance - IPA

IPA is a directional mechanism created by the EU for the successful delivery of assistance to the countries of the Western Balkans and Turkey. This instrument is designed to help reforms in these countries through a single and flexible system, from which citizens would have direct benefits, while countries would receive additional assistance in meeting European standards. The total amount allocated

to IPA projects in this region for the 2007-2013 period amounted to 11.5 billion euros [6].

IPA has replaced the five previous EU instruments for pre-accession assistance: PHARE (Poland and Hungary Assistance for Reconstruction of the Economy), ISPA (Instrument for Structural Policies for Pre-Accession), SAPARD (Special Accession Programme for Agriculture and Rural Development), the Program for Turkey and CARDS (Community Assistance for Reconstruction, Development and Stabilization). IPA is based on needs. Therefore, its priorities are based on clear estimates. Key elements are: the accession or European partnership that the EU has introduced for each of the beneficiary countries, the European Commission's strategy for enlargement and the annual reports for each country.

The criteria for allocating funds take into account the capacities of each country to use the funds and manage them. They also take into account compliance with the conditions for accession. If conditions are not met, a suspension clause can be applied. In this way, IPA links the political framework for enlargement and the EU budget process. IPA provides various forms of assistance to countries that conduct political and economic reforms on their way to the EU membership: investments, subsidies, member states' experts to develop administrative cooperation, support activities for beneficiary countries, assistance in implementing and managing programs, and in exceptional cases budget support.

IPA also provides the EU with a coherent framework for governance and gradual decentralization or, in other words, management that it transmits to beneficiary countries. In addition, it provides flexibility in the application of assistance. IPA establishes a strong link between the budgetary and strategic aspects of enlargement. It makes it clear to the beneficiary countries what they can expect in terms of assistance, provided that they meet the conditions for obtaining it. In this way IPA further strengthens the guidance given by the EU to candidate countries and potential candidate countries on the priorities to be followed. But first of all, IPA helps countries which are EU neighbours and possible future EU members, to meet the standards and values on which the European Union is built. In this way we may consider IPA to be an



investment in the future for beneficiary countries, but also for the EU itself. It introduces a new focus in helping to expand the European Union.

IPA resources can basically be used in four ways [4]:

- As “technical assistance”, which usually involves the engagement of experts, consultants, who then provide services to Serbian institutions, prepare project documentation, prepare strategies, conduct workshops and trainings, etc.;
- Through “twinning” projects, in which local institutions “pare-up” with a similar institution from one of the EU member states, and implement a project of transferring knowledge, experience, assistance on the harmonization of regulations;
- Through “investment” projects, which mainly include the procurement of equipment, construction works, the implementation of financial arrangements with other financial institutions;
- Through “grants”, which represent the allocation of funds for financing specific civil society projects, local governments, agencies, etc.

Total value of EU financial support to Serbia through IPA funds for the 2007-2013 period amounts to about 1.1 billion euros, and the total sum intended for Serbia in the period 2014-2020 through IPA projects amounts to a total of 1.5 billion euros (about 200 million euros per year) [2].

In essence, IPA is the mechanism of additional assistance that EU provides for reforms in Serbia. At the current stage of European integration, Serbia can count on assistance in transition and institution building as well as cross-border cooperation.

Given that Serbia has formally become a candidate for the European Union membership (1 March 2012), it has accessed IPA funds for regional development, human resource development and rural development. By obtaining the candidate status, the entire pre-accession fund management will, from the EU Delegation in Serbia, move to Serbia through a “decentralized management system” of EU assistance. Previously, Serbia must build a system of independent institutions, authorities and control mechanisms that will ensure that the funds are used for the purposes for which they are intended.

This phase of IPA funds management is especially significant because it represents a preparation for EU membership. The decentralized management system corresponds to the way member states use funds from the EU’s structural and cohesion funds, so this system represents the “training” of institutions for functioning when Serbia becomes a member of the EU.

However, in contrast to the financial recourses available to Serbia from the EU funds, our country will, after receiving full EU membership, have to give up a certain portion of its national revenues that it will have to invest in a common EU budget, in accordance with the established mechanism for the functioning of the EU budget. How much will Serbia pay into the EU budget is difficult to predict at this time, but it will certainly be the subject of future negotiations with the EU.

## Conclusion

Even though the EU budget represents only slightly more than 1% of the combined GDP of member states, it has become an arena of political battles and numerous compromises within the EU. Compared to the national budgets, the EU budget has an almost unimportant role in the redistribution of income and the allocation of resources, as well as in the stabilization of the economy. EU funding is closely linked to the issues of relations between the EU and the member states and the specific nature of the European Union as a supranational institution. It is noticeable that the EU budget has items like large subsidies for agriculture and accession countries, because those objectives stand out in the plans and political goals of the EU itself.

An increase in the EU budget cannot be expected in the near future, as shown by the EU’s Financial Perspective 2014-2020. If the EU budget were to increase, it could be a built-in macroeconomic management stabilizer, and transfers between regions could increase economic convergence and EU cohesion. Given that there is no political will among member states to increase the budget and thus create a stronger political EU, it is not realistic that the EU budget becomes a major financial instrument for the EU’s developmental economic policy.

It is important to stress out that creating ESM does not create moral hazard, but enhances incentives for sustainable fiscal and economic policies in all countries of the Eurozone. For this reason, any financial assistance to a country is a subject to a very strict macroeconomic policy of conditioning. Financial assistance should not act as a fiscal transfer, but only as a bridge for liquidity that allows the Eurozone countries in trouble to “buy time” in order to take the necessary measures for restoring fiscal sustainability and competitiveness in the medium term. Therefore, it is of utmost importance that the range of measures focuses on crisis prevention and control policies in order to avoid the need to use the ESM. Based on everything else, especially considering the EU budget, it can be concluded that uncontrolled fiscal deficits and the accumulation of public debt endanger economic stability, development perspectives of society and the well-being of future generations in the European Union. If the EU member states, and in particular the Eurozone member states, fail to pursue a sustainable fiscal and economic policy, the crisis in the EU can deepen. There is more than one flaw to the current EU budget system, it is complex, inefficient and distorts equality among member states, but still this protection mechanism, especially in cases of crisis, is the most important function of the EU budget.

By analyzing the budget of Serbia in the period from 2006 to 2017, we can conclude that Serbia in the observed period conducted an active expansionary budget policy that was supposed to lead to the economic growth. However, a broad state apparatus with its increased consumption and an unreformed pension system, which accounts for almost half of the budget revenues, has not led to the expected growth in economic activity.

Fiscal policy in Serbia must be managed in accordance with the principle of fiscal responsibility, and with strict adherence to the legally prescribed fiscal rules, which in particular means slowing down the growth of public debt, reducing fiscal deficits, and generating savings among all budget users, otherwise it may result in a macroeconomic instability and slowing down of economic growth.

The growth of Serbia’s budget revenues came from the growth of consumption, the growth of privatization revenues, and the growth of economic activity in Serbia.

Serbia’s budget revenues (and expenditures) more than doubled between 2006 and 2017. The budget and its constituent parts grew by more than 10% per year, while the economy and production grew by an average of 1.7% of GDP. At the same time, there was an increase in the fiscal deficit, which was compensated by the increased state borrowing, both from international financial institutions and from domestic ones, which led to the growth of public debt in the amount of over 50% of GDP.

In order for the budget and budgetary policy in Serbia to be a key instrument of development economic policy, it is important to establish macroeconomic stability and to accelerate structural reforms of the public sector, and above all public enterprises. Economic policy should create the conditions for economic growth based on increasing investment, exports, savings, productivity and competitiveness, along with a reduction in macroeconomic imbalances, primarily fiscal deficits, public debt and inflation. Monetary policy must be harmonized with fiscal and should be focused on the stability of prices and exchange rate and on the stability of the financial system, while maintaining an adequate level of foreign exchange reserves.

Given that Serbia’s long-term goal is to join the European Union, an important prerequisite for this is that the state implements fiscal consolidation. It is also important to carry out the necessary institutional, political and economic reforms, especially bearing in mind that Serbia will have an obligation when it becomes a full EU member to implement the rules prescribed by the EU Fiscal Compact.

It should be emphasized that EU procedures in the period from 2000 to 2018 confirm EU readiness to receive Serbia in full membership, which is also indicated by the fact that Serbia is at the top of the list by the amount of financial support per capita. EU aid to Serbia is financed through the EU budget from allocation funds for Global Europe.

Through various forms of financial support and assistance, the total funds allocated to Serbia in the period from 2000 to 2013 amount to over 3 billion euros, and for the 2014-2020 period a total of 1.5 billion euros is planned. Whether the allocated funds will be used

depends primarily on the willingness and capability of the Serbian institutions to prepare appropriate development projects that will meet the strict EU rules for granting financial support.

Finally, the use of IPA funds is very important and represents a sort of preparation for the EU membership, as it is equal to the way member states use funds from the EU's structural and cohesion funds. It also represents a kind of "training" for the period when Serbia becomes a full EU member state.

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