SUSTAINABLE GROWTH AND DEVELOPMENT IN SMALL OPEN ECONOMIES

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Publisher:
Institute of World Economics
Centre for Economic and Regional Studies of the Hungarian Academy of Sciences

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Circulation:
200

ISBN 978-963-301-663-3 (paperback)
ISBN 978-963-301-664-0 (e-book)

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PREFACE

"Sustainable development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and strengthen governance."

Ban Ki-moon, remark at a G-20 working dinner on "Sustainable Development for All", St. Petersburg, Russian Federation, 5th September 2013

The publication "*Sustainable growth and development in small open economies*" is a result of a joint effort made by researchers, reviewers and editors. It emerged as an attempt to contribute to the understanding of the problems the global society is facing in the 21st century and potential responses to ensure the achievement of sustainable development. Last few decades brought immense changes. Some of them lead to overall improvement in the quality of life of individuals, but also to the society as a whole. Unfortunately, some of the changes created negative effects on the environment and pose a threat to the fate of the planet Earth. The environmental problems are even more pronounced in developing countries with small open economies.

Twenty nine authors prepared fifteen papers, contributing in analyzing various issues related to sustainable growth and development. Authors from seven countries have collaborated in bringing this publication to life confirming the importance of the regional and global approach.

We owe special thanks to the reviewers, distinguished and highly recognized researchers, in taking upon themselves this time-consuming and important task. Their inputs exceedingly contributed to the overall quality of the publication. We would also like to thank Ms. Zorica Božić for the technical editing of the book.

Editors

Part I

The Economy of Green Growth

AN INQUIRY INTO THE COMPETITIVENESS-RESILIENT GROWTH NEXUS

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Abstract: *The paper builds on contributions coming from the theory of economic crises and the theory of international competitiveness, within a novel framework of economic resiliency. The empirical analysis, based on recent data and international comparisons, indicates close ties between unit labour costs and trade imbalances, with a potential to explain the lost momentum in economic growth. By decomposing unit labour costs into labour productivity and labour compensation indicators we found the wage policy a factor that contributes to the lost competitiveness of Southern EMU countries vis-à-vis a group of large exporting countries. The paper also discusses main policy dilemmas and some policy options' implications.*

Keywords*: national competitiveness, resilient growth, labour productivity, financial crises*

1. INTRODUCTION

Resilience is the capacity of a system to survive, adapt, and grow in the face of unforeseen changes, even catastrophic incidents. Resilience is a common feature of complex systems, such as societies, economies, companies, cities or ecosystems. Such systems are resilient if they possess the ability to resist disorders, to find an easy way out of catastrophe. Unlike some other systems, economies always survive. What matters for economies is the well-being that will be sacrificed in the attempts to cope, adapt and transform. There are also other specificities of economies as distinct anthropogenic systems.

In this paper, we underline that a resilient economy should equally be able to prevent destabilizing forces to develop internally, as it is expected to cope with

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external destabilizing forces. More specifically, we address the issue of the lost international competitiveness of Southern Europe EMU countries trying to relate it to the wage-productivity developments. We also tackle the issue of the real convergence within EMU and why it seems to be lagging behind the real convergence across some other parts of the world. Maybe a set of policy options and instruments available within the monetary union is too weak to achieve the ultimate goal of real convergence.

In the main part of the paper we study some links between international competitiveness and economic resilience. We start with differences of the concept of resiliency in natural and social systems, before we give a short review of causes of economic crises, which would help us to discuss the roots of ongoing economic crisis. In section four we go on to explore theoretical and empirical regularities concerning the links between labour costs (labour productivity/compensation) and trade imbalances, with a special focus on the recent crisis in Southern Europe EMU countries. Section five discusses some pitfalls on the road to economic resiliency and policy dilemmas that are most relevant for monetary integrated areas, but may also have general economic policy relevance. The final section concludes.

2. THE CONCEPT OF RESILIENCE IN NATURAL AND SOCIAL SCIENCES

Resilience is a universal feature that applies to both natural and anthropogenic systems. It is an attribute of dynamic and adaptive systems. These systems perpetually evolve through cycles of growth, accumulation, crisis, and renewal, and often self-organize into unexpected new configurations (Center for resilience at the Ohio State University).

Economic resilience is a piece of jigsaw which, assembled, points to the need for a much broader perspective over the development issues, and which includes mutual interactions among economic and other systems, and comprises environmental, social, and even cultural resilience. Economic resilience means “the ability of an economic system to withstand adverse shocks, and reallocate resources to areas that offer new growth opportunities” (Munitlak-Ivanović, Zubović 2017, 18). If a system, while faced with challenges, possesses ability to cope, adapt and transform, it can be labeled as resilient (Golubović, Golubović 2017, 14).

Resilience is obviously a quality of a system which can be assigned an absolute value, at least theoretically. If a system bounces back to the equilibrium immediately, and at no costs, it possesses absolute resilience. In real life, the level of resiliency should be assessed by virtue of costs and time that are necessary to

pull the system back to equilibrium, to restore the previous one, or to shift it to the new one. In economic life, time has value, and this is why one can use the phrase "the lost decade" referring to the time spent in recovering growth after a shock (e.g. Japan economic recession in 90s).

Resilience is also a quality of market structures. Market resiliency measures the speed by which new trade corrects temporary imbalance between demand and supply and brings market price to the new fundamental value, if the trade was informational, or the speed by which new trade brings the price back to the previous level if the disrupting trade wasn't based on the fundamental information. Thus, "resiliency is a characteristic of markets in which new orders flow quickly to correct order imbalances, which tend to move prices away from what is warranted by fundamentals." (Sarr, Lybek 2002, 5). This concept rests on the assumption that assets are eventually going to be priced on fair value, and what matters is the speed at which it happens. Yet, (asset) market interactions can be complex, but still far from the complexity of some other economic systems. The more complex system is, the more it will incline to non-ergodic type, i.e. mutable reality outcomes of economic decisions evolve over time in its nature and content. In that case, resilience will not result in movement along a smooth trajectory, but rather in continuous adaptation to changing conditions. According to Tainter (2006, 92), if a system (social or ecological) has the capacity to continue a desired condition or process, this indicates its sustainability, while resiliency indicates the ability of a system to adjust its configuration and function under disturbance.

Rojas-Suarez (2015) defines macroeconomic resiliency as ability of an economy to resist a shock, assuming that the shock comes from outside and all the resources an economy has at disposal to cope with it are internal. In such framework, macroeconomic resiliency contains two elements: fragility and capacity to react to shocks. At this point we would underline that there are some similarities but also important differences between environmental shocks and economic shocks. Fellow economists which are not ready to accept blame of its profession for not foreseeing a disastrous event tend to focus solely on crisis transmission mechanism. There is a vast number of studies of economic disturbances that treat crisis phenomenon as it is coming from elsewhere. It is clear for so called "contagion" branch of explanations, which is obviously rooted in natural sciences, particularly medicine. However, many disastrous events in the economic life have not happened all of a sudden, and taken us by complete surprise. Economic disturbances are not uncontrollable events; they are growing with us, and growing because of us. It is probably true that from the very beginning, it is hard to assess the extent of an incoming disorder. As Jordà et al. (2010, 5) wrote: "[f]inancial crises, clinical depression and spam e-mail share common features that require specialized

statistical methods. They can be characterized as binary events (one is in a financial crisis or not, one is depressed or not, an e-mail is spam or not) whose outcome may be difficult to verify even ex-post—was it a financial crisis or a simple recession, clinical depression or bipolar disorder, spam e-mail or a commercial e-mail about a product we own?" However, it also might be true that one serious or a series of small mistakes help an initial disorder to transform into full blown crisis. Economists usually choose (rather arbitrarily) a point from which they will start exploring role of different actors, their actions and reactions, leaving all that happened before simply as given.

There are some similarities between systems in nature, especially living nature (e.g. ecosystems) and anthropogenic systems, like societies. Elements interact, adapt and evolve over time. Interactions between units are based on some regularity that can be known or unknown to us. However, physics and biology never go wrong, causality never fails, and it is repeated the same way over and over again.

If we accept that building our world resilient should be our ultimate goal, we model our behaviour based on the assumption that shocks come from elsewhere, and all that we can do is to adapt. All the actors on the social scene are prone to mistakes. If no one makes mistakes, no one will be forced to adapt. Thus, our focus on resilience is somehow too narrow for social systems. It is based on the assumption that for most of us bad things happen, and when it happens, causes chain reaction such as how to avoid to be hit, and if one cannot be missed, how to control damage, and learn from the past episode in order to prepare itself for the next one.

Thus, the biggest difference between natural and anthropogenic catastrophe is that humans can control the emergence of the latter one. The emergence of the natural catastrophe is based on physics, as well as transmission of it. The reactions are complex but predictable and lead to the range of solutions (outcomes) that can be foreseen, and calculated with a reasonable accuracy. Nevertheless, despite of the increased awareness and understanding, natural catastrophes are still hard to anticipate, and all that people can do is to change the way of life in order to reduce impacts that inevitably come from nature.

In anthropogenic systems knowledge matters (Tainter 2006). Knowledge in society is disseminated amongst individuals. An individual accumulates knowledge over the lifetime, carries its knowledge, but the knowledge eventually dies with the carrier. Despite the inventions made to store and disseminate knowledge (library achieves, extended databases, searching machines etc.) our understanding of processes around us is still far from flawless. For example, if mankind had the right answer it does not necessary mean that anyone can reach it. One needs some

knowledge even to look for knowledge. Individuals and organizations make many decisions in the deficit of knowledge and without full understanding of processes. If the knowledge is readily available how can be explained the fact that the same bad things happen all over again. Reinhart and Rogoff (2009) coined the phrase "this time is different phenomenon", trying to explain why we do not learn from the experience of others.

Humans are the only living creatures that are prone to wrong reactions, errors, since we make decisions. Although economic crises are sometimes classified as external to the system, but they are never external to the whole humanity. There is always a human mistake somewhere, big enough to trigger a crisis, and likely a chain of mistakes that help the crisis transmit.

3. CHALLENGED RESILIENCY: ARE WE LIVING BEYOND OUR MEANS?

Kajfež-Bogataj forcefully underlined in her keynote speech: "We are living beyond our means, on resources borrowed from the future and the model of capitalism we use today is inadequate? Both the environmental crisis and the financial crisis have the same root cause – living beyond our means, on resources borrowed from the future." (Reić, Šimić 2009, *xi*). This statement can be easily accepted, in the first approximation, as a valid explanation of deeper roots of the contemporary crisis. However, such behaviour is not common for entire world, at least not in any specific point of time.

Despite the common phrase used in policy circles and even in academia, we have reservations against referring to the last crisis as a global phenomenon. At least concerning its roots, and to a large extent the ways it has been transmitted outside the country of origin, it was mostly limited to the most advanced industrialized countries. Nevertheless, growth opportunities were challenged in the vast number of countries, but one could reasonably expect that sluggish or negative growth in the part of the world which represents the engine of world demand would have an impact on growth in the rest of the world.

Such an economic "earthquake" should awaken policy makers, and bring them to reality. Why are new industrialized countries currently doing better than old ones? Maybe the economic resources are not that much in favour of currently most advanced economics as it used to be, and the current level of consumption and living standard are not well rooted anymore.

Is there any economic fact that can be used to test this hypothesis? What reveals a real strength of any national economy is the outcome of an economic battle that takes place vis-à-vis all other nations. Nations compete in the world market, so that current account balances would probably provide an insight into who is winning and who is losing the race.

3.1. Economic crises and trade imbalances

There is a large body of literature dealing with determinants of financial and economic crises, exploring both spatial and temporal dimensions of crises. In this short review we will limit our interest only to those contributions which are more comprehensive and refer to the most recent crisis in developed countries. By studying macroeconomic fundamentals of developed countries within the sample of several most striking international crises over the period of last 140 years, Jordà et al. (2010) agree that external imbalances, huge and protracted current account deficits, along with credit growth and behaviour of interest rates, help explaining incidence, duration and overall social costs of financial disturbances. The authors found that the current account deteriorates in the run-up to isolated (local) crises, although the evidence seems inconclusive in global crises, possibly because both surplus and deficit countries get embroiled in the crisis. Interestingly, in a less formal way of analysis, Hume and Sentance (2009) found the same determinants important in explaining the roots of recent financial and economic crisis across the developed world. The authors moved forward in explaining global imbalances, by blaming low-cost producers for systematic deterioration of trade accounts of majority of Western economies. Moreover, in a most comprehensive review of determinants of financial crises, which covered 83 studies, Frankel and Saravelos (2012, p. 218) found current account balance fifth most frequently cited variable that significantly explains incoming crises. If we add export and import data which some studies report as variables that substitute for the current account variable it will boost foreign trade related variables as third best early warning indicator, just behind international reserves and real exchange rate. Having in mind that the better performing variables at the same time constitute exchange market pressure index (per se a measure of crisis intensity), it makes the variable of concern one of paramount importance.

Just to make a picture complete, we would underline that the importance of current account imbalances for macroeconomic fragility is not one of lesser extent even for emerging countries. Rojas-Suarez (2015) framework for emerging markets macroeconomic resilience puts current account balance (relative to GDP) on the top of seven indicators chosen to make a synthetic measure of macroeconomic resiliency, where the indicators are separated to indicators that destabilizing effects

of an adverse external shock on macroeconomic performance depend on; and those which portray country's ability to respond to shock (fiscal balance, public debt, inflation performance and credit growth). Current account balance, along with indicators of external solvency and liquidity, belongs to the former group of indicators. The above intellectual exercise brings us to the point that we would like to address next; that is, how the persistent and potentially disastrous trade imbalances across the world can be explained.

4. COST OF ECONOMIC RESOURCES AND ECONOMIC RESILIENCE

The logic of unit labour costs that determine international competitiveness can be traced back to Ricardo (1817). Later contributions (e.g. Dornbusch et al., 1977) put forward the old arguments to the point that the labour costs are seen as the main driver of international competitiveness. However, although the argumentation of mainstream theory seems strong, empirics seems less clear on this issue. The weak and even inverse long-term causal relationship between the change in unit labour costs and output growth, as well as international competitiveness, is known as Kaldor (1978) paradox. The author proved empirically that in a time span that lasted several decades the countries that have had steepest increase of unit labour costs were the countries with the steepest economic growth and improved national competitiveness. This is probably due to the long-term technological changes and the contribution of intangible economic resources (Kyrkilis et al., 2016), which are the factors that are more likely to make difference in larger time spans. However, since radical changes in production technology take some time to become an influential determinant of labour–output relationship, in the meantime, day-to-day changes in unit labour costs, driven by other factors, remain the main driver of international competitiveness, and consequently the main driver of changes in output growth across nations. Those two forces of international competitiveness work in unity, they are not mutually exclusive. Although it is clear from the stance of economic theory, when it comes to economic policy it appears that there is much more confusion. Policy makers advocate either for austerity measures, ignoring a whole set of economic growth determinants that lay outside of labour costs, or calling for alternative economic reforms negating strong economic logic of unit labour costs as a determinant of competitiveness.

What might the drivers of radically changed relative international competitiveness be? In the table (1) some winners and losers are listed. The data are from official source (OECD), and this is why we excluded China from the comparisons. Although the case of China *per se* is very interesting, the data source contains no records for this country, as well as for some other emerging surplus countries. In the first section of the table, Germany, Japan and South Korea are listed,

representing the current account surplus countries (winners), while the worst EMU performers, Greece, Portugal, Spain and Ireland (losers), are presented in the second section of the table.

Table 1: Labour costs and productivity (annual growth rates, %)

	GDP per hour worked		Labour compensation per hour worked		Unit labour costs	
	1996–2007	**2007–2015**	**1996–2007**	**2007–2015**	**1996–2007**	**2007–2015**
CA surplus countries						
Germany	1.67	0.58	1.51	2.60	–0.16	2.03
Japan	1.68	0.83	–0.11	0.22	–1.79	–0.61
Korea	5.08	2.92	6.23	4.18	1.15	1.27
Southern Europe and Ireland						
Portugal	1.38	0.78	4.24	0.53	2.86	–0.25
Ireland	3.55	4.95	6.40	1.72	2.86	–3.23
Greece	2.56	–1.15	6.50	–0.89	3.94	0.26
Spain	0.21	1.33	3.04	1.49	2.83	0.16

Source: OECD (2017a, 2017b, 2017c, 2017d) authors' recalculation

Unit labour costs index (hereafter ULC) is a widely accepted measure for international competitiveness. By the way of construction, the measure compounds two distinct indicators. Thus, for a more sophisticated analysis, one has to decompose the unit labour costs into a more purified measure of "labour" productivity and a measure that captures change in wages. The measure of productivity is GDP per hour worked, while the measure of change in wages is labour compensation per hour worked. All original (genuine) data series (levels) are expressed in USD constant prices (2010 PPPs), so that they are completely comparable. In order to investigate whether the economic downturn that became visible in year 2007 can be explained by changes in international competitiveness we recalculated the indicators so as to compare periods before and after the crisis.

Data in Table (1) are average annual growth rates for the period (in percentage). The growth rate of ULC is then simply difference between the growth rate of labour compensation per hour worked and the growth rate of GDP per hour worked. Therefore, if the labour compensation (wages) increases at steeper rate than "labour" productivity, it will generate a rise in unit labour costs (by hours worked), and damage countries' competitive position. The data show that during the decade before the crisis all the Southern Europe countries plus Ireland exhibited no problem with stimulating growth by means of labour productivity. For Ireland and Greece average growth rate of labour productivity was above that of Germany and Japan. However, during the period, gap in unit labour costs steadily accumulated because of differences in growth rates of labour compensation.

Namely, in those countries wages increased much faster than in Germany and Japan (even negative figures).

Although some authors (e.g. Flassbeck 2016) were prone to address the issue of reshaped national competitiveness throughout the EMU, and particularly position of Germany vis-à-vis Southern Europe EMU countries, by calling upon Germany's policy of undercutting its wage increase so as to lag behind real productivity growth, the regularity is far less striking in our exercise. Our data (Table 1) show that Germany can be blamed only for not joining the wage race, probably motivated to fence off from main international competitors. By performing the "internal devaluation" Germany resorted to "beggar-thy-neighbour, but only after beggaring its own people" (Flassbeck 2016, 15).

Unfortunately, the issue of data availability restricts our analysis to the most recent periods. However, there are some data exclusively on "labour" productivity available even for earlier periods, which make us able to assess long-term productivity trends. For example, during the period from 1983 to 1996, all sampled countries recorded stable productivity growth, with Korea leading the group with average annual growth rate of 7.05 %, followed with Ireland (4.04) and Japan (3.60). All other countries except Greece (1.23) recorded average rate above two percent annually.

The temporal change in "labour" productivity is just a part of whole picture, which tells nothing about relative productivity among the countries in the sample. The next table (2) presents the data on the level of labour productivity (USD constant prices, 2010 PPPs) for the countries (added Turkey) relative to that of Germany. The data show that labour productivity of all countries in the sample (except Ireland most recently) is lagging behind that of Germany.

Table 2: GDP per hour worked relative to Germany

	1983	**1996**	**2007**	**2015**
CA surplus countries				
Japan	0.59	0.69	0.69	0.70
Korea	0.17	0.31	0.45	0.54
Southern Europe and Ireland				
Portugal	0.55	0.56	0.54	0.55
Ireland	0.63	0.77	0.94	1.32
Greece	0.65	0.55	0.61	0.53
Spain	0.92	0.88	0.75	0.79
Memorandum				
Turkey	0.43	0.45	0.56	0.62

Source: OECD (2017b) authors' recalculation

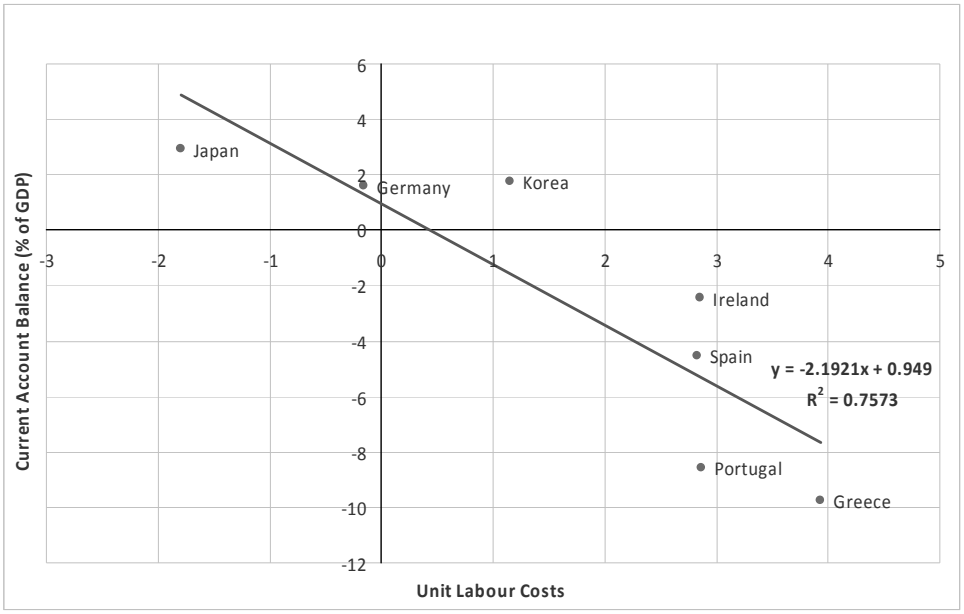
What is symptomatic is that both within Europe and on the global scene, it seems that there is one major player which implements "beggars-thy-neighbours" policy. In Europe it is Germany, and in the globe it is China. Those two cases have something common, but also have some distinct features. According to some classifications (Abdon et al. 2010), Germany is the second-most complex economy in the world, after Japan, and the second most diversified economy after Italy. Germany exports total of 5,107 products while 2,113 with revealed comparative advantage. This country dominates or has two-digit share in world export of top ten most complex products. Those facts lead some authors to conclude that using Germany for comparisons is somehow misleading. There are some pieces of research (Abdon et al. 2010) that prove that Southern Europe countries as a group differ in export structure so much that they do not compete directly with Germany. At least so far, China story has seemed completely opposite. It is an astonishing fact that solely in the first decade of new millennium China tripled its share of world export of manufactures, which now reached two digits figures. Many would agree that China's competitive advantage rests on cheap and productive labour. Moreover, its export structure becomes increasingly sophisticated (Ceglowski, Golub 2012). Those are two completely opposite strategies for penetrating foreign markets. Technological advance makes Germany protected from fierce (price) competition, while China is the economy which fuels price competition on the global market. To rephrase, China is doing better (cheaper) in what all other countries can do.

The stable growth in productivity is common feature of all sampled countries in the decade that precedes the crisis strike. However, what made change in international competitiveness was different pace at which wages were growing before the crisis. Being a full currency union, EMU, and its adjustment policy, operates with one hand tied. If there aren't national currencies, there is no scope for external (currency) devaluation to restore competitiveness between member states. The only way to adjust is through unit production costs, of which the unit labour costs represent a major part. New developments in EMU, both novel macroeconomic imbalance procedure (above all more stress put on balanced trade) and latest records, proved common understanding that coordination of price and wage evolution is a key requirement for a successful currency union. After decades' long history of current account deficits, Portugal, Ireland and Spain recorded a break into surplus in 2013, while Greece succeeded the same in 2015. This trend coincides with either reversals in unit labour costs (Ireland and Portugal) or moderations of previous high growth (Spain and Greece). At the same time, Germany allowed an increase of unit labour costs to the level which proved harmless for trade balance, since for the period of 2007 to 2015 the country recorded even a steep increase in current account surpluses (from an average of

1.61 percent of GDP for prior-crisis decade to 6.60 percent in last eight years), not so from trade with the Union members, but largely from trade vis-à-vis the rest of the world.

The next Figure (1) shows spatial relationship between the current account balance (in percent of GDP) and the movements in unit labour costs. Both variables are expressed as average rate for the period (1996–2007) with unit labour costs as annual growth rates. Although the analysis is not based on sophisticated econometrics, it seems rather convincing that a chronic issue of balancing current account can be related to the dynamics of unit labour costs.

Figure 1: Current account balance vis-à-vis unit labour costs



Source: OECD (2017a, 2017b, 2017c, 2017d) authors' recalculation

The idea that unit labour costs determine trade flows, and consequently output growth, rests on the assumption that nothing is changed in income distribution, e.g. the capital costs are constant over time, or tends to equalize across countries. Felipe and Kumar (2011) show that "loss of competitiveness" by some countries in the EMU is not just a question of nominal wages increasing faster than labour productivity, since nominal profit rates decreased at a slower pace than the capital productivity. Based on the data that covers the period from 1980 up to 2007, the analysis reveals that in all EMU countries but Greece the share of capital in value

added increased, even tripled in case in Austria. Thus, the question is whether the lost competitiveness belongs to diminishing capital productivity, i.e. rising unit costs of capital, along with highly debated rising unit labour costs.

When an economy is faced with a rise in production costs that jeopardize long term growth, the question is how those potentially dangerous tendencies are tolerated. If the economy is resilient, such gaps would never accumulate to the level where concerted reaction of market and policy forces is necessary. The market forces alone will be sufficient to hold up dangerous tendencies. The discussed crisis episode explains that neither free market possesses the strength to bring equilibrium back, nor policy interventions could guarantee that.

5. SOME PITFALLS ON THE ROAD TO A RESILIENT ECONOMY AND POLICY IMPLICATIONS

At this point we should stress an insightful introductory remark of Jordà et al. (2010, 1): "It is a great irony that crises are orphans right up to their inception, at which point they become the scions of *new economic orthodoxies* [italics added] and a few fortune tellers." If the global financial crisis that struck across Europe in 2007 revealed that EMU ruled by monetarists orthodoxy failed to achieve real convergence, so will the same, prolonged economic recession and crisis of Europe competitiveness unveil shaky grounds of the adjustment policy based on neoclassical recipes, which assume potential of flexible labour market to restore the lost competitiveness, and again, bring Europe back on the road to real convergence.

When working on the terrain of adjustment policy one has to consider two corner solutions: austerity measures, or (further) stimulation of aggregate demand. The first approach so far proved to be rather costly adjustment policy for some countries, since it brought crisis of under-consumption at the doors. The second corner solution appears not a viable option anymore, since the hardest hit countries already reached dangerous levels of public debt. This shortage of easy solutions indicates that an economy, once driven out of the tracks because of overspending, possesses no solution that excludes future under-spending. Moreover, even if under-spending (austerity) is accepted it can be rather complicated to implement with success.

If we assume that there are two forces that drive output, investment and consumption, and introduce income distribution as endogenous variable, a distressed economy that is staggering for international competitiveness, will inevitably become stuck in one or another type of crisis. An increase of labour share in value-added will increase domestic consumption, but decrease incentives

to invest, and a profitability crisis and unemployment will emerge. An increase of capital share in value-added would stimulate investments, but, if not followed with increase of consumption, the crisis of under-consumption will emerge. Theory of regional economic integrations suggests that factor mobility will wipe out local disequilibria toward a new regional equilibrium, but the process has so far failed.

EMU policy package currently combines country specific fiscal tightening response and all-across-EMU relaxation through expansionary monetary policy, which, despite of unprecedented extent, have not put in danger traditional measures of monetary stability yet. Such a combination was designed as a proper response of a monetary integrated area on asymmetric economic shock.

Through the post crisis recovery package, leading countries (e.g. Germany) endeavour to protect growth, while, in countries hit most hard during the financial turmoil, stability was targeted as their prime concern. However, in this episode, road to stability goes through restored international competitiveness.

As is always the case, there will not be one-size-fits-all policy. If an economy were producing only for export, its output would be driven by world demand, and the domestic demand would not matter. For the group of countries that we study, the case of Ireland is the sole one close to this ideal. For other countries, domestic consumption will drive output to a larger extent. Therefore, the policy orientation should be case specific. If an economy is one of export-led type, wage cuts, and consequently domestic consumption cuts, would likely decrease import and increase export, boost international competitiveness and output. An overall economy would benefit from this policy action, as happened recently in Ireland. However, if an economy is wage-led one, with domestic demand (consumption) that dominates international demand (consumption), wage cuts would probably harm domestic demand more than it would stimulate international component of total demand for national product, and the trade-off would hardly be positive at the end of the day. In such economies, reward of capital investments will be protected if decreasing share of profit in output is compensated with increased total output, due to the increase of total consumption.

It is obvious that countries outside of monetary union have some extra room to maneuver. They have at hand nominal devaluation. Let us discuss merits of internal (real) vs. external (nominal) devaluation. Internal devaluation which is aimed to restore competitiveness based on downward adjustment in relative wages probably impacts on the wages in all sectors. Currency devaluation, on the opposite side, impacts on the (real) wages exactly where is needed (Flassbeck 2016, 18) in the industries that compete internationally. External devaluation will have an

immediate positive effect on profit margin in export oriented industries, i.e. increase share of profit relative to labour costs, providing that wages and prices do not follow an upward trend after the depreciation. The effects of currency devaluation on profit margin and wages in import oriented industries and non-tradable sector will depend on the way that wages adjust internally. However, it is likely that such development would not harm domestic consumption as much as internal devaluation (wage decrease) would do. Mechanism of internal devaluation rests on the assumptions that wages in industries exposed to international competition do not follow labour productivity, so that unit labour costs do not tend to equalize internationally, or, wages in non-tradable sectors do not align downward with the wages in tradable sector, opposite to mechanism explained in Balassa (1964). Therefore, a government has to put pressure on wages in non-tradable sector, most likely the public sector, hopping that the wage decrease will spread throughout the labour market.

6. CONCLUSION

The theorem that unit labour costs direct trade flows across nations belongs to the basic economic regularity known as “law of one price”, which, in this particular case, means that the same resource must be priced the same all over the world. More specifically, reward for labour should be related to its productivity, which is the measure of its quality. Unfortunately, opposite to the laws of physics, economic laws are possible to ignore for some time.

If the economies were resilient, they would prevent the pressure to accumulate to the level that crisis becomes inevitable, and, it would not be that visible that economic law regulates our lives. Economic crises are signs that our undertakings are limited by economic laws. They are punishments for the committed crimes. Fortunately, the economic systems have circuit breakers built-in. Those are hard facts of economic life. Attempts to seize unjustified reward for any resource will be mirrored in lost international competitiveness, external debt accumulation and ultimately in jeopardized growth.

The episode that we have studied here points out some policy fallacies. The first one is that ongoing monetary integration per se helps achieving pre-conditions necessary for creating one such integration, especially in terms of relative size of output shocks and their synchronization (Karras, Stokes 2001). Namely, merits of monetary integration are strong if there is perfect intraregional migration of labour and unrestrained inflow and outflow of capital funds, but also mutual compatibilities of the member countries in matters of economic institutions and coordination of national policies, in the complementarities of their trade patters,

business cycle and shock synchronization (Swofford 2000). Those economic conditions make an abandoning of monetary autonomy almost a costless strategy. However, even the very father of optimal currency area theory, Mundell (1961) underlined that at the beginning of the monetary unification, member countries have been far from an optimum currency area in terms of mobility of economic resources (capital and labour) and price and wage flexibility. According to Rogoff (2005) EMU failed to achieve the level of its labour market integration and flexibility, and remains a non-optimal currency area, decades after the creation. Secondly, it is a pitfall that adjustment mechanism that goes through divergent price and wage trajectories, if needed, will operate well (automatically) and at costs that societies readily accept.

ACKNOWLEDGMENT

This chapter is written as a part of the research project OI179015 (Challenges and Prospects of Structural Changes in Serbia: Strategic Directions for Economic Development and Harmonisation with EU Requirements), financed by the Ministry of Education, Science, and Technological Development of the Republic of Serbia.

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ORGANIC PRODUCT LABELLING: CONSUMER ATTITUDES AND IMPACT ON PURCHASING DECISION

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Abstract: *The objective of this research is to analyse attitudes of the consumers towards the organic products and to determine the level of confidence they have towards the legally established label for organic products. A large number of studies have shown that when buying, consumers usually opt for a product with a trademark that guarantees a certain quality. We used questionnaires designed specifically to obtain customer-level data in order to evaluate their attitudes towards organic products and labelling. Having in mind identified constrains and literature review, we structured questionnaires to test their opinion about organic food, basic criteria when opting for groceries and are they willing to pay more for the organic products. Survey results show that consumers in Serbia have awareness of the importance of healthy eating habits and they are ready to allocate more money to buy organic products due to their quality, safety and nutrition. Their basic criteria when opting for groceries is food composition, followed by recommendation and price.*

Keywords*: consumer attitudes, organic products, organic production, organic certification process, national organic label*

1. INTRODUCTION

Recent years brought environment preservation in the focus, stressing out concerns about food safety and intensive development of organic production and new alternative ways to produce healthy, safe and environmentally friendly products. Organic products have a number of advantages in terms of their wellbeing and absence of numerous harmful chemicals that are widely used in conventional production. In addition, the negative impact on the environment has been minimized. The organic products do not contain substances that are harmful to health - pesticides, heavy metal residues, hormones and other veterinary preparations, mycotoxins, synthetic additives or genetically modified organisms.

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Another aspect of organic production put points out that the products are produced in accordance with the basic laws of nature, in harmony with the flora and fauna, compliant with climatic conditions and as such have the vitality that primarily has a positive impact on the consumer. This sustainable production system does not pollute the environment. Synthetic protective agents and artificial fertilizers are not used, animal breeding takes place in a way that contributes to the well-being of animals themselves and enables the production of far more secure products of animal origin for consumers. During production, priority is given to renewable energy sources and the use of energy is minimized during production and processing.

Organic production is a legally regulated and includes the control and certification process from the farm to the market (FAO, 2011). It is a complex, strictly controlled production system that operates under the defined rules of IFOAM (the International Federation of Organic Agriculture Movements), which every country adapts specifically to its conditions and specificities of the local market and then regulates it. There are a number of conditions that each producer must fulfill in terms of the use of the law of the foreseen techniques and resources in order to carry out organic agricultural production. This fully controlled production is regulated in the Republic of Serbia by the Law on Organic Production (Sluzbeni glasnik RS", No.30/10,07.05.2010).

2. THEORETICAL BACKGROUND

The intensive expansion of areas under organic crops reflects the importance of organic production. According to the latest data from the Organic Monitor, it is estimated that the global organic product market has reached 75 billion euros in 2015, with the US as a leading market (35.9 billion euros), followed by Germany (8.6 billion euros), France (5.5 billion) and China (EUR 4.7 billion). Switzerland, on the other hand has the highest organic products consumption of 262 EUR per capita in 2015 according to FiBL (www.fibl.org). There are a number of factors that influence consumer decision to buy organic products: availability, price, perceived quality, family reasons, political/ethical issues, health problems (Hjelmar, 2011). Organic barometer study conducted in Switzerland showed changes in organic demand trends for the first time in 2015: 608 consumers participated in the research, 11% of them are already buying organic products, 28% often buy organic products and 43% buy organic products only occasionally. All three groups of respondents intend to buy more organic products in the future. The most important motive for the purchase of organic products is the "avoidance of pesticide residues in food", "contribution to environmental protection" and "natural production/foods with less additives and processing" (FiBL, 2016).

On a global scale, organic production is interesting and important because it protects natural resources from pollution and preserves biodiversity. Also, it provides long-term maintenance and enhancement of soil fertility. At the country level, it can ensure sustainable socio-economic rural development, while at the consumer level, organic production provides safety (Ljumović, Lečovski-Milojkić, 2015a). Developing and transitional countries with optimal environmental conditions in rural areas have the opportunity to increase their supply of organic products on international market and thus boost profit without compromising the environment with dirty technologies, typical of these countries (Ljumović et. al, 2015). According to FiBL's available data from 2014, 43.7 million hectares of agricultural land is under organic production (including areas in the period of conversion). Almost 1% of the agricultural land in the world is under organic production, where 40% of total organic areas are in Australia and Oceania, 27% are in Europe, 15% in Latin America, 8% in Asia, North America 7% and only 3% in Africa (FiBL, 2016).

In Serbia about 2,000 producers are engaged in organic production, with about 15,000 ha under organic crops and a tendency of growth due to increasing demand for organic products on both domestic and foreign markets. According to the data from 2015, area under organic production reached 0.44% of total agriculture land, which is lower than the average in the EU (data from 2013 show, there was about 5.4% of land under organic crops in the EU, www.pks.rs). Organic production in Serbia is regulated since 2000 and the regulations are harmonized with EU regulations. The possession of the organic certificate enables producers to access the organic products market and provides consumers with security when buying. The process of obtaining the certificate is extremely rigorous, long-term and costly. However, with the acquisition of certificate, customers get certain security in product quality and producers can sell their products at a significantly higher price, which can lead to a rise in the profitability. In order to distinguish the organic from conventional products, they must be marked with a specific label, each country defining its own. During the 2006 in Serbia the Ministry of Agriculture, Forestry and Water Management prescribed the appearance and content of the label for the certified organic product and the label for the product from the period of conversion: "Organic products that are placed on the market shall be declared in accordance with special regulations governing organic production and labeling and advertising of food. The product from the conversion period, which implies the time period prescribed for the transition to the organic production system for a period of 1 to 3 years, also have its mark, prescribed by law" (Službeni glasnik RS, No.88/16, 28 October 2016). Both marks are displayed at Figure 1.

Figure 1: The national organic label for the products from the conversion period (right) and the sign of organic products (left)

The official EU logo for the labeling of organic products, known as Euroleaf (Figure 2), was introduced in July 2010. If used, this product must be legally qualified as organic and fully compliant with the conditions and regulations for the organic sector established by the EU. For processed products, this means that at least 95% of ingredients are of organic origin. Imported organic products have a label prescribed by the country in which they are produced, as well as a sign for organic products used in the Republic of Serbia.

Figure 2: Euroleaf - the official EU logo for the labelling of organic products

Certification and control process provide security for producers in terms of protection against unfair competition which attempts to manipulate certain labels and words in names of their products and often misleads buyers in terms of the quality of their products. The names of some products contain the prefix "bio", "eco", "organic" even if they have not actually passed through the process of control and certification or produced according to the principles of organic production. The consumers can be sure that the products labeled as organic have been produced under rigorous control which is constituted by the law that can confirm that the product is coming from controlled organic production system.

3. LITERATURE REVIEW

Consumers opt for the purchase of organic products for several reasons - because organic production uses less pesticides and fertilizers, it is considered to be less environmentally damaging and there are also health reasons (Van Doorn & Verhoef, 2011). Many studies show that health and nutrition aspects are the most important factors affecting the procurement of organic food (Honkanen et al., 2006). In addition to health reasons, motives for buying and consuming organic food are ethic (animal welfare or environmental protection), quality (taste) and national origin (Hjelmar, 2011). On the other hand, when it comes to producing organic products, profitability is one of the basic criteria that agricultural producers take into account when deciding on a particular type of production. However, the number of producers, who, in addition to profitability, also require quality, safety and environmental protection is increasing (Lečovski-Milojkić, 2015). Recent research showed that it is possible to achieve profitability of agricultural production with respect to the organic principles. Analysis of organic soybean production pointed out that it is possible to achieve profitability and at the same time realize the benefit to the society as a whole (Ljumović, Lečovski-Milojkić, 2015b). The promotion of the use of organic products could be enhanced by introducing additional content at the organic farms, such as accommodation, food and beverage, natural tours, horse riding or even offer volunteering on organic farms in exchange for accommodation and food. Serbia has a big potential in terms of development of organic/eco tourism, due to the large number of protected resources, natural areas, national parks, reserves, monuments and a large number of protected plant and animal species. Since organic food has gained an increasing popularity worldwide including Serbia recently, there is the trend of increase of the cultivated land area under the organic production (Ljumović, Lečovski-Milojkić, 2015a). Promotion of organic products and rural tourism can also enhance entrepreneurship (especially female entrepreneurship), creation of new jobs and decrease of unemployment and also development of rural areas (Radović, Radović-Marković, 2017).

In Denmark, organic food consumption has become standard - organic food purchases are normal for Danish consumers - only 8-9% of them have never bought organic food (Kjaernes & Holm, 2007). Research related to the definition of a typical organic food buyer has shown that "an organic consumer is a mature woman with children living at home" (Hughner et al., 2007). In China, known for a large number of scandals in the food industry, a study was conducted as part of the Food Integrity project by FiBL, which showed that the official organic label presence on products can contribute to the growth of organic food consumption and growing confidence in the quality of organic food, especially for consumers who

had at least one negative experience with the purchase of fake products (FiBL, 2016). Labels are worth the measure in which they help to consolidate the long-term commitment of the consumer who is affiliated with the company-producer trademark owner and create a positive image (Simin & Janjušič, 2014). Over the years, most consumers have realized that their shopping habits have a direct impact on many environmental problems (Laroche et al., 2001). The diffusion of labeled, branded and certified food consumption is a major trend that is a consequence of changing consumer attitudes towards health and food safety (Stojković et al., 2011). An latest research on food safety in Serbia shows that respondents are in average not sure whether they have reasons to be optimistic or pessimistic (Domazet, Đokić, 2018).

The labeling of organic products does not only benefit consumers, but also sells organic products. Organic labeling allows organic producers to achieve greater negotiation power over retailers and thus to achieve greater market share (Bonnet & Bouamra-Mechemache, 2016). The most important organic food markets are USA, Canada, Europe (the largest organic food markets are Germany, Great Britain, Italy and France) and Japan (Paraušić et al, 2008). The total sales of organic products - food, bedding, pillows, clothing and tobacco - in the United States increased by as much as 83% between 2007 and 2012 (Cohrssen & Miller, 2016). The organic food market is moving towards increasing consumer attention on environmental and animal welfare issues, thanks to the large coverage of the media and the increasing awareness of the consequences of environmental pollution, global warming and the use of natural resources (Van Doorn & Verhoef, 2011). In Japan, consumers are willing to pay a 10% higher price for organic than conventional products that do not have a specific label, indicating the possibility of making a significant profit margin for organic producers and retailers (Kim et al, 2008). Producers, processors, exporters and even organic food businesses have to pass through the process of certification. Authorized organizations control production processes and services in terms of their compliance with defined standards. Inspection and certification (the certificate is valid for a period of one year, followed by a re-check of all the factors stipulated by the Law and, if fulfilled, the produces gets extension of the certificate) are the only guarantee to the consumer that the organic product is produced according to all criteria and standards of organic agriculture (Paraušić et al., 2008). Research conducted in the United States, Great Britain, Denmark and Sweden show that trust in the organic label is greatest in countries with a significant country participation, which suggests that governments can influence the growth of green consumerism through active and significant inclusion in eco and organic labeling (Sonderskov & Daugbjerg, 2010).

4. DATA ANALYSIS AND RESULTS

The aim of this paper is to research the attitudes of consumers towards organic products and the trust they give to the legally prescribed label for organic products on the market of the Republic of Serbia. This research uses questionnaires designed specially to obtain customer-level data in order to evaluate their attitudes towards organic products and labelling. Having in mind identified constrains and literature review, we structured questionnaires that we used in the research. The survey was conducted at the end of 2016 and the beginning of 2017, with 124 respondents older than 18 years. The survey was anonymous distributed via social networks and in direct contact with respondents. Questions included were stipulated in a way that allows statistical analysis. The questionnaire consisted of two parts. In the first part, respondents gave answers to the questions that determined their basic characteristics and identity. The second part of the questionnaire contained questions used to test their opinion about organic food and basic criteria when opting for groceries. We also tested whether consumers are willing to pay more for the organic products. Last part of the questionnaire tested the connection between organic labelling and confidence in grocery purchasing. Each question in questionnaire is given with concise explanation, in order to eliminate possible errors and ambiguities. Data analysis was performed using MS Office Excel and SPSS.

In the first part of the questionnaire, respondents were asked to give basic information such as age, gender, level of education, occupation, number of household members, monthly earnings per household member. The results are shown in Table 1. The largest number of respondents belongs to the age group of 20-35 years (64.51%), 19% of the respondents are under the age of 20, 8.87% are aged 51-65 and 0.81% are older than 65 years old. Around 46% of the respondents have secondary education, while the respondents with the university degree constitute 43.44% of the sample, 9.01% with a master's degree or doctorate. Majority of the respondents (76.61%) live in Belgrade, 10.48% in a city with a population less 100.000, 3.23% in cities with a population more than 200.000, while other places of residence make up 9.68%. Most of the samples are students (43.9%), 38.21% are employed, 12.20% are unemployed. The largest number of respondents (38.71%) live in a four-member family, respondents whose family has more than 4 members make up 21.77% of the sample, 18.55% of the respondents come from two-member families and 7.26% of the respondents with one member. Monthly income per household member up to 40,000 dinars is 39.03%, from 40,000 to 70,000 dinars is 33.33%, from 70,000 to 100,000 8.94% and more than 100,000 per household member 18.70%. 49.17% of respondents come from families with children and 51.83% are from families without children.

Table 1: Frequencies of the basic characteristics of the sample

Question	Available answers	Frequency	Percent
Gender:	female	90	72.60%
	male	34	27.40%
Age:	less than 20 years old	24	19.35%
	20-35	80	64.51%
	36-50	11	8.87%
	51-65	8	6.45%
	65 or more	1	0.81%
Education	primary school	2	1.64%
	secondary school	56	45.90%
	University degree	53	43.44%
	master degree/doctorate	11	9.01%
Place of living	Belgrade	95	76.61%
	city with a population more than 100,000	4	3.23%
	city with a population less than 100,000	13	10.48%
	other	12	9.68%
Occupation	student	57	46.34%
	employed	47	38.21%
	unemployed	15	12.20%
	other	4	3.25%
Household members	1	9	7.26%
	2	23	18.55%
	3	17	13.71%
	4	48	38.71%
	more than 4	27	21.77%
Monthly income per household member	up to 40,000 RSD	48	39.03%
	40,000-70,000 RSD	41	33.33%
	70,000-100,000 RSD	11	8.94%
	more than 100,000 RSD	23	18.70%
Family	with children	59	49.17%
	without children	61	50.83%

Source: Authors own calculation based on the survey

The second part of the survey referred to the basic knowledge that the respondents have on organic products, leaving the possibility of defining organic products. This question was intentionally left as open one, since we wanted to determine what associates them to organic products and to check later the compliance of their answers (we asked them the similar question with with and we defined answers). Most frequent responses were healthy, not contaminated/treated with chemicals/pesticides, without additives, chemistry, produced in the old fashioned way, safe, delicious, eco, special conditions for production/controlled food production, produced by respecting certain principles of organic production. It is interesting that a lot of respondents tied organic products to a food without

genetically modified organisms. On the other hand some of the respondents connect organic food with words such as expensive, too expensive, hardly accessible, not necessary, current trend. The same trend was determined when they were asked this same question with pre-defined answers.

Consumer preferences depend on a large number of factors that can be extremely variable among consumers. As much as 85.4% of respondents think that food is not safe today. However, only 1% of respondents expressed health concern in each grocery purchase, 54.9% of them occasionally express concern about purchases, while 13.8% of respondents do not express their concern about food purchases. The majority of respondents trust the information and recommendations obtained from family and friends 66.6%. Higher level of importance as a source of information have consumer protection and organic associations, together constituting 16.2%. Most dominant criteria for the selection of food is composition of the groceries, 34.1% of the respondents opted for that, 22.8% of respondents select products based on the recommendation, 14.6% take the price as the basic criterion in the selection of food, 10.6% of the respondents as the selection criterion takes the origin of the food, the fact that the product is from ecological production selected only 7.3% of the respondents, 3.3% of the respondents believe in the brands and the same percentage of the respondents has the confidence in the recommendation, composition and origin. The stamp and the trademark as the criterion for the selection of groceries has the smallest number of respondents, only 2.5% of the sample. However, when respondents evaluated the organic product mark in terms of their safety, quality and safety credentials, 27.7% rated the maximum score (grade 5), while 10.1% of the respondents rated the lowest score. Majority or respondents declared that they read the declaration on product occasionally 41.5%, and together with those who do read the declaration more than 75% are interested in the content of food products they buy. It is interesting that respondents identified the usage of genetically modified organisms as the biggest threat when buying food products (36.6%). Expiration data presents another big threat (29.3%), while 23.6% of respondents identified usage of additives/preservatives as the biggest threat. Altogether, more than 70% of risks comes from the factors that are eliminated in organic production. Detail results from the survey regarding the basic criteria when opting for food products are presented in Table 2.

Table 2: Survey results related to the basic criteria when opting for groceries

Question	Answer	Frequency	%
Do you think that the food you consume is safe?	yes	18	14.6
	no	105	85.4
Do you have concerns when buying food	yes	39	31.7
	no	17	13.8
	sometimes	67	54.5
When it comes to information about safety and quality of food you trust which sources	recommendation of family and friends	82	66.6
	the media	4	3.2
	consumer protection associations	10	8.1
	information provided by the manufacturer	9	7.3
	ministry in charge	2	1.6
	organic associations	10	8.1
	internet	1	0.8
	other	5	4.1
Please state criteria when opting for groceries	recommendation	28	22.8
	packaging / design	4	3.3
	trademark	3	2.4
	composition	42	34.1
	price	18	14.6
	brand	4	3.3
	ecological production	9	7.3
	origin	13	10.6
	other	2	1.6
Do you read the declaration on food products	Yes	43	35
	No	29	23.6
	Sometimes	51	41.5
What is the biggest risk when buying food products	expiration date	36	29.3
	pesticide residues in foods	9	7.3
	additives/preservatives	29	23.6
	genetically modified organisms	45	36.6
	other	4	3.3

Source: Authors own calculation based on the survey

Respondents also gave answers related to organic production. Most of them 81.3% considers that they do not have enough information about organic products. They connect organic products with the same things they identified when asked to define organic production. Organic product are identified as healthy (52%), ecological (21.1%) and safe (11.4%). Most of the respondents (almost 50%) buy organic products sometimes, while there is 8.9% or regular buyers. When asked if and how much money would they allocat for the purchase of organic products if they were sure that this product was better, healthier, safer, more nutritious, 56.7% of respondents stated that they would be willing to pay up to 30% higher price for such a product, 14.2% of respondents are ready to allocate 50% more money and 5% of respondents are willing to pay 100% higher price. When opting for organic

groceries, 10% of respondents stated that they would certainly choose organic product at any price while 12% of respondents would not be willing to allocate more money for an organic product.

Table 3: Survey results related to attitude about organic food

Question	Answer	Frequency	%
Do you think you have enough information about organic products	yes	23	18.7
	no	100	81.3
Your association for the term organic is	ecological	26	21.1
	healthy	64	52
	quality	6	4.9
	safe	14	11.4
	expensive	11	8.9
	other	2	1.6
Do you buy organic products	yes	11	8.9
	often	11	8.9
	sometimes	60	48.8
	not	18	14.6
	do not pay attention to whether the food I buy is organic or not	23	18.7
Would you pay more for organic products	not	18	14.6
	yes, I'm ready to pay the price up to 30%	70	57
	yes, I'm ready to pay the price higher than 50%	17	13.8
	yes, I'm ready to pay the price higher than 100%	6	4.9
	Yes, I would pay for any price for organic products	12	9.8

Source: Authors own calculation based on the survey

In the last part of the survey, respondents were shown signs that are found on certain food products that are usually found in the "healthy food" departments in Serbian grocery shops. These are labels on products that can be classified in the broadest category of "healthy", such as the green apple label, including, among others, the logo of organic products. The respondents have answered to what extent each of these signs gives them confidence in purchasing food, evaluating them with grades from 1 (very little) to 5 (very much). First four signs/labels that do not represent official/certified logo have the average values between 2.25 and 2.63. These are much lower values compared to the values obtained for official certified logo for organic product 3.63. This indicates that the consumers recognize official

labeling as a sign of trust, security, food products with high nutrition value and quality.

Table 4: Survey results related to different labels

	Logo 1	**Logo 2**	**Logo 3**	**Logo 4**	**Certified logo of organic products**
Average values	2.63	2.25	2.56	2.40	3.63
Standard deviation	1.05	1.10	1.26	1.17	1.26

Source: Authors own calculation based on the survey

5. CONCLUSION

Based on the conducted research, it can be concluded that consumers in the Republic of Serbia today are certainly aware of the quality of organic products but also they consider other important issues such as food safety, health safety, origin and quality. A large number of consumers are ready to allocate more money to buy organic products due to the quality, safety and nutrition of these products. However, only 2.5% of respondents value products based on trademark and organic label. This indicates a relatively small significance for the consumers in the domestic market when they decide on the purchase of the product. Bearing in mind that it is precisely the sign of organic products that is the only guarantee that the product is truly produced in accordance with the principles of organic production and that the producer himself has undergone a rigorous process of control and certification, it is necessary for consumers to pay more attention to the presence of this label when making decisions about purchase.

The role of the state is extremely important in the process of bringing organic products closer to consumers and raising awareness about the importance of organic products, numerous benefits for consumers, producers and the environment in which they grow and produce. Research in the United States, Great Britain, Denmark and Sweden has shown that trust in organic food labeling is the highest in countries with a significant state participation. This is very important in order to prevent unfair competition in terms of misuse of certain terms in the product name, which misleads buyers in terms of quality and who have not undergone a rigorous process of control of competent institutions and are offered on the market as healthy and biologically.

At this stage of our research we are aware of numerous limitations of this analysis. Further effort should be made to stratify and increase the sample in the research.

ACKNOWLEDGEMENT

This chapter is written as a part of the research projects OI 179001, financed by the Ministry of Education, Science, and Technological Development of the Republic of Serbia.

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VALUE OF AGRICULTURAL LAND AS NATURAL RESOURCE

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Abstract: *For some of the natural resources, productive economic use in the function of development is conditioned by monetary investments and technological innovations. The change of ownership rights over natural resources, especially agricultural land as a natural capital asset is specific, because natural resources represent the national wealth of the countries in which they are located. This paper presents the approach by which the market prices of agricultural land are formed indirectly on the basis of the volatility of market prices of the products arising from the exploitation of natural capital assets. The paper contains the empirical analysis of the prices of agricultural land in Serbia. Protected natural resources, as special forms of natural capital assets, do not have market value, and indirect evaluation is based on hedonistic models as well as the expenditure models to cover the costs of protection and readiness to pay for the maintenance of biodiversity.*

Keywords*: natural resources, natural capital assets, agricultural land, price of agricultural land*

1. INTRODUCTION

Natural resources, natural capital assets, land in general, agricultural and forest land, mineral resources, hydrocarbon deposits and ore represent fundamentally different factors of production compared to other factors, such as labor and capital. The created capital, as physical assets in the form of equipment and applied technologies, is relatively easily change location. Unlike natural resources, these created assets as production capacities are relatively easy to move from one location to another. Innovations as a product of the development of human knowledge and its application in production represent a universal common good, which in short term is characterized by relative immobility. In a long term innovations are goods which become a general value available to people regardless of territorial divisions.

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Innovations are products of human knowledge, i.e. intangible assets. Innovations influence the production of economic values through practical production, changing the previous and introducing new, more economically efficient ways of production. The key feature of this process is to reduce the participation of immediate human labor and increase the volume of material production of goods and services. Schumpeter (1975) calls this process 'creative destruction'. The created capital that is present in the form of buildings and infrastructure, as a different spectrum of physical assets, is located within a market. Over these assets, property rights can be changed relatively easily, while their market location remains unchanged.

Physical assets presented in the form of manufactured goods easily change the market, moving from the market where they are manufactured to the markets where they will be spent. Services, depending on their form and structure, are mostly related to the immediate local market where they are rendered. In such cases, the services are offerd only at the local markets where they are rendered (tourist services, servicing, warehousing services, transport, etc.). Service users in such cases represent a demand market, so consumers (customers) of services move to places where these services can be rendered. However, there are service sectors that are market-differentiated according to the market where they appeared and the market where they may be consumed. In such cases, the rendering of services and their use are settled at completely separate locations. These services are conditioned by the development of new information technologies and include the following: financial services, intellectual services and education services. A special form of created capital consists of financial assets which, in the conditions of the developed global market, move from one market to another relatively easily, even in few minutes. These are transfers of financial assets, loans, bonds and receivables. Labor as a special form of natural capital assets or the ability of a human being is a relatively mobile factor of production and is conditioned by the allocation of production resources, differences in economic development between countries, the level of education, differences in individual capabilities of human capital, characteristic for each individual.

Agricultural land, as an integral part of total land or part of total natural resources, represents a resource with a fixed offer. Natural resources are bound to the borders of a state whose territory they make and are one of the essential constituent elements of the existence of the state. Land, i.e. the territory along with population and sovereignty make the three interrelated preconditions for the constitution and existence of a community organized in the form of a state. Agricultural land as a fixed natural, production and existential factor is defined as inherited natural capital asset. From the economic point of view land as a natural resource and

natural capital asset may be considered as total fixed assets. Agricultural land as the subject of market transactions does not change its market position. However, as a factor of production it is subject to the change of ownership over it, depending on national or regional regulations. The change of title rights between citizens and legal entities within individual countries is most often liberal with certain anti-monopoly restrictions.

There are no defined property rights over certain parts of land, forest ecosystems and biodiversities that enjoy special protection. These are areas that represent special natural values and ambiences such as national parks, nature reserves, special protected areas, waters, ponds, forest ecosystems. In these cases, these are common natural assets (Ostrom, 2006) whose survival is protected by special customary norms or state regulations.

The explanation of the method by which the price of agricultural land is formed requires a complex approach and cannot be reduced only to the forms of the standard model of supply and demand. A number of factors influence the formation of prices of agricultural land as a natural asset, that is, natural capital asset. It may seem that the prices of agricultural land reflect the changes in supply and demand for agricultural land as a natural resource. However, they are determined indirectly and depend on the demand for agricultural land products. According to the facts mentioned above, the price of aricultural land depends on the changes in supply and demand for goods generated from production processes, which take place alongside the combination of the use of natural capital assets (agricultural land) and fixed i.e. created capital. Fixed or created capital (technology, innovation, financial assets) significantly affects the deformation of prices of agricultural land as a natural resource. Regarding the use of created, i.e. fixed capital and agricultural land as a natural resource (capital), the priority is given to the created capital in relation to natural resources. The consequence of this approach is can undisputedly be interpreted, as follows: if prices of agricultural products grow, the market price of agricultural land increases and vice versa. The standard matrix for displaying changes in the impact of supply and demand on the prices of agricultural products is logical and satisfactory at first sight. However, it has a limited value in explaining the change in the price of agricultural land. The limitation is due to the fact that the total supply of agricultural land as a natural asset or natural capital asset is fixed. The supply of agricultural products resulting from the use of agricultural land is variable and depends on a number of other factors. In addition to the application of technological innovations and improvements arising from agri-technical measures, restrictions also arise because agricultural production in developed countries is stimulated by a series of economic policy measures.

In particular, this applies to direct and indirect subsidies. Changes in the use of natural capital depend on the application of technology and innovations in the processing of agricultural land. The question arises whether it is theoretically and methodologically acceptable to observe agricultural land exclusively as any other created capital. This controversy is discussed in this paper. Unlike agricultural land where its economic value is derived from the market effects of products obtained from the use of that resource. The value of protected natural resources, i.e. common goods, does not have any implicit values. It has general social value and is most often measured indirectly with the application of subjective considerations, usefulness and readiness to pay or willingness to accept it.

In addition to the introduction and conclusion, the paper contains literature review, the theoretical and methodological aspects as well as the empirical analysis of the prices of agricultural land in Serbia.

2. LITERATURE REVIEW

Katić, Simonović (2007) analyze the Law on Agricultural Land of the Republic of Serbia from 2006. These authors state that agricultural land is a basic, irreplaceable and non-renewable factor of agricultural production. Katić, Simonović (2007) consider that agricultural land is of a crucial importance for the survival and development of a particular community. Plantinga et al. (2002) determine the value of agricultural land at the national level for the United States. Bastian et al. (2002) also determine the value of agricultural land taking into account ecological conditions. Planting, Miller (2001) explore the value of agricultural land as well as the value of the rights for future land development.

Paraušić, Cvijanović (2014) analyze agricultural holdings in the Republic of Serbia according to their economic size and present them in a comparative analysis with selected European Union (EU) countries. These authors note the extremely low economic power of domestic agricultural producers in comparison with farmers in developed EU countries, which initiates proposing of the measures and activities aimed at their economic empowerment and creating a sustainable competitive advantage on the domestic and foreign markets. Lovrinčević, Vizek (2008) analyze the prices and rent of agricultural land in Croatia and other EU member states from 2001 to 2006. Renwick et al. (2013) examine the potential impact of the agricultural and trade policy reform on the use of land throughout the EU, focusing on the issue of land abandoning. Grbić et al. (2016) analyse contemporary trends in agriculture of European Union.

Pejanović (2009) considers the development problems of agriculture in the Republic of Serbia. The author analyzes the importance of agriculture in the Serbian economy, the contribution it provides through the foreign trade exchange of agricultural products. Pejanović (2009) points out six groups of problems in agriculture in the Republic of Serbia: (1) unfavorable agricultural structure and non-organization of commodity producers; (2) the unregulated turnover of agrarian products; (3) non-competitiveness; (4) the inadequate role of the state; (5) demographic problems of the agricultural population; (6) the impact of the global economic crisis. Pejanović (2007) analyzes the concept of development of sustainable agriculture in the Republic of Serbia. This author believes that this concept is potentially the best solution for the Republic of Serbia. Pejanović (2007) states that the concept of developing sustainable agriculture goes along with the modern European model of agricultural development.

The term ecological agriculture implies a specific system of sustainable management in agriculture with the aim of producing healthy foods, that is, satisfying the appropriate social and household needs while preserving natural ecosystems and landscapes (Pejnović et al., 2012). Kljajić et al. (2012) consider the land as an ecological factor of agricultural production in Serbia. Therefore, these authors cite the types of land in the Republic of Serbia, the rating classes, the structure of the land use, the causes of degradation, the flooded areas and the areas defended from the floods, as well as the main harmful processes that take place in agricultural land, the main polluters of land and finally the basic protection measure and the strategic goals of sustainable land use. Pejnović et al. (2012) explore the problems and possibilities of development of ecological agriculture in Croatia from the perspective of ecological producers. The results of the survey by these authors show that this form of agricultural production in Croatia faces numerous problems and is still at a low level of development. Ecological agricultural production in Croatia is analyzed by Puđak, Bokan (2011) and Petljak (2011). Milanović, Cvijanović (2009) analyze the problems of sustainability[1] and the possibility of economic evaluation of agri-ecological resources. Subić et al. (2005) consider that economic activity in agriculture is directly and indirectly related to the land, as its basic means of production and an important element of agricultural capital. Subić et al. (2005) state that the land is not only the basic factor of production, but also the basis of food safety for the population; it is the most valuable natural resource, which directly influences the development of rural communities and the survival of a rural family.

[1] Sousa Andrade (2007) explains mobility of capital and external sustainability of the Portuguese economy.

Alonso (1964) develops a general theory of soil values and land use in cities and regions. Namely, Alonso expands the theory of renting, which is explicitly formulated only for agriculture, to urban area. This author shows that the rent theory is complex and includes variations in the size of location, income, profits and other costs. Alonso (1964) includes mathematical models on the theory of renting and the location and density of residences and firms, agricultural rent and uniform land value structure as well as the use of land in urban and rural areas. Capozza, Helsley (1989) analyze the basic land prices and their growth in urban areas. Namely, these authors consider that the forecasting of urban land prices has four components: the value of renting agricultural land, the cost of conversion, the value of accessibility and the expected increase in revenue in the future, the growth premium. Shi et al. (1997) combine models for the value of agricultural land and those for urban areas. While Hardie et al. (2000) use the land-rent models, including farms, forests and urban land.

Plantinga, Miller (2001) explore the value of agricultural land and the value of the rights of future land development. These authors developed the model of the value of agricultural land that was derived from the theoretical model of the market for developed and agricultural land. Plantinga, Miller (2001) showed that the data from their application are consistent with the theory of the value of agricultural land. Therefore, their findings have implications for future research on the value of agricultural land.

Drašković et al. (2014) analyze the importance of protected natural areas for the sustainable development of Serbia, while in Drašković et al. (2013) the problems of the value and valuation of natural resources and their cost-benefits are considered. Drašković (2012) discusses the economic aspects of environmental policy in Serbia, while in Drašković (2013) management of resources in protected areas in Serbia are discussed. Drašković (1998) considers the economy of natural capital, valuation and protection of natural resources. Minović et al. (2016) makes a model and observes the behavior of prey-predator species. Drašković, Minović (2012) are trying to determine the external costs in ecological systems as parameters of sustainable management. Serbian natural resources and their influence on the development are studied by Drašković, Minović (2013).

3. THEORETICAL AND METHODOLOGICAL ASPECTS

Since the end of the 19th century modern economics has been focused on studying, analyzing and discovering the ways of economic functioning of the created fixed and financial capital and their mutual relations. The analysis and observation of natural assets as natural capital has not been the focus of economic research. The

exceptions are the areas of ecological economy, which deal with complex relations between economy and environmental protection. The subjects of research of the ecological economy are the following: sustainable development, environmental damage, trading pollution rights, measures of economic policy related to 'polluter pays' and damages that arise from global warming and climate change. Except for environmental protection economics, economic science has not explored the issues of the economic importance of natural capital, set by Ricardo (1821, 2012). Contemporary economic theory, unlike the classical one, neglected to consider complex issues related to the mutual relationship between created and natural capital. Nowadays, natural capital and natural capital assets in the prevailing economic theory are treated exclusively regarding their utility by applying fundamental models of supply and demand analysis for rare or scarce resources. In theory, the trends in economic science have differentiated in relation to the problem of the theory of value in two directions: the first, which is dominant today is the marginalist, i.e. the subjective theory; the second, work theory of values originates from the classical economic theory. The work theory of values sets human labour at the center of attention and considers it the creator of values. This theoretical concept was abandoned since the first decades of the twentieth century, after the socialist revolution in Russia. In the socialist countries, the model itself is simplified and ideologized. Both approaches marginalized the role of natural resources as a constituent of commodity value.

This paper deals with agricultural land as a natural capital asset. For the needs of the analysis, a methodological classification of capital forms is made as follows: natural capital, human capital and created capital. The common characteristic of the first two capitals is inherent in nature. Natural capital in a wider sense represents the entire natural wealth that has been created independent of human activity, regardless of being the object directly used in the production process. Also, a human being is *de facto* a being of nature. Natural capital includes continual resources, solar energy, gravity force, wind power, circulation of air and water in various states. Natural capital includes non-renewable and renewable resources, flora and fauna, mineral resources and hydrocarbons. Human capital is actually a human being as a natural and social being, who is educated, who carries cultural heritage and the ability to innovate through interventions within natural laws. Created capital includes cumulative fixed and financial capital assets. The origin of fixed capital lies in the activities of previous and current generations of people. It covers the infrastructure, buildings, machines and equipment. Financial capital represents cumulative money and financial assets, or financial capital.

The influence of natural capital on the creation of economic values has remained out of the interest of contemporary economic theory. The role of natural resources

is analyzed from two points of view. The first refers to the issues of economic aspects of environmental pollution and economic implications arising from climate change. The second group of issues relates to problems related to the dynamics of natural capital exploitation, i.e. renewable and non-renewable natural resources. Natural resources are understood as natural capital assets and as a condition for the emergence of commodity and, therefore, market values. It follows that natural capital assets are viewed as an important factor in the creation of commodity or market value.

It is necessary here to try to define the essential dimensions of the content of the terms such as natural wealth, natural values and natural capital assets. Natural wealth is broader terms and includes all goods created independent of human activity. These goods are "natural gifts". They consist of the following: land, geological heritage, air, sea, oceans, and therefore all waters, plant and animal species as well as renewable and non-renewable, as well as continual resources. Natural wealth assumes features of natural values, depending on how and in what way the human being manages to discover and use the laws of nature. Men wanted to subdue them to their civilization and economic progress and make them serve their needs. Men have managed to subdue many natural resources with the aid of technological innovations and bring them into the form of useful power and ready for human use.

Natural wealth, when used as production resources and consequently in economic activities, become natural capital assets and are later transformed into a created capital. This process is conditioned by the development of human knowledge and the discovery of new production technologies. Depending on the technological development, some natural assets were inaccessible to human productive activity prior to the emergence of technological innovations. After the discovery of new technological knowledge, natural assets become economically useful production resources. They become natural capital assets, as a source for the creation of created or produced capital. Part of natural assets or natural values such as protected natural areas, national parks, ambiental areas have ambiental but not economic value due to legal constraints. Natural wealth, suitable for economic exploitation under the conditions of defined title rights and market oriented production, become the means of exchange of goods. Obtaining this feature they get a market price. Innovations and technological advancements based on them are of the fundamental importance for the transformation of the natural wealth, i.e. natural capital into the market capital. Technological advances based on scientific knowledge and discoveries allow the elements of untouched nature to be transformed into goods, giving it market value in the context of supply and demand.

Firstly, the land represents a natural good and a natural resource that, through human usage, has been transformed from natural capital to market capital, i.e., economic capital. The process was developed in two ways. The first arises and is based on the fact that the land as a natural wealth contains a lot of natural resources. They are influenced by other resources, the power of the sun and the natural resources of the influence of the climate and the humidity as well as the heat, and as such represent an environment in which nature independent of a man, creates flora and fauna as the material and the substance necessary for human existence. Prior to any organized production activities of human beings, food harvesting and hunting represent the primary use of raw materials for immediate existential consumption. Human activity was reduced to the amount of time that is needed to carry out the activity of collecting or the activity of hunting.

The other method related to land refers to the transformation of land as a natural capital asset into the created capital, on the basis of products obtained from the use or processing of agricultural land. Products obtained from the use of land as natural resources become commodities. Goods are nothing but material substances obtained from the nature, which become created capital. Economic relations are developed on them, which in the following iterations of economic development lead to the emergence of money capital. Money capital is created through the exchange of products between different social groups within the division of labor. Land as a natural wealth, i.e. natural capital asset, represents the basis from which capital is created, a market product that, in the competition of production, exchange, supply and demand, receives a monetary form. Land as a natural wealth without economic function cannot be defined as natural capital asset because it is not a commodity yet and has no essential characteristics of the created capital.

In order to avoid confusion in understanding the concepts, the created capital represents the capital that emerged from the economic or productive activity of a human being, and which has become the subject of market transactions. Agricultural products derived from the use of land as a natural wealth are created, i.e. produced capital and, through exchange, they acquire market value. Due to the historical development of mankind and the creation of institutions, title rights have been established over land as a natural wealth. The process took place through the growth of population and establishment of settlements at empty spaces, the conquest and division of rights over land within communities. The land as a natural wealth, under the influence of market relations, becomes a classical capital even though it is not created by men. Establishing the title rights over land as a natural asset results in the fact that land becomes the subject of market transactions. These transactions are carried out in the same way as in the case of created or produced capital. The land as a natural wealth is transformed into the natural capital asset by

the market economy. It gives him the character of buying and selling, regardless of the fact that the land itself has not been created as a product of any kind of human activity.

Agricultural land as a self-sufficient natural resource, after the negotiation of title rights, becomes natural capital asset and as such, regardless of the fact that it is not created by human labor, it is subject to free market transactions. Being the subject of supply and demand the land acquires derived market value under the conditions of competition[2]. Taking into consideration the historical context, it can be noted that different systems had different treatment of property rights over land (territory) in general and therefore over agricultural land. Regarding the consideration of the relationship between natural assets, natural and created capital, the issue of the irreversibility of created, fixed and financial capital into natural capital is not less important. In the previous part of this paper, some of the aspects of mutual relations between natural and created capital have been explained. Consequently, natural assets and natural capital, along with the creative work of human beings, are the source of the created fixed and financial capital. The emergence and dynamics of the production of fixed, created capital depends on the available natural resources, the development of the capabilities of human labor and technological innovations.

Agricultural land is a natural self-renewable resource that can be renewed with a combination of "resting" the land (restriction from exploitation) for a certain period of time, as well as financial investments in irrigation, maintenance of biodiversity, applying natural methods of self-replenishment of land. A wider aspect of the protection of agricultural land is of global character and refers to the reduction of negative effects of economic activity on climate change.

Land in general, as well as forests, waters, lakes, oceans and the atmosphere, are natural self-renewing resource. All of them are directly or indirectly an indispensable condition for the economic activity of a human being. Land as a complex and diverse geological structure serves as a source for the production of fixed assets and financial capital. Products based on natural capital become marketable goods and are subject to the laws of supply and demand and derived market values or prices.

[2] This paper does not deal with the aspects of changes in market prices of agricultural land on the occasion of the change of its purpose from agricultural land into a construction site.

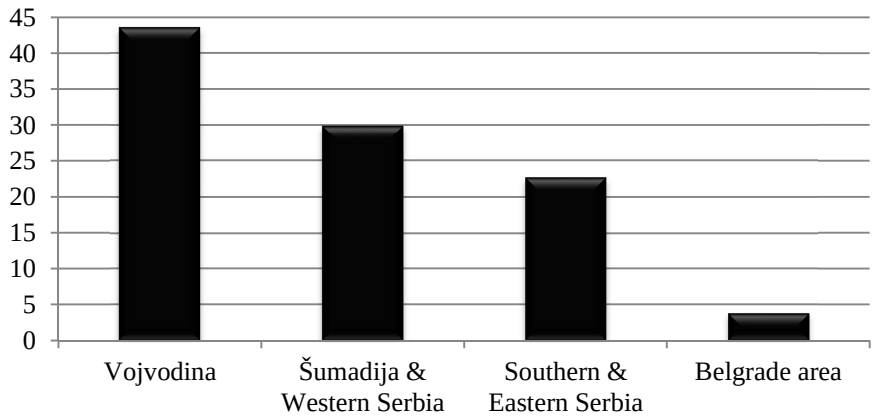
4. PRICES OF AGRICULTURAL LAND IN SERBIA

In accordance with the standard theory of supply and demand, the prices of agricultural land are conditioned and change depending on the quantities offered as well as the trends in demand for agricultural land. In fact, supply and demand for agricultural products, on the basis of which the prices of products obtained from the use of agricultural land are formed, are those that determine the fluctuation of agricultural land prices as a natural resource. Along with the change in prices of agricultural products, important factors affecting the prices of agricultural land are the following: fertility, its vicinity to road and transport infrastructure, the size of the land and state subsidies that are allocated per hectare. The prices of agricultural land in urban settlements are higher, and are conditioned by the possibility of building residential and commercial buildings.

In 2017 in Serbia subsidies amounted to about RSD 4,000 per hectare or about 34 €/ha. The mentioned amount of subsidies per hectare refers only to agricultural holdings that have up to 20 ha. Surfaces that exceed 20 ha are not covered by subsidies. Total state incentives for agriculture in 2017 amounted to RSD 29.28 billion or approximately € 244 million. The calculation of total subsidies includes subsidies given per hectare to agricultural holdings and they are increased by special subsidies which include the following: incentives for cultivation of certain crops, cattle breeding, premiums on milk production and purchase of agricultural machinery and equipment. The total sum of all subsidies on an annual level is approximately € 24 million. If divided by the total cultivable area of agricultural land in Serbia of 3.8 million ha, the calculated average amount of subsidies totals € 64.21/ha. If surfaces of about 0.4 million hectares that are not used and for which subsidies cannot be obtained are subtracted from the total area of agricultural land, it is estimated that about 3.4 million hectares are used.

Analysis of the above data shows that, in comparison to the used agricultural land, the total subsidies per hectare, on average, amount to about € 72/ha. Average subsidies per hectare within the European Union countries are far higher than in Serbia. They go over € 250/ha or it can be said that they are 3.47 times higher than in Serbia. In comparison to the European average, Serbia belongs to countries that have relatively abundant agricultural land as a natural wealth. The structure of total agricultural, forest and other land is relatively satisfactory. Namely, out of the total of 5.4 million hectares, agricultural land covers 3.8 million hectares or 72.2%, out of which 64.3% is used, and 7.9% of it is not used. Forest land is slightly above 1 million hectares or 19.1%, and the rest is about 462 thousand hectares or 8.7% (Statistical Office of the Republic of Serbia, 2012).

Figure 1: Dispersion of the total agricultural land (in %) in Serbia by regions



Source: Authors' calculation based on Statistical Office of the Republic of Serbia (2012).

Out of the total available agricultural land in Serbia, about 252 thousand hectares is state owned which is about 6.63%. It is located mainly in the region of Vojvodina. State land is leased out by local self-governments. Depending on the location and quality of the land, the average rent is about € 191/ha. In Vojvodina, the average rent is higher and ranges from 240 to €390/ha. Higher lease prices for agricultural land in Vojvodina are conditioned by the size of fields, the position and fertility of the land.

In assessing the value of agricultural land, in addition to market indicators on realized transactions, the calculation may be applied based on the discounting of rents from the leased land. The rents for cultivable agricultural land of higher fertility depending on location and quantity offered in Vojvodina are higher than in other regions of Serbia. Western and Eastern Serbia is characterized by less fertile land than Vojvodina and Šumadija.

If the amount of lease is denoted by *r*, and a discount factor with *i*, then the value of the land *x* on the basis of discounting infinite lease annuities can be calculated as follows:

$$x = \frac{r}{i} \qquad (1)$$

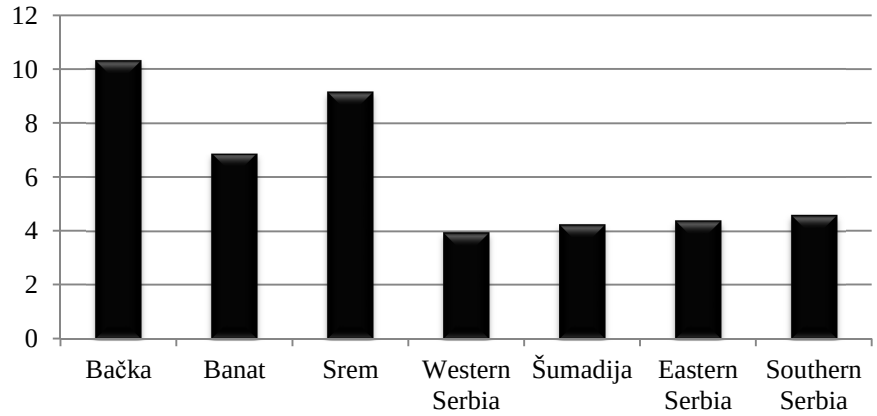
The average rent per hectare of agricultural land in Vojvodina is the mean value calculated from €240 to 390/ha or €315/ha. If the discount factor *i* is further

defined by the reference interest rate in Serbia in 2017 in an average of 4%, then, having applied the mentioned parameters in equation (1), the average value of one hectare of land is obtained and amounts to x = € 7.875/ha is obtained.

Less fertile land is rented for a lower price and with certain differences related to the cultivation of certain profitable crops, such as raspberries in Western Serbia, the amount of lease may range from the zero lease for cultivating land to protect it from decay, to the maximum rent of €150/ha in Eastern Serbia. Taking the lease amount for leasing agricultural land and applying the same discount rate of 4%, the value of agricultural land x = € 3,750/ha is obtained. The lease amount is variable in the long term and depends on the movement and stability of prices of agricultural products. The discount rate, as the reference interest rate, is also variable over the long term and depends on monetary and credit developments in the economy of a country.

The described procedure was applied for the calculation of the average based on the empirical data on the movement of the amount of rent, i.e. the lease paid for the use of agricultural land in Serbia in 2017. Certainly, the amounts of lease, and therefore the prices of agricultural land determined on the basis of the methods described above, applied to the micro location in Serbia, show that in certain depopulated rural areas in Western, Eastern and Southern Serbia, such prices are very low. Hence the value of the land using this methodological procedure cannot be calculated. There is also no market demand for the purchase of land in these areas.

Figure 2: Prices of agricultural land (€/ha) obtained in market transactions by the regions in Serbia in 2017



Source: Authors' calculation based on data provided by The Registry of real estate turnover, The Republic Geodetic Authority (2017)

For the purpose of this analysis, a sample of transactions with agricultural land in Serbia has been defined. 159 transactions were analyzed in seven regions in Serbia, where the turnover of 167 hectares of agricultural land was made, with the average transaction of 1.05 ha. The selection of data excluded some of the illogical values from the sales contracts that showed enormously low prices. This is due to the intention of the buyer and seller to display low transaction price in order to pay the lowest possible tax.

Based on the presented data, the conclusion can be drawn that the highest market prices of agricultural land are recorded in Vojvodina ranging from € 6,9 to 10,3 thousand/ha. The lowest prices of agricultural land are recorded in Western Serbia and amount to € 3.9 thousand/ha. The average price in Serbia is € 7,490/ha. The average prices of agricultural land within the EU exceed € 20,000/ha. In some areas they reach over € 50,000/ha. From the data presented above, it can be concluded that the value of agricultural land obtained by the application of the yield method from the net lease is far below its market value. Regarding market prices recorded through supply and demand on the market, the supply is relatively low, while the demand is continuous in the areas where the land is more fertile.

5. CONCLUSION

The application of standard economic methods of supply and demand does not provide a sufficiently reliable basis for explaining the value of natural wealth and natural capital assets. Agricultural land represents a special segment of natural values, i.e. natural capital assets and serves as a resource for agricultural production. Modern economic science marginalized the aspects of the analysis of agricultural land as a natural factor, which, in addition to the created fixed and human capital, participates in the creation of the market value of goods. The concept of subjective value theory is theoretically dominant which explains economic processes through supply and demand and the concept of consumer surplus. The commodity character and the formation of agricultural land prices are based on the realized demand for products produced on and from natural resources. Along with utilization of human and created capital, natural capital has the capacity to generate final agricultural products whose market price is an indicator for the revaluation of agricultural land. The specific character of agricultural land as a natural capital requires that the price formation should be observed from several points of view. Prices of agricultural land in Serbia in comparison with prices in developed countries are significantly lower. It is very important to develop methods for evaluation and preservation of natural diversity found in protected natural areas, nature reserves and national parks. In evaluation of these natural assets, methods based on standard procedures for calculating the market

equilibrium of supply and demand cannot be applied. In fact, natural assets do not have explicit economic value.

ACKNOWLEDGEMENT

Authors acknowledge funding from the Ministry of Education, Science and Technological Development of the Republic of Serbia through research projects 47009 and 179015.

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THE ROLE OF GREEN MARKETING IN ACHIEVING SUSTAINABLE DEVELOPMENT

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Abstract: *All forms of business affect the environment. In addition to the right to use natural resources, companies also have their obligations regarding their utilization. They must not be focused solely on profit, but must be socially responsible and take care of the environment. This raises the question of whether the company can be both environmentally and socially responsible and profitable at the same time. The aim of this paper is to show that it can, and one of the methods is the application of green marketing, which contributes to sustainable development. The issue of sustainability must be more closely integrated into the marketing strategy. This paper analyzes the benefits and difficulties of applying green marketing and its role in achieving sustainable development. The analysis was carried out from several aspects - the position of the main subjects in this field (consumers, enterprises, countries) was examined. For this purpose, the "meta" empirical analysis was applied - data from existing empirical research were used to obtain the results and conclusions of this paper. Since the aim of the paper is to give recommendations and examples of the green marketing application in enterprises, in addition to the research of the existing literature, we used the method of case studies analysis.*

Keywords: *green marketing, sustainable development, social responsibility, environmental awareness*

1. INTRODUCTION AND LITERATURE REVIEW

Globally we are facing many challenges related to the environment. To overcome them, numerous concepts and approaches have been developed. One of them is green marketing, which responds to the needs of ecologically-conscious consumers. There are numerous definitions of green marketing. The most widely used and cited is the definition of the American Marketing Association, according to which green marketing is defined as the marketing of those products that are safe in respect of the environment, organic and have no harmful effects on the

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environment. Today, consumers, and even companies, are increasingly concerned about the consequences of their actions on the environment and the environment in which they operate. Thus, the application of green marketing implies numerous changes in approach, which primarily relate to the modification of the basic elements of the marketing mix. Green marketing also implies a holistic concept, because all activities must be coordinated in order to protect the environment. Particular attention must be paid to the way products are manufactured and how they are consumed (Domazet, Jovanović, 2016).

In the literature, green marketing can also be found as organic marketing, sustainable marketing, and environment marketing, because this is exactly what reflects its focus. Applying the concept of green marketing provides benefits to individuals, organizations and the environment. It helps individuals take care of their health more actively, by assisting them to use healthy products, and enables companies to save on resources and reduce costs, which will result in reduced harmful effects on the environment. Green marketing is also one of the most important business strategies that helps in ensuring sustainable development. As sustainable marketing implies meeting current needs without sacrificing the benefits of future generations (Li, Cai, 2009), the application of green marketing is one of the methods to bring it into practice, because it promotes ways to save and rationally utilize limited resources. Both concepts have the ultimate goal of protecting the environment. This work is aimed at analyzing the impact of the green marketing concept on achieving sustainable development. In particular, the application of green marketing strategies in the countries of the former Yugoslavia and examples of good practice are analyzed.

The concept of green marketing originated in the 1970s - 1980s. The American Marketing Association organized the first workshop on Ecological Marketing in 1975. In the eighties, some theorists have begun to deal with this topic, and it was in practice in the nineties, with the beginning of production of environmentally friendly products, as well as with developing marketing and business concepts that support this process. Some of the scholars who initially dealt with this issue were Stanton and Futrell (1987), as well as the Mint and Lozanda (1993). The essence of their concepts is that green marketing, in a wider sense, implies the marketing of activities that will make the exchange that satisfies the needs and aspirations of consumers, while reducing the impact of these activities on the physical environment, possible (quoted by Singh, Singh, Sharma, 2016).

Green marketing refers to the organization's efforts in production, promotion, pricing and distribution that will not harm the environment (Pride and Ferrell, 1993). Polonsky (1994) considers that green marketing consists of activities

designed to generate and monitor exchange that aims to meet the needs and desires of people, so that this satisfaction is occurring with minimal harmful effects on the natural environment.

Green marketing mix consists of elements and "eco-friendly" products, designed in such a way that has the least harmful impact on the environment and, with the help of natural resources, can satisfy consumer preferences that are unlimited (Chitra, 2007). From all the above definitions it can be concluded that green marketing promotes a way of doing business that aims to create products that will use the minimum resources in order to meet the needs of consumers.

On the other hand, sustainable development implies a development that responds to existing needs without compromising the ability of future generations to meet their needs (World Commission on Environment and Development, 1987). Sustainable development is the framework for creating policies and strategies for sustainable economic and social progress. It can be understood as maintaining a balance between the use, storage and restoration of all resources. The overall goal of sustainable development is the long-term sustainability of the economy and the environment, which will be achieved by integrating economic, environmental and social aspects of the decision-making process (Domazet, Simović, 2015).

Green marketing and sustainable development are linked to common goals, so different green marketing activities impact on achieving sustainable development: the production of environmentally friendly products, the use of recyclable materials that are biodegradable in packaging, the production and business process without environmental pollution – focused on the efficient use of energy, the application of efficient waste management (Domazet, Pantić, 2015). The concept of green marketing is crucial for achieving sustainable development for the following reasons: it contributes to cost savings, leads to the expansion of exports – as there are no issues with "green" bans, helps to establish the company's "green image", enables the company to be more competitive, helps the company to avoid "green taxes" (Zaharia, Zaharia, Tudorescu, 2010).

As sustainable development implies that satisfying needs is done without destroying the benefits of the future, green marketing has to change the classical marketing concept in order to contribute to it. This change must include product modification, changes in the production process, packaging, and promotion. The focus is a green product that does not contain harmful components and does not pollute the environment.

1.1. The goals of green marketing

Green marketing seeks to respond to the needs of ecologically responsible consumers. In order to be successfully applied, it must be accompanied by market and economic conditions, which encourage its development. To a large extent, this concept is also linked to socially responsible business, where business success is not focused solely on profit but also on environmental protection. In that sense, companies that apply green marketing do this in two ways: internally - investing in people and technologies that will be able to produce a green marketing mix, and externally - they are trying to have a positive influence on the local community. The basic tools of the green marketing mix are: green product, whose production does not disturb the environment, and the resources are consumed in rational quantities; Packaging, which respects the 3R concept (Reduce-use as little material as possible-Reuse-Recycle); Price - companies must strive to find the right price, since the price for green products is higher and the question is whether consumers will be willing to pay for it; and Promotion, where the green labels are used.

The main goals of green marketing are the following (Mishra, Sharma, 2014):

- To eliminate the concept of surplus,
- To modify the concept of the product,
- Prices must reflect actual and environmental costs,
- To make the environment profitable,
- To make changes in product manufacturing processes,
- To make changes in packaging,
- To modify advertising.

The green marketing concept implies that businesses find a way to reuse the surplus that remains from production. Accordingly, limited resources are saved. Green products are different from traditional ones because they are produced from materials that do not pollute the environment and are healthier for consumers. The prices of green products are, as a rule, higher because they have to cover the costs of the environment. On the other hand, they must not be at a level that is unacceptable to consumers. Therefore, companies should define prices that would meet both criteria. Companies using the concept of green marketing should demonstrate that this can also make them profitable, but that the profit is not the only goal of their business. Changes in production processes mean that energy saving measures are implemented, as well as that the environment is not polluted. Packaging in green marketing uses the 3R concept, as recyclable materials are used. When promoting, and in particular advertising, it is necessary to create messages that motivate consumers to use green products. An interesting challenge

lies in the fact that it is difficult to find evidence for statements promoting the use of green products.

1.2. Reasons for using green marketing

There are numerous reasons for using green marketing, which can be observed from the perspective of consumers, and from the perspective of organizations. With green marketing, consumers are given the opportunity to reach the products that are good for their health, which at the same time do not disturb the environment, for which they are increasingly concerned (Pantić, Đuričin, 2015). Green marketing gives companies the ability to re-brand their products, create specific product lines and to achieve their goals, along with the rational use of resources. The question arises as to whether the business can be environmentally responsible and profitable at the same time? Although green business seems to be more expensive, it offers certain advantages, which are (Bhaskar, Scholar, 2013):

- Opportunity to reach their goals,
- A moral obligation for social responsibility,
- Government bodies force companies to become more responsible,
- Competition aimed at protecting the environment,
- High costs, and on the other hand, availability of surplus.

The need for green marketing is increasing due to the problems of global warming, ozone depletion... On the other hand, more and more people are interested in environmental issues. Green marketing provides a good basis for the development of social entrepreneurship, as profit and non-profit organizations can unite on the environmental protection. This creates entrepreneurship of green communities – the collective ability to mobilize resources, including social capital, in order to provide products or services that are more focused on environmental protection than maximizing profits.

1.3. Issues with the application of green marketing

Often, the benefits of green marketing cannot be manifested only through money. Many companies question the actual effectiveness of green marketing, while others have difficulties to effectively communicate or fulfill what they claim. On the other hand, consumers themselves are very skeptical.

The application of green marketing is often observed only from the micro level, i.e. enterprise level, though broader – macro factors must particularly be taken into consideration.

The issues that businesses most often face are:

- Companies must be sure that their green activities are not contradictory to the consumers or the economic branch in which they operate,
- Companies must be sure that their actions do not violate laws and other regulations,
- There is a lack of standards to prove statements used in green marketing campaigns,
- Environmental protection must be considered as a long-term investment,
- Green marketing has to focus on consumer benefits.

In order to overcome these issues, companies must first of all change their way of doing business, which implies a modified marketing mix, and in addition, people and technology adapted to new production processes. In addition, it is necessary to work on continuous education of consumers and strengthening their awareness about the importance of consuming green products, both for their health and for the protection of the environment. One should not forget the importance of institutional and overall social support to these processes (Pavlović, Ljumović, 2016). Responsible government institutions must recognize the importance of green action, and adopt adequate strategies to manage these activities in a sustainable way, with a long-term orientation.

2. RESEARCH AND METHODOLOGY

For the purpose of this paper, the results of the research that came within the PhD thesis "Marketing with a social goal and ecologically responsible behavior of consumers from the territory of the former Yugoslavia" were used (Raletić Jotanović, 2017). 1550 respondents participated in cross-cultural research, conducted in the territory of the former Yugoslavia, on the topic of ecologically responsible behavior of consumers and marketing with a social goal, used as a stimulus for increasing the environmental awareness of consumers. The basic research set included about 19 million people from: Serbia 7,186,862, Croatia 4,284,889, Bosnia and Herzegovina 3,827,343, Montenegro 620,029, Slovenia 2,063,371 and Macedonia 2,107,037. The analyzed demographic characteristics of the sample are: state, gender, age, professional qualification and monthly income of the household.

If the structure of the sample is observed according to the countries from which respondents come from, out of 1550 respondents: 276 are from Serbia, 250 from Croatia, 265 from Bosnia and Herzegovina, 250 from Montenegro, 253 from Macedonia and 256 from Slovenia. That is, from 100% of the sample: 17.81% is

from Serbia, 16.13% from Croatia, 17.09% from Bosnia and Herzegovina, 16.13% from Montenegro, 16.32% from Macedonia, and 16.52% from Slovenia.

If the structure of the sample is analyzed according to gender, it is concluded that the majority of the sample – 62.90% or 975 subjects are women, while men make 37.10% or 575 respondents.

When considering the age structure of the sample, respondents aged 18 to 30 make up the majority of the sample – 50.77% or 787 subjects. The second category by size are the respondents aged 31 to 40 with 25.23% or 391 subjects. Respondents aged 41 to 50 make up 12.52% or 194 subjects, 51 to 60 years old make 7.68%, or 119 subjects, while respondents between 61 and 70 years make up 2.65% of the sample, with 41 subjects. Only 11 respondents (<1%) were between the ages of 71 and 80, while 7 respondents did not answer the question of age.

When considering the structure of the sample according to the professional qualification, there is the same number of respondents – 39.81%, or 617 subjects who completed a college/university and those who have a high school diploma. These categories constitute the majority of respondents in the sample. Respondents with completed master studies, magistracy or doctorate make 19.16% of the sample, which makes 297 respondents. Only 15 respondents (<1%) have completed primary school, while 4 respondents did not provide information on the professional qualification.

The majority of the sample are households with average monthly income, 48.90% or 758 respondents. Respondents living in households below average monthly income make up 33.68% of the sample, or 522 respondents. The smallest number of respondents, 17.30% or more precisely 268 subjects, live in households where the monthly income is above the average. Two respondents did not answer the question about the monthly income of their households.

The sampling methods used are the stratified sample method and the simple random sample method. The population of consumers from the territory of the former Yugoslavia, which makes up about 19 million people, is divided into six strata, i.e. six countries from the territory of the former Yugoslavia: Serbia, Croatia, Bosnia and Herzegovina, Montenegro, Macedonia and Slovenia. A simple random sample method was used to randomly select subjects from each strata.

The technique used in the research is a questionnaire. First, a pilot questionnaire was created, followed by the final questionnaire, with some corrections. The final questionnaire consists of three parts. In addition to the introductory, which implied

the respondents' consent, the second part contains demographic questions, which are related to the following characteristics of the respondents: state, gender, age, education and monthly household income. Issues related to the state, gender, education and monthly household income are closed type, while the question regarding the age of the respondents is of open type.

The third part consists of two sub-questionnaires:

a) Questionnaire for examining the environmentally responsible behavior of consumers. It contains a total of 28 questions for determining four different types of behavior: 1) environmentally responsible buying 2) consuming products in an environmentally friendly manner 3) waste disposal so as not to degrade the environment and 4) post-use of the product. Every behavior is analyzed through seven different types of products: 1) food and beverages 2) home care 3) clothes and footwear 4) furniture 5) electrical appliances 6) transportation and 7) office supplies.
b) Questionnaire for examining elements of marketing with a social goal as a stimulus for the environmentally responsible behavior of consumers. It contains 31 questions: 1) price - 8 items, 2) distribution - 4 items, 3) promotion - 12 items, 4) previous experience - 3 items, 5) creativity - 3 items, and 6) partnership - 1 item.

Descriptive statistics were used to determine the frequencies of different types of environmentally responsible behavior: environmentally responsible purchasing, consuming products in an environmentally friendly manner, disposing of waste to avoid degradation of the environment and post-use of products by countries: Serbia, Croatia, Montenegro, Bosnia and Herzegovina, Macedonia and Slovenia. In addition, the same method was used to determine the frequencies of different elements of marketing with a social goal as a stimulus for environmentally responsible behavior: prices, distribution, promotion, partnership, previous experience and creativity.

3. RESULTS

The most important research results selected for the purpose of this work are:

- There are differences in ecologically responsible purchasing, among consumers from Montenegro and all other former Yugoslav countries, where consumers from Montenegro are significantly less responsive to environmental purchases. Consumers from Montenegro buy ecologic products to a lesser extent.

- There are differences in the consumption of products in an environmentally friendly way, among consumers from Montenegro in relation to consumers from Serbia, Croatia, Slovenia and Macedonia, where consumers from Montenegro considerably less consume products in an environmentally friendly manner. Consumers from Montenegro, for example, do not save enough energy, do not buy in second-hand shops...
- Consumers from Montenegro are next to the last in respect of waste disposal in an environmentally friendly manner (consumers from Macedonia are on the last place).
- Respondents from Montenegro consume products for post-use, to the least extent compared to others.
- Consumers from Montenegro consider distribution as a stimulant of ecologically responsible behavior to a lesser extent comparing to consumers from Serbia and Macedonia.
- Consumers from Montenegro are significantly less willing to change their behavior towards an ecologically more responsible under the influence of commercial propaganda.
- Respondents from Montenegro are least willing to invest money for the purpose of ecologically responsible behavior as consumers.
- Respondents from Montenegro are least willing to invest time for the purpose of ecologically responsible behavior as consumers.
- The partnership between the state institution and the company is the most stimulating partnership when it comes to increasing the ecologically responsible behavior of consumers from Montenegro. Partnerships that are least stimulating for the environmentally responsible behavior of consumers are: a) international institutions, companies and celebrities, b) state institutions, NGOs and celebrities, and c) international institutions, celebrities, companies and NGOs.
- According to demographic characteristics, foremost consumers who behave ecologically responsible are: women, elderly consumers, those with a higher education and those whose income is above the average.

This research shows that, compared to other consumers from the former Yugoslavia, consumers from Montenegro are less ecologically aware and willing to buy products that are safe for their health and environment. This data is quite surprising, since Montenegro is an ecological state, although it would be necessary to conduct a more detailed analysis to determine the real causes of this situation. One of these reasons probably lies in the habits of buying and consuming products, second in inadequate offer of green products, and the third in insufficient stimulus measures for manufacturers to invest additional resources and efforts to develop the concept of green marketing. Certain initiatives have been promoted and will be

implemented within the process of Montenegro's enlistment to the European Union. One of the chapters is about the environment. It states that Montenegro seeks to systematically integrate environmental issues into all economic sectors and decision-making processes, and to pay special attention to investing in clean energy sources, effective prevention and control of pollution, minimizing waste and environmental risks, and integrating environmental sustainable practices in key economic activities, in order to change unviable patterns of consumption and production, with particular emphasis on combating climate change.

On the other hand, the results of the research give some recommendations and guidelines for developing strategies that would be aimed at raising the awareness of consumers from Montenegro about the importance of environmentally responsible behavior. The results that women are more ecologically aware are not surprising, because they have higher sensitivity to topics of social significance. From the age perspective, the older are more ecologically responsible, which can be explained by their greater concern for health, but also for the environment, which they leave in some way to their descendants. As educated people are more familiar with the existence and importance of organic products, they buy them more. This is also related to their income, which is higher than the average and gives them the opportunity to buy such products, which are, as a rule, more expensive. These analyses also provide recommendations on which categories it is necessary to focus in promo-educational campaigns, which primarily addresses the younger population and those less educated, because their ecological awareness is at a lower level. As the general public in Montenegro is less ecologically aware, it means that, to a certain extent, the activities should be directed towards everyone. First of all, consumers from Montenegro need to educate themselves about ecologically responsible behavior – its importance for their wellbeing, as well as for the environment and society in general. It is necessary to present them the importance of identifying eco-labels, which is the evidence of product quality. The presentation model must involve direct contact, and not only propaganda, which has not proved to be the most efficient way of communication among consumers in Montenegro. They must recognize the importance of purchasing green products and benefits that can be achieved, because price is not a key reason to stimulate them to buy.

The above outcomes were confirmed by the results carried out for the needs of the Carbon neutral tourism project, implemented by UNDP (UNDP, 2015). The research on low-carbon tourism in Montenegro was conducted in 6 coastal municipalities (Bar, Budva, Herceg Novi, Kotor, Tivat, Ulcinj) and in the capital of Cetinje, and encompassed three target groups: 1) 1.000 turists/visitors; 2) 100 representatives of the business sector of travel and tourism - tourist workers; and 3)

representatives of competent institutions at the national and local level in the area of tourism and environmental protection.

The results showed the following:

- Tourists, tourist workers and representatives of relevant institutions at the national and local levels in the area of tourism and environmental protection have generally shown a relatively low level of awareness regarding low-carbon growth, and low carbon products and services in the area of travel and tourism. However, the general perception is that Montenegro is a clean and ecological tourist destination. No specific low-carbon tourism product or service, except the marine Porto Montenegro with their ecological standards for yachts, are offered in Montenegro.
- To some extent, tourist workers use measures to mitigate and reduce CO2 emissions, but additional incentives and systematic approach, which would be governed by state institutions, are needed. Responsible institutions are aware of eco-labeling programs and there are certain initiatives to provide assistance to tourist workers to include that in their offer.
- The main obstacles to the use or provision of low-carbon tourism products and services, which were put forward by tourist workers, relate to the lack of interest (perception that this would not attract more clients / tourists), the lack of resources and incentives. In addition, tourists are generally not interested in low-carbon tourism products and services, while competent national and local institutions indicate a lack of funds and a lack of interest by representatives of the tourism sector.
- Activities identified to neutralize the carbon footprint in tourism, which could be an incentive and motivation for the further creation of an environment for the development of low-carbon tourism, relate to pedestrian and cycling zones, bicycle paths and stations for electric bikes, tax incentives for accommodation of higher category, benefits for tourist facilities using an energy efficiency programs, adequate landfills, etc.
- This survey also showed that the awareness of various actors in Montenegro on low-carbon tourism is at a low level. Competent entities are familiar with the concept, but not with the methods of its application. On the other hand, even the tourists themselves are not demanding on this issue, so they do not exert additional pressure on the authorities to be more responsible. Although the state has enacted certain laws and strategies, no clear models for controlling their application have been established.
- The above indicates that in the coming period, we should work on raising awareness about the importance of ecologically responsible behavior not only of consumers, but also of business entities and state institutions, in

order to systematically and in the long term deal with environmental protection.

The originality of this paper is reflected in the analysis of literature and conducted researches in the area of green marketing, sustainable development and their connection. A special contribution lies in the presentation of a comparative analysis of Montenegro and countries of the region, primarily in the segment of environmental awareness of consumers. The added value is reflected in the analysis of case studies and recommendations for the application of green marketing in an efficient way, which can contribute to the improvement of business operations, as well as to sustainable development of the economy and society as a whole in the long run.

The paper can serve to all those who want to further elaborate this topic both theoretically and practically. During the writing of the paper, the existing literature was analyzed, but also the practice related to the application of green marketing in achieving sustainable development. Despite the global framework of analysis, the focus was on Montenegro and the region, so that examples and recommendations can primarily be of importance to companies in Montenegro who plan to act more ecologically and socially responsible. The paper can also be used at faculties, in the study of marketing and green marketing - theoretically and through the analysis of the case study

Future Research Directions:

The paper analyzes a part of the existing literature related to green marketing and its importance, as well as the contribution of green marketing in achieving sustainable development. The researches conducted with the aim of analyzing the ecologically responsible behavior of consumers from the territory of the former Yugoslavia, as well as public researches in Montenegro regarding the knowledge of the of low-carbon tourism concept, are presented in this paper. Research has shown that the application of green marketing has not been sufficiently developed on the territory of the former Yugoslavia, especially in Montenegro. In that sense, further research will focus on exploring the reasons for the insufficient environmental awareness of consumers in Montenegro, especially since Montenegro is an ecological state and consumers in this country should have greater responsibility towards it. Regarding the application of green marketing, in addition to the analysis of consumers, further research by the authors will also refer to the research of the behavior of business entities and competent state institutions. In accordance with the results of the research, the further work of the authors will be directed to giving recommendations, which can be the basis for the development

of strategies, which would raise consumers' and other subjects' awareness of ecologically responsible behavior and the importance of implementing the concept of green marketing

4. CONCLUSION

Companies have great benefits from applying green marketing (reducing costs, creating new markets, etc.). These benefits can also be observed at the macro level, as such action leads to sustainable development (through, for example, energy savings, reduced waste, etc.).

In addition to businesses, consumers are also benefiting from green marketing because acting in accordance with its principles leads to the provision of products that are good for the health of consumers, but also to the protection of the environment in which people work and live.

Green marketing is increasingly being applied globally, primarily because consumers become ecologically aware and demanding when environmental protection is in question. On the other hand, states also realize that many resources are being spent uncontrollably, which can lead to their disappearance and unsustainability of certain industries in the future. That's why more and more models are being sought to respond to unlimited consumer needs with limited resources, and one of these models is green marketing. It contributes to achieving sustainable development, as it promotes the rational use of resources.

Marketing managers should also adapt to the new concept of action, as the traditional concept of marketing mix needs to accommodate to new needs. At the heart of green marketing is the green product, which is made of non-polluting materials. They are accompanied by green packaging, as well as branding that distinguishes products that are environmentally friendly. Promotion should contribute to consumer awareness and information about these products and, when presenting their advantages, to motivate people to use them. The prices of green products are usually higher due to the specific process of their production. However, they must be at a level acceptable to consumers, which can be achieved by reducing costs, saving energy, using surplus of materials and waste, and so on. The distribution should also be organized in accordance with the "green principles", primarily through adequate transport, and the use of fuels that are less harmful to the environment.

Special heed should be paid to consumer education, as their behavior significantly influences the implementation of the green marketing concept. On the other hand,

their actions will significantly influence the companies' business, as ecologically conscious consumers will "make them" behave more socially responsible, since they will choose to buy from such.

Consumers in developing countries are less ecologically aware than in developed ones. This is shown by the research of the ecological action of consumers from the territory of the former Yugoslavia. However, there is a difference between them. For example, consumers from Montenegro are significantly less ecologically responsible in purchasing from other countries of the region and are not sufficiently informed about how they can contribute to environmental protection. In this respect, an action for raising the awareness of consumers in Montenegro on ecologically responsible activities needs to be performed in the future.

ACKNOWLEDGMENT

This chapter is written as a part of the research projects III47009 (European Integrations and Social and Economic Changes in Serbian Economy on the Way to the EU) and OI179015 (Challenges and Prospects of Structural Changes in Serbia: Strategic Directions for Economic Development and Harmonisation with EU Requirements), financed by the Ministry of Education, Science, and Technological Development of the Republic of Serbia.

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ILLIQUIDITY RISK OF POLLUTING ENTERPRISES IN SERBIA

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Abstract: *The aim of this paper is to analyze the liquidity risk of selected polluting enterprises in Serbia. The specific objective of the paper relates on the comparison of polluting medium enterprises liquidity risk with liquidity of medium enterprises sector and Serbian economy. Illiquidity risk assessment is determined by liquidity indicators, net working capital and cash flow statement. The research is conducted on the group of 48 polluting medium-sized enterprises whose plants are the major sources of environmental pollution in Serbia. Selected liquidity indicators are determined by financial statements information disclosed by Serbian Business Registers Agency. The quantitative and qualitative analysis covers the period from 2010 to 2015. The values and trends of liquidity indicators of the polluting medium enterprises group represent an unfavourable assumption for their short-term financial stability. Positive net working capital shows that polluting medium enterprises have sufficient long-term fund to cover long-term assets and the part of their inventories.*

Keywords*: Illiquidity risk, cash flow analysis, polluting enterprises, medium enterprises, Serbian economy*

1. INTRODUCTION

Economic growth and green growth that is based on care for the environment are the processes that should be realized simultaneously. Green growth as an approach should contribute to the implementation of the concept of sustainable development in economic, environmental and social dimension (Jovanović-Gavrilović, Minić, 2012). Economic development in which environmental damage penalizes economic growth can be defined as unsustainable development (Đurović, Cvetanović, 2016).

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Environmental protection is a prerequisite for a country development, as well as for the growth and progress of its business entities. The characteristics of social responsible companies are the application of modern manufacturing technologies influencing on reduction of environmental pollution and the environmentally justified way of doing business.

Eco-based capital investments at the state level depend on the country's solvency. Investing in new manufacturing technologies and modern business systems is associated with short-term and long-term financial stability, at the level of individual entities. Polluter companies' expenditures based on investments in ecological production, preventive and environmental protection, environmental pollution taxes and other unforeseen expenditures imply that enterprises are able to operate with satisfactory liquidity, i.e. to ensure that sources of funding are available to service matured liabilities.

The aim of this paper is to analyze the liquidity risk of selected polluting enterprises in Serbia using the accrual liquidity indicators as compared to the cash flow liquidity indicators and net working capital as a financial tool which represents corporate liquidity. The specific objective of the paper relates on the comparison of polluting medium enterprises liquidity risk with liquidity of medium enterprises sector and Serbian economy. The authors consider the main hypothesis of this research that group of polluting medium enterprises is exposed to illiquidity risk, but less than medium-sized enterprises sector and economy as whole.

Illiquidity risk assessment is determined by liquidity indicators, net working capital and cash flow statement. The accrual and cash flow approaches of liquidity analysis are used in the paper as complementary approaches. Research methodology is based on the financial, descriptive, comparative and statistical analysis. The research is conducted on the group of 48 polluting medium-sized enterprises whose plants are the major sources of environmental pollution in Serbia. The sample of the enterprises was selected from the Pollutant Release and Transfer Register in Serbia (PRTR register of large sources of pollution), reported by the Serbian Environmental Protection Agency. The liquidity analysis includes the comparison between polluting medium enterprises, the sector of medium enterprises and Serbian economy over a six-year period, on annual and average level. Selected liquidity indicators are determined by financial statements information disclosed by Serbian Business Registers Agency. The quantitative and qualitative analysis covers the period from 2010 to 2015.

This research can be accepted in academic and industry practice. The research results can be of interest to a variety of enterprises stakeholders, including financial analysts, policy makers, and researchers.

Illiquidity problem in Serbian economy makes it difficult for enterprises to doing business. The key originality value of this paper is in the fact that the assessment of the illiquidity risk is based on the selected liquidity indicators for medium-sized enterprises whose plants are the major sources of environmental pollution in Serbia.

In accordance with the main objective of this research, besides introduction and conclusion, this paper also includes three integral parts. The first part addresses to polluting enterprises in Serbia. In the second part of the paper, the liquidity analytical tools were identified. In the third part after the methodology was presented as well as the sample of the enterprises and data sources, the liquidity risk of the selected polluting medium enterprises was analyzed. This part includes the comparison between polluting medium enterprises, the medium enterprises sector and Serbian economy as whole.

2. POLLUTING ENTERPRISES IN SERBIA

Financial stability is the relevant determinant of continual business and growth of an enterprise. Ecologically responsible business operations as a prerequisite for economic prosperity and corporate image enhancement imply the undertaking of adequate measures to prevent or reduce environmental pollution (Stevanović, Belopavlović, Lazarević-Moravčević, 2014). All the companies which inadequate activities lead to the pollution of the environment should bear the responsibility for damaging its quality. The Environmental Protection Law (2016) defines that enterprises in Serbia can apply technologies and processes that meet environmental protection requirements.

Fulfilling the responsibilities to cover environmental protection costs and investing in eco production comprises the ability to maintain liquidity that is a prerequisite for long-term financial stability. Polluter companies' expenditures on behalf of preventive environmental protection, pollution charges and other unforeseen expenditures imply that the company is able to operate liquidly. Preventive protection costs created aiming to mitigate and reduce pollution can also be seen as an investment resulting in improvement of business performance and responsible business (Knežević, Mizdraković, Arežina, 2012). The additional expenditure of polluters may comprise also the environmental control costs incurred by

controlling and monitoring the process of production, transport and waste disposal (Jakovčević, 2008).

Ecologically justified production and products and services sale not endangering the environment and human health is a characteristic of socially responsible enterprises. Đukić (2012) notes that environmental standards and sustainability criteria have to be relevant assumptions of the business and production and sales of goods, products and services. Companies which activities lead to environmental pollution are legally obliged to submit annual reports on sources of pollutants on the basis of emissions into air, water, soil and waste management. These are companies that have one or more plants representing sources of pollution. Environmental reporting entity is obliged to keep daily record of emissions of polluting substances, that is, generation and waste management, to submit annual reports on prescribed forms to the Environmental Protection Agency or local self-government community.

Large sources of environmental pollution are registered in the national database. The establishing a national electronic database comprising that information is one of the steps leading to the improvement of regulations and information system related to environmental protection (Stevanović, Belopavlović, Lazarević-Moravčević, 2016). Pollutant companies' listings are classified according to the registry types for which the data are submitted. The Environmental Protection Agency compiles a list of companies that are required to report to the National Register of Pollutant Sources.

Besides the Pollution Release and Transfer Register (PRTR), there is a list of companies with reporting obligation for products that after the use become special waste streams¸ a list of waste management companies as manufacturer, waste exporters and importers, or as landfill or treatment plants operators. Additional registers of the Serbian Environmental Protection Agency refer to companies submitting reports on packing placed on the market and local communities having responsibility to report on communal waste (www.sepa.gov.rs). The PRTR includes facilities representing the most important sources of pollution in Serbia in the energy, production and processing of metals, mineral industry, and chemical industry, waste and wastewater management, paper and wood products, intensive livestock production and fisheries, food industry and other industrial branch.

The PRTR large source pollutant register comprises data systematized based on the information provided by pollutants in prescribed forms (www.sepa.gov.rs). For individual companies the reporting obligation is defined at plant level. General information on the source of pollution, which is, inter alia, related to the data on

spent fuel in the plant, plant products and raw materials are provided within Form 1. The forms 2, 3 and 4 respectively show data on air, water and soil. The Agency presents the number of pollution sources for which the companies are responsible to submit the mentioned forms. The types and quantities of produced waste, as well as the managing way of individual waste types, are provided in Form 5.

3. ANALYTICAL TOOL OF LIQUIDITY ANALYSIS

The company's financial stability is the subject of analysis of all interest groups. Different interest groups have both, common and specific information requirements regarding company performances. The degree of exposure of an enterprise to the business-financial risks is relevant for decision-making on cooperation. The ultimate interest of the creditor is the collection of claims on the basis of approved loan and interest within the foreseen deadlines, and collection of principal and interest from financial investments. Existing and potential capital owners make up the interest group of companies that bear the highest risk of investing capital in the company and accordingly expect long-term financial stability of the company and adequate returns. The subject of expectations of other external and internal stakeholders is the ability to pay off the company's liabilities.

The company risk can be defined from different aspects. Financial risk implies the aspect of ability to settle liabilities both on maturity, and over a longer period. Stickney (2007) illustrates the calculation and interpretation of risk ratios focusing on both, short-term liquidity risk and long-term solvency risk. A wider definition of risk implies observing the risk of real yield gains in relation to the expected gains.

The risk assessment of investment and co-operation with the company can be carried out on the basis of information from the financial statements. The fact is that there is no guarantee that risk-based financial statements can positively be considered in a systematic manner (Damodaran, 2007, 100), but the financial statements are a relevant source of information representing a basis for risk measurements. Liquidity risk analysis implies an analysis of the company's short-term financial stability. Liquid company is the one that is able to provide sufficient cash for continuous business and compliance with its liabilities. A company with the lower level of liquidity risk has a greater ability to maintain short-term financial stability.

The risk of liquidity or insolvency can be assessed on the basis of financial indicators, while financial indicators are insufficient to assess the risk that actual returns could be lower than expected. However, for this type of risk, the other information is required.

The financial ratios differ in whether levels (amounts shown on the balance sheet) or flows (cash inflow and outflow) are used to gauge the relationship (White, 2003, 124). Indicators used for assessing financial stability risk may only be based on the Balance sheet and Income statement for a given period of time. There is also a set of indicators that are additionally based on cash flows as well as a group of risk indicators based on market information (Malinić, 2009). Stevanović and Belopavlović (2011) explain the measuring of short term and long-term financial stability indicators. Anđelić, Gajić and Ilić (2016) discusse the problems of the financial management using modern methods of financial management that include liquidity risk analysis. Đuričin and Bodroža (2013) inter alia use business risk drivers analysis and liquidity analysis in performed order to evaluate level of agro meteorological conditions impact on agricultural financial performances.

A static liquidity analysis based on the items of the balance sheet represents the initial phase of the analysis of short-term financial stability. The liquidity analysis carried out on the basis of the total value of current assets, the value of certain items of current assets and short-term liabilities generates risk indicators as a result of financial and structural disturbances.

Except Current ratio and Quick ratio as traditional ratios, a ratio that incorporates the amount of cash and cash equivalents on the balance sheet helps the analyst to evaluate short-term liquidity. If the relation between cash and cash equivalents on one hand, and short-term liabilities on the other hand, is lower than 25% than it can be used as the signal of insolvency risk (Malinić, 2009).

The coverage degree assessment of the short-term liabilities by the company's current assets is not sufficient for the assessment of its short-term financial stability. The assessment of the structure and quality of current assets, and the maturity of short-term liabilities show good or bad assumptions for managing enterprise's short-term stability. Adequate liquidity management comprises monitoring and adjusting the assets maturity structure and sources of funding, evaluation of company's asset and liabilities management efficiency, as well as forecasting cash inflows and outflows in the upcoming period.

Cash flow from operating is used as a measure of the company's ability to generate cash in its business activities to be used to cover current liabilities. After the adoption of SFAS No. 95 Giacomino and Mielke (1993) introduce the cash flow indicators, primarily using cash flows based on operating activities. A negative Cash flow from operating discovers or warns of a liquidity and business problems. The more permanent negative cash flow from operating indicates the company's exposure to long-term financial risk. In addition to the absolute amount of the cash

flow from operating, the risk of default is under the influence of changes in these cash flows. Most models for assessing the risk of non-fulfillment use financial indicators to measure cash flow coverage (Damodaran, 2007, 175). Ratio named Operating Cash Flow to current liabilities ratio is one of them. The earnings quality indicators based on cash flows can also be used as indicators of possible business-financial problems. The quality of revenue indicator may indicate an increased risk of illiquidity (Mulford, Comiskey, 2005).

Indicators that warn about jeopardizing liquidity, contribute to increasing risk that long-term financial stability is compromised. Disruption of the existing financial structure affects the indicator of indebtedness and implies exposure to higher financial risks. The indicator of potential indebtedness (Malinić, 2009) other than actual liabilities includes potential liabilities. The disclosure of information on potential liabilities contributes to the perceiving company's financial risk because conditional liabilities can become real under certain conditions. Financial and structural risk indicators are also a sign of the ability to pay interest rates.

Net working capital is a financial stability tool expressed in absolute money units. Net working capital represents the security margin for the creditors. It is part of equity and long-term borrowed capital intended for financing current assets. The amount of the net working capital needs to be tailored to the needs of long-term financing of a current assets' part that will not be funded from short-term capital sources. Own net working capital shows the extent the fixed assets are financed from their equity.

4. LIQUIDITY ANALYSIS OF SELECTED POLLUTING ENTERPRISES IN SERBIA

4.1. The methodology and data

The research methodology in this paper is primarily based on financial, descriptive and comparative analysis. Mainly, the analysis included selected medium-sized enterprises whose plants are the major sources of environmental pollution in Serbia. The sample of analyzed enterprises was selected from the Pollution Release and Transfer Register of large sources of pollution. The sample encompasses both the submitting enterprises and the ones that do not submit the reports to the Serbian Environmental Protection Agency. The check of the list of the selected enterprises that are included in National Pollution Sources Register was conducted during May 2017 using the Environmental Protection Agency of Republic of Serbia web site.

For the comparative analysis of the liquidity, authors use three groups of the enterprises. The first group of the enterprises includes polluting medium-sized enterprises, the second group represents all medium enterprises and the third group includes Serbian economy as a whole. Indicators that measure illiquidity risk of all analyzed groups are reported cumulatively.

Liquidity indicators were the initial indicators that are analyzed in this paper. Liquidity indicators of the selected group of enterprises were conducted by observing the relation between current assets and short-term liabilities (Current Ratio) as well as the relation between monetary assets and short-term liabilities (Quick Ratio). Cash flow liquidity indicator as a ratio between net operating cash flow and short-term liabilities shows the extent in which current liabilities are covered by net cash inflow from operating activities (Cash Flow Ratio). Also, illiquidity risk assessment is determined by net working capital determinants and cash flow statement items.

The selected analytical tools of liquidity are determined using the data from financial reports for individual enterprises published by Serbian Business Registers Agency. Quantitative and descriptive analysis of financial reports is carried out for the period between 2010 and 2015. Some indicators were analyzed on a yearly basis and also average for five years period 2010-2015. The publication of the Serbian Business Registers Agency named Financial Statements Annual Bulletin contains aggregate data on the financial state and business performance of enterprises in the Republic of Serbia based on the Balance sheet, Income Statement and Statistical Annex. The fact that Bulletin doesn't have data from Cash flow statements is the reason why Cash flow ratio is not calculated for Serbian Economy.

4.2. Research results

Liquidity indicators. Satisfactory relations between the individual assets and liabilities are in the function of generating of the earnings and the net cash flows that provide the assumption for health financial position of enterprises (Vukelić, Stevanović, Belopavlović, 2014, 681). The values and trends of liquidity indicators of the polluting medium enterprises group represent an unfavourable assumption for their short-term financial stability.

The values of current ratio of the selected polluting medium enterprises are below the usual normal (2:1), but they are above 1. The current liabilities are covered by current assets even in 2013 when the ratio is reduced to the lowest level. The current liquidity of the polluting medium enterprises was slightly growing after

2013. The coverage of short-term liabilities by current assets was 116% and 118% respectively.

The values of current ratio are above the values of current ratio of medium enterprises sector and Serbian economy. Current ratio of economy as a whole is on the level below the 1 and forecast bad financial structural assumption in terms of ability to service matured liabilities in due time.

By excluding less liquid assets from current assets, the situation is different. The value of monetary assets is not sufficient to cover short-term liabilities in the analyzed period. The coverage of short-term liabilities by the monetary assets for the selected polluting medium enterprises group at a six-year average is at the level of 70%. The values of quick ratio are below the traditional normal (1:1) for all of three analyzed groups that represent too an unfavourable assumption for ability to service matured liabilities. The Quick ratio of the selected polluting medium enterprises is below the quick ratio of medium enterprises sector in all analyzed years but above the quick ratio of Serbian economy.

Table 1: Comparative analysis of the liquidity indicators for the period 2010-2015

Indicators	2010	2011	2012	2013	2014	2015
Current ratio						
Polluting medium enterprises	1.28	1.28	1.21	1.08	1.16	1.18
Medium enterprises sector	1.15	1.18	1.18	1.08	1.05	1.12
Serbian Economy	0.96	0.94	0.97	0.91	0.89	0.89
Quick ratio						
Polluting medium enterprises	0.76	0.77	0.71	0.63	0.66	0.70
Medium enterprises sector	0.81	0.82	0.80	0.73	0.70	0.74
Serbian Economy	0.68	0.67	0.70	0.64	0.63	0.62
Cash flow ratio						
Polluting medium enterprises	-0.16	0.06	0.09	0.07	0.09	0.18
Medium enterprises sector	0.07	0.10	0.08	0.05	0.06	0.08

Source: Authors' calculations based on Serbian Business Registers Agency data

When we rely on the cash flow ratio, we can notice that all groups of analyzed enterprises have liquidity problem because indicators are far below the usual normal (0.4:1). Comparing cash flow ratio of polluting medium enterprises with the values of ratio of medium enterprises sector, we can see similar values. After liquidity indicator analysis, we can conclude that the liquidity is very difficult to maintain.

Net working capital - NWC. The changes in the net working capital value show current liquidity tendencies. The net working capital plays an extremely important

role in assessing the ability to sustain long-term financial stability of a company. It indicates both the extent to which long-term capital is sufficient to cover not only permanent property but also inventories requesting long-term financing.

The lack of own capital for the financing fixed assets is the characteristic of selected pollution medium enterprises in the analyzed period. The trend of their net working capital determinants during periods is shown in the table 2.

The negative net working capital, along with a negative trend since 2011, shows that such coverage of fixed assets from its own sources is unsustainable for a long time. Determinants analysis the own net working capital shows that equity value is increasing over the period, but this is insufficient to cover fixed assets which value also increases. Increasing the value of fixed assets may at first glance exacerbate the image of the net working capital, but investing in expansion and modernization of fixed assets is a good reflection of the company's business. Although equity and fixed assets are relatively comparable over the period, the lack of equity for financing the fixed assets is increasing because the loss above equity value reduces equity since 2012. Loss above equity most reduces equity in 2015.

Table 2: Net working capital of selected polluting medium enterprises

in mil. RSD

Positions	2010	2011	2012	2013	2014	2015
Equity	32,244	34,926	34,725	38,100	39,992	42,721
Loss above Equity	296	0	1,173	1,162	1,825	3,221
Fixed Assets	42,085	43,932	43,908	49,369	51,777	55,655
Own Net working capital	**-10,137**	**-9,007**	**-10,356**	**-12,431**	**-13,610**	**-16,156**
Long-term Provisions and Liabilities	16,642	15,920	16,159	14,696	19,180	23,172
Net working capital	**6,505**	**6,914**	**5,803**	**2,264**	**5,570**	**7,016**
Deficiency of Net working capital	***-5,750***	***-6,138***	***-8,694***	***-12,601***	***-11,977***	***-10,400***

Source: Authors' calculations based on Serbian Business Registers Agency data

Long-term borrowed capital compensates the lack of own sources of funding to cover fixed assets as a whole. Positive net working capital shows that polluting medium enterprises have sufficient long-term funds to cover long-term assets and the part of their inventories. The net working capital has the lowest level in 2013. The increase in net working capital demonstrates a tendency to improve liquidity since 2014. The significant reason for this is the increase in value of long-term provisions and liabilities, which in 2015 was 57% of long-term provisions and liabilities value from 2013.

Considering the relation between net working capital and inventory value, there was noticed a lack of net working capital to cover inventories of selected polluting enterprises throughout the analyzed period. The biggest drawback is present in 2013 when only 15% of the inventory value is covered by net working capital. Improving financial stability has been noticed for the next two years when polluting medium enterprises cover 32% and 40% of inventories by net working capital respectively. The comparative analysis of Net working capital for the period 2010-2015 is presented in the table 3.

Own net working capital is negative for all three analysed groups. Loss above equity most reduces the equity of the polluting enterprises group. Loss above equity is about 3.4% of the equity value on average, while the percentage for the medium-sized enterprises is 10%. Loss above equity value of Serbian economy is even about 20% of the equity value.

Table 3: Comparative analysis of net working capital for the period 2010-2015

in mil. RSD

Positions	Polluting medium enterprises	Medium enterprises	Serbian Economy
Equity	37,118	587,135	5,432,127
Loss above Equity	1,280	57,937	1,089,148
Permanent Assets	47,788	736,721	7,013,184
Own Net working capital	**-11,949**	**-207,523**	**-2,670,205**
Long-term Provisions and Liabilities	17,628	277,572	2,192,114
Net working capital	**5,679**	**70,049**	**-478,091**
Deficiency of Net working capital	**-9,260**	**-135,540**	**-1,868,549**

Source: Authors' calculations based on Serbian Business Registers Agency data

Net working capital of selected polluting enterprises in average covers the 39% of inventory value, and it is similar in medium enterprises sector where net working capital in average covers about 36% of inventory value. Net working capital in average covers 16% and 11% of current assets value respectively in both mentioned group of enterprises. The fact that short-term sources finance a significant part of the inventories of analyzed groups of companies is a sign of their relatively low solvency. The first two analyzed groups are in better position than the Serbian economy, which notices negative value of own Net working capital and Net working capital. The net working capital analysis of the Serbian economy shows that the part of the fixed assets and inventories are financed from short-term sources (Stevanović, 2015). The lack of net working capital is considerably higher taking into account the importance of long-term sources for inventories financing.

Cash flows. The cash inflows and cash outflows trends of selected polluting enterprises are shown in the table 4. Net cash flow from operating activities is positive from 2011 when their ability to generate cash from internal sources begins. Cash inflows from operating activities are gradually increasing in the observed period, and largely follow the net operating cash flow trends. Cash outflows from operating activities were significantly reduced in 2011. In the following period the operating cash outflows and operating cash inflows grow.

The trend of operating cash inflows and outflows in 2015 is disproportionate. Operating cash inflows noticed maximum value in relation to the observed period, while operating cash outflows were only 6% of the ones from the previous year.

Table 4: Cash flow analysis of selected polluting medium enterprises

in mil. RSD

Cash flows	2010	2011	2012	2013	2014	2015
Cash inflow from operating	2,366	2,833	4,150	4,907	6,556	6,813
Cash outflow from operating	6,159	1,184	1,600	2,561	3,299	213
Net operating cash flow	***-3,793***	***1,648***	***2,550***	***2,345***	***3,257***	***6,600***
Cash inflow from investing	1,083	1,242	947	813	867	1,179
Cash outflow from investing	2,689	2,952	3,606	3,257	4,030	7,081
Net investing cash flow	***-1,606***	***-1,710***	***-2,659***	***-2,444***	***-3,163***	***-5,902***
Net cash after investing	**-5,399**	**-62**	**-109**	**-99**	**94**	**699**
Cash outflow from financing	3,986	5,322	3,718	5,737	7,463	11,835
Net cash after debt servicing	**-9,384**	**-5,384**	**-3,827**	**-5,836**	**-7,370**	**-11,137**
Cash inflow from financing	9,804	5,291	4,383	6,116	7,192	11,995
Net cash after external financing	**419**	**-93**	**556**	**280**	**-178**	**859**

Source: Authors' calculations based on Serbian Business Registers Agency data

The extremely uneven trend of operating cash inflows and outflows is unsustainable for a longer period of time. Prolonging the payment of operating liabilities and collection of claims from earlier periods may be the reason for such a trend, showing that a significant increase in operating cash outflows can be expected in the coming period.

Investing cash outflows are on the rise, particularly in 2015, when selected polluting enterprises group covers net investing cash flows in the entirety from the internally generated cash. The net cash flow after investing shows that the group in 2014 and 2015 covers one part of the debt from operating and investing cash sources. Investing cash inflows, mainly the result of property, plant and equipment sale, and net cash inflows from financial investments, are variable and amount annually between 17% and 40% of the investing cash outflows, depending on the year of observation.

During the period, the financial net cash inflow of the enterprises is unstable. The cash inflows and outflows from financing increase since 2013. Cash outflows from financing activities refer to treasury shares, servicing debts and the other financial liabilities. For the debts servicing and share repurchase enterprises use external financing sources entirely, for the period 2010-2013. In the past two years, a part of the operating and investing cash resources are used for these needs. Observing the net cash flow after debt servicing and financing cash inflows values, the conclusion is that enterprises in 2011 and 2014 use cash stock to cover the lack of financing sources. Positive net cash after external financing in other years discover that enterprises increase cash and cash equivalents value.

5. CONCLUSION

The research results confirm the main hypothesis that the group of polluting medium enterprises is exposed to the illiquidity risk. The values and trends of liquidity indicators of the polluting medium enterprises group, recorded during the period 2010-2015, represent an unfavourable assumption for their short-term financial stability. However, it is still a more favourable than liquidity indicators values and trends in the Serbian economy. The rooted financial imbalance is a general characteristic of Serbian economy. The structural imbalance of resources and their funding sources followed by a continuous accumulation of losses, deteriorating liquidity and increasing indebtedness reflect the financial position of the economy as a whole.

The results of the analysis based on the accrual liquidity indicators is best compared against the cash flow liquidity indicator and net working capital before reaching any conclusions regarding the liquidity risk of enterprises. The cash flow liquidity indicator shows a weaker liquidity position than is indicated by the accrual liquidity indicators, but positive net working capital shows that polluting medium enterprises are able to continue their business and they have sufficient long-term fund to cover long-term assets and the part of their inventories.

Starting from the fundamental financial stability determinants analyzed in the paper, it is important to emphasize the significance of improving the factors affecting the company's liquidity. Strengthening the ability to service matured liabilities, including pollution and environmental protection ones, implies adequate coverage of assets by adequate financing sources and timely compliance of inflows and outflows.

Investments in preventive activities and eco-technologies are the basis for improving ecological business that require the strengthening of the ability to

generate cash flows from operating activities, attracting additional own capital and obtaining conditions for the borrowing under more favourable conditions.

ACKNOWLEDGMENT

This paper is a part of research projects European integrations and social and economic changes in Serbian economy on the way to the EU No. 47009 and Challenges and prospects of structural changes in Serbia: Strategic directions for economic development and harmonization with EU requirements No. 179015, financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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SUSTAINABILITY IN PROJECT MANAGEMENT: A PROJECT MANAGER'S PERSPECTIVE

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Abstract: *Using the method of systematic literature review, in this paper, we present the concept of sustainable project management and create a questionnaire for empirical research. The research was conducted in order to investigate how sustainability is applied in project management, from the perspective of project managers, what is the scope of competencies of project managers in that process, is sustainability supported by leading project management methodologies and what are the main challenges for sustainable project management. The data was gathered from project managers in different industries in Serbia during 2017 and research results have confirmed that sustainability in project management is to some extent applied in project management – through the People and Profit elements, but at the very low level concerning the Planet aspect. Further, leading project management methodologies do not entirely support sustainability principles, and the application of sustainable project management has an impact on project manager's competencies.*

Keywords*: project manager, sustainability, project management*

1. INTRODUCTION

This paper aims to analyze the sustainable project management from the perspective of the project manager. The concept of sustainable development has become one of the more common concepts in the business world, which is why there is a need for integration with other management concepts. The increasing project orientation of organizations, the project model of financing of various organizations in the private, public and civil sectors, leads to the need for sustainable project management. Regardless of the growing need for the principles of sustainable development in the application of project management both in practice and in the scientific research domain, the development of operational

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methods and techniques that enable their integration is still under development. As the industry changes, project managers find themselves confronted by new issues and constraints must undertake roles that have not traditionally been part of their responsibility (Edum-Fotwe & McCaffer, 2000; Silvius & Schipper 2014;). In the next sections paper present the concept of sustainable project management and through research deals with the sustainability application in project management, the role and scope of competencies of project management in that process, leading project management methodologies and their contribution to sustainability and the main challenges for sustainability project management.

2. LITERATURE REVIEW

2.1. The concept of sustainable project management

Schoper et all. (2016) presented the research results at the seminar of the world's leading International project management association IPMA, on leading trends in the project management development areas by 2025. In addition to the projectification of societies, which is a measure of the diffusion of project management in all areas of society, as a global trend, future development trends in the field are as follows:

- Dealing with the complexity of projects
- Transnationalization of project management
- Virtualization of project management
- Women in Project Management
- Sustainability.

Sustainability is no longer viewed merely as part of a business strategy but as part of project management. The current mode of production, organization, lifestyle, can indeed have an impact on future generations, which is why things (products, processes, materials, and other resources), as well as beliefs and understandings, must be changed.

Silvius & Schipper (2014) define sustainable project management as “the planning, monitoring and controlling of project delivery and support processes, with consideration of the environmental, economic and social aspects of the life-cycle of the project's resources, processes, deliverables and effects, aimed at realizing benefits for stakeholders, and performed in a transparent, fair and ethical way that includes proactive stakeholder participation.” In project management, sustainability refers to the integration of economic, social and environmental aspects - *Profit, People, Planet* (Knoepfel, 2007).

The link between projects and sustainable development was first highlighted in 1987 at the World Commission on Environment and Development. In the past decade numerous papers presented by the leading authors in the field of project management on IPMA and PMI conferences and leading journals have been focused on integrating sustainability into the project management process (Gareis et al., 2009, Turner, 2010, Semolič et al., 2007; Silvius, 2010; Obradović et al., 2011; Scally, 2013; Silvius, 2017, Aarseth et al., 2017). Furthermore, different conceptual models tried to integrate project management and sustainable development, e.g., emerging concept "Green Project Management" emphasizes project management sustainability (Maltzman & Shirley, 2010; Glavinich & Taylor, 2008; Sholarin & Awange, 2015).

Incorporating sustainability into project management implies changes (Silvius and Shipper, 2015):

- At the level of the organization (maturity of the organization).
- At project level (project management process, maturity of sustainability integration)
- At project manager level (competencies).

The fact is that companies have mainly begun to introduce the concept of sustainability into their strategic documents (Savić et al., 2016), but the sustainability implementation is often stopped there, mainly because the introduction of this concept presents an additional cost and time to notice any positive effects and to measure its effectiveness. If we consider projects as a way to operationalize company's strategy, therefore it is essential to integrate and evaluate sustainable development at the operational plan and short-term cycle (Gareis et al., 2010; Obradović et al., 2012; Petrović et al., 2017; Aarseth et al. 2017). Sustainability implementation covers project governance policies, processes, and procedures related to social aspect (people), environmental (planet) and financial aspects (profit). This mainly means that a project can have additional objectives that are not entirely incorporated in initial project's objectives, and requires specific changes in a project. This makes the role of project manager became very important - according to Maltzman & Shirley (2010) "a project manager as a change agent."

Agarval & Kalmar (2015) stated that one of the key barriers is related to benefit analysis before the project and lack of reference point to measure sustainable alternatives. This raises the question of how important it is for a project manager to be aware of sustainable solutions that are available for a project and aware of the need to introduce sustainability principles at the earliest stages of the project. Silvius and Schenar (2014) analyzed different project management methodologies

and how they cover sustainability. They made a conclusion that the leading methodologies should be improved and emphasize further competencies: system thinking, normative competencies, anticipatory competences, strategic competencies and interpersonal competences. One of the also recognized problems in the literature is a client point of view (customer confusion over the meaning of sustainable product or process). This can cause a problem in the project goal and scope definition (Hwang & Ng, 2013; Agarval & Kalmar 2015). Further, a lack of clarity of a project scope can lead to inefficient utilization of resources and waste from potential rework. Further issues are related to the usage of different sustainable sources and consequently to the management of a large number of stakeholders (suppliers, subcontractors and team members (Hwang & Ng, 2013).

The significance of sustainability in the project management process is present not only in the academic but also in practical terms. This is reflected in a standard for sustainability in project management has been in use - *The GPM P5 Standard for Sustainability in Project Management*. The standard focuses on the integration of sustainability methods to manage organizational change (projects) to better integrate sustainability with an organizational strategy supported by measurement of social (people), economic (profit) and environmental effects (planet) (Green Project Management, 2015).

2.2. Project manager competencies

Coping with abovementioned changes in the project management system, project managers find themselves confronted by new issues. They need to undertake roles that have not traditionally been part of their responsibility. Therefore the arising question is: Does sustainable project management extends project manager's competencies, does this process emphasize specific skills in relation to others?

Some authors provided research about competence mapping in project management and the importance of project manager's competencies for project success (Takey and de Carvalho, 2015; Amala et al. 2015).

In order to understand the profile of the project manager's competence, it is necessary to identify the areas in which managers need to be competent, along with competencies related to the behavior and context of the project, that present project's operating environment (Mei-I et al. 2005; PMI, 2007; Silvius & Schipper 2014; IPMA, 2015). Leading global project management associations have developed standards for project manager competencies:

a) *International Project Management Institution – IPMA* developed IPMA *Competence Baseline (ICB)* that defines three competence areas: 1) People competence (personal and interpersonal competencies to participate or lead a project); 2) Practice competence (specific tools and techniques used in project; 3) Perspective competencies (methods, tools, and techniques through which individuals interact with the environment, as well as the rationale that leads people, organization and societies to start and support projects.
b) *Project Management Institute – PMI* developed *Project Management Competence Development (PMCD) Framework* that defines the key dimensions of competencies and identifies the crucial ones for project success. By the PMI approach, this framework defines the necessary competencies according to the sub-projects of the project management process (initiation, planning, implementation, monitoring and control and closing), based on the best practice. In a separate chapter, this framework addresses a project manager's competencies of the for project management.

Despite a significant number of papers related to the topic of project manager competencies, only a few have examined what competencies are considered as an inevitable element of sustainable project management. Available articles provided the research results obtained in the construction industry and production (Hwang & Ng, 2013; Tabassi et al., 2016; Dumraka & Baroudib, 2017).

3. METHODOLOGY

3.1. Research questions

Through systematic literature review (SLR) this paper is focused on how sustainability is applied in project management, leading project management methodologies and their support to sustainable project management, the scope of a project manager's competencies and the main challenges of this process. Key research questions are:

1. Which elements of sustainable development are most often presented in project management?
2. What methodology has been used for project management and to what extent the applied methodology contributes to sustainable project management?
3. What is the importance of introducing the sustainable project management principles in relation to project management sub-processes?

4. What knowledge and skills are essential for the implementation of sustainable project management?
5. What are the significant challenges for sustainable project management?

To discuss the research results for previously defined research questions, the following starting hypotheses are developed:

- Sustainability in project management is important and at the certain level applied in project management.
- Leading methodologies for project management partially incorporate sustainability principles.
- Sustainable project management is significant for all phases of the project life cycle, from initiation to closing the project.
- The application of sustainable project management has an impact on project manager's competencies.
- The application of sustainable project management involves specific constraints.

The starting hypotheses are presented here only constructively, while at the end of the paper, based on detailed statistical analysis, the results will be discussed, presented conclusions and further research directions will be formed.

3.2. Research method

In order to confirm or disprove the previously defined hypothesis, the authors have established a questionnaire. Afterwards, the authors conducted structured interviews with project managers in different industries, after which the questions were modified in order to generate the most precise answers.

The first part of the questionnaire was composed of questions relating to demographic characteristics of respondents. The second part was dedicated to the main elements of sustainability, where respondents were given the scale from 1 to 5 to assess the applicability of those elements on their projects. The three elements of sustainability are people, planet, and profit. Based on literature review, for each element there are defined key variables in projects: (Labuschagne & Brent, 2005; Brent & Labuschagne 2006; Knoepfel, 2007; Fernández-Sánchez, & Rodríguez-López, 2010; Silvius, 2010; Global Reporting Initiative, 2013; Silvius & Schipper 2014; Martens & Monteiro de Carvalho 2014; Carvalho, 2015; Obradović et al., 2016; Martens & Monteiro de Carvalho 2017):

- People - human resources management in the project, health and safety at work, working conditions, interpersonal relations, employment, benefits,

career development, relationships with business partners, customers, local authorities and other stakeholders, etc.

- Planet - reduced use of natural resources, local procurement, reduced waste production, recycling, reduced environmental pollution - water, air, land, biodiversity, monitoring of environmental legislation
- Profit - Return on investment, Net present value, profitability, market share, value added, business flexibility, GDP, potential financial and economic benefits.

The third part aimed to investigate which methodology respondents are using to manage their project and to what extent applied methodology support sustainable project management. Considering the statement that the integration of sustainability into the project management process practically widens the boundaries of project management, the project scope (Silvius, 2010), it can be concluded that there is a need to investigate whether current methodologies support sustainability in project management.

For the purpose of this research, the respondents were offered to choose one of the most currently used project management methodologies: PMI methodology, IPMA methodology, European Commission Methodology (Project Cycle Management). In line with the current trend of agility in business generally and consequently in project management, the respondents the Agile approach as an option. Based on some performed interviews with practitioners, we can conclude that many companies adjust and develop their methodologies for different internal processes. Therefore, respondents also had the option to select internally developed methodology.

Through the questionnaire, respondents expressed their attitude to what extent is the introduction of the sustainable project management principles significant for each subproject of the project management process. In line with some research-papers emphasized the link of sustainability with the project processes (Labuschagne & Brent, 2004; Labuschagne & Brent, 2005; Brent & Labuschagne 2006; Silvius, Brink, van der; Köhler 2012) sub-processes of the project management process are defined according to the PMI methodology.

As presented in literature review section, it is necessary to explore is there any changes in project manager’s competencies scope - is there a need for additional knowledge and skills for sustainable project management. Therefore the next question was related to project manager’s competencies for sustainable project management. The question about knowledge areas and skills that describes project manager’s competencies for sustainable project management was based on 11

knowledge areas from PMI methodology, and skills based on IPMA ICB4 and different research results that explore the most essential skills for sustainable project management (Dumraka & Baroudib 2017; Hwang & Ng 2013; Mei-I, Dainty & Moor. 2005; Tabassi et al., 2016; Carvalho & Rabechini, 2015; Daily & Huang 2001; PMI, 2016; IPMA, 2015).

Finally, the respondents express their opinion on what challenges, related to sustainability, are recognized on their project. They were given a list of possible challenges that was based on a primary conclusion from the research in this field (McCool & Stankey 2004; Best & Kumar, 2008; Silvius, 2010; Lang et al., 2012; Agarval & Kalmar 2015;).

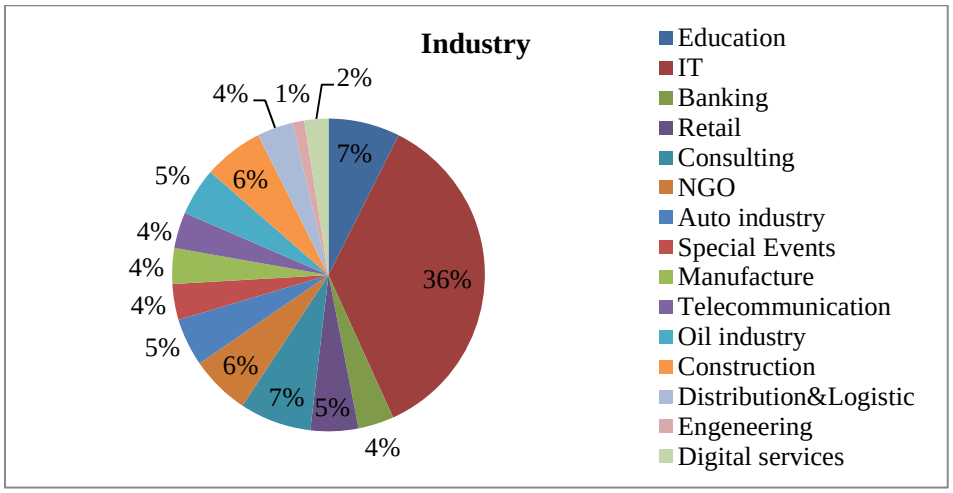
4. RESULTS AND DISCUSSION

4.1. Sample description

The online questionnaire was distributed to project managers in different industries (IT sector, oil industry, education, NGO, construction sector, auto industry, telecommunication, banking sector, etc.). The preliminary analysis of the completed questionnaires, questionnaires filled by persons other than project managers and questionnaires that are incomplete were not considered in further analysis. Therefore, only 81 questionnaires have been taken into consideration.

The most of the respondents are professionals from the private sector (78%), while 17% are working in public sector and only 5% are from civil sector. Concerning an industry, we can conclude that the more than 30% of respondents are from IT sector (distribution of respondents by industry is presented in Figure 1).

Figure 1: Distribution of respondents by industry



The majority have significate experience in project management: 62% of respondents have participated in more than 10 projects, 28% have participated in more than 3 projects, and only 10% participated in less than 3 projects.

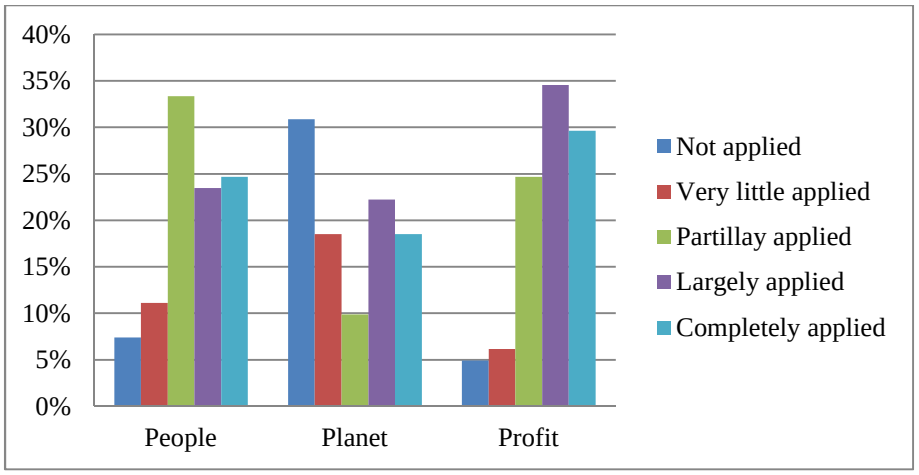
4.2. The sustainability elements and the key variable

Through the research results analysis we can conclude that project managers are focused more at the financial aspect of their projects, less if we consider people aspect on projects, but significantly less at the planet aspect (environment). We can also see that the aspects that refer to the environment are in the most cases applied or not applied (there is a minimal number of responses for “partially applied”).

Table 1: Sustainability elements in project management

	People	**Planet**	**Profit**
Not applied	7,41%	30,86%	4,94%
Very little applied	11,11%	18,52%	6,17%
Partillay applied	29,63%	9,88%	24,69%
Largely applied	27,16%	22,22%	34,57%
Completely applied	24,69%	18,52%	29,63%

Figure 2: Sustainability elements in project management



Results show that environmental aspects, as one of the crucial elements of sustainable project management, are critical since they are not represented at all in nearly one-third of projects. Still, practices for different people and profit aspect are applied in project management. This confirms the first defined hypothesis that *sustainability in project management is at the certain level applied in project management*.

The research results showed that 22% respondents do not use any specific methodology for project management. From the 78% of those who stated that they use the specific methodology, they use internally developed methodology (46%) rather than one of the standard methodologies (Figure 3).

Further, based on to the project manager's opinion, we can conclude that applied methodology does not entirely support all aspect of sustainability, especially environmental aspect (Table 2).

Figure 3: Project Management Methodologies

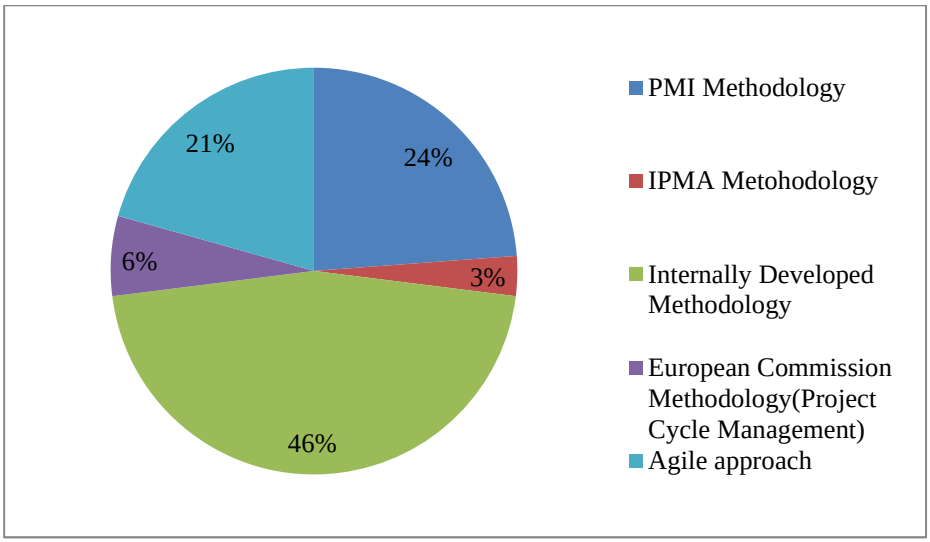


Table 2: Methodology support

	People	Planet	Profit
Completely support	25%	10%	31%
Largely support	37%	20%	46%
Partillay support	20%	30%	22%
Very little support	15%	26%	1%
Does not provide support	4%	15%	0%

As the respondents had the scale from 1 to 5 to evaluate the contribution of the methodology to various aspects of sustainability, the average score for each element was calculated. The average grades are formed considering the different presence of different methodologies (Table 3).

Table 3: Project management methodology contribution to sustainability aspects

Methodology	People AG	Planet AG	Profit AG	Method. presence	Ponder	People TAG	Planet TAG	Profit TAG
PMI Methodology	3,47	2,60	4,07	15	0,24	0,83	0,62	0,98
IPMA Methodology	4,00	4,00	4,00	2	0,03	0,12	0,12	0,12
Internal Methodology	3,97	3,00	4,38	29	0,46	1,83	1,38	2,01
EU Comm. Methodology	3,50	3,25	3,50	4	0,06	0,21	0,20	0,21
Agile appoach	4,08	2,69	4,08	13	0,21	0,86	0,56	0,86
Total	19,02	15,54	20,03	63	1,00	**3,85**	**2,88**	**4,18**

*AG – Average grade

*TAG – Total average grade

Based on the statistical analysis, the following conclusions can be made:

- The assessment of the contribution of applied methodology, considering environmental aspects, on a scale of 1 to 5, is 2.88. According to the respondents, the applied methodology mostly supports financial aspects (high average score 4.18) and slightly less human aspects (average score 3.85).
- Toward a mutual comparison of considered methodologies, most organizations have a customized, internally developed methodology (46%). This is followed by application of PMI methodology and Agile approach, while the European Commission Methodology and IPMA methodology are rarely present. An interesting conclusion is that the aspects of sustainable project management, considering the methodologies mentioned above, are mostly supported in companies where there is an internally developed methodology, which deviates from the standard ones.

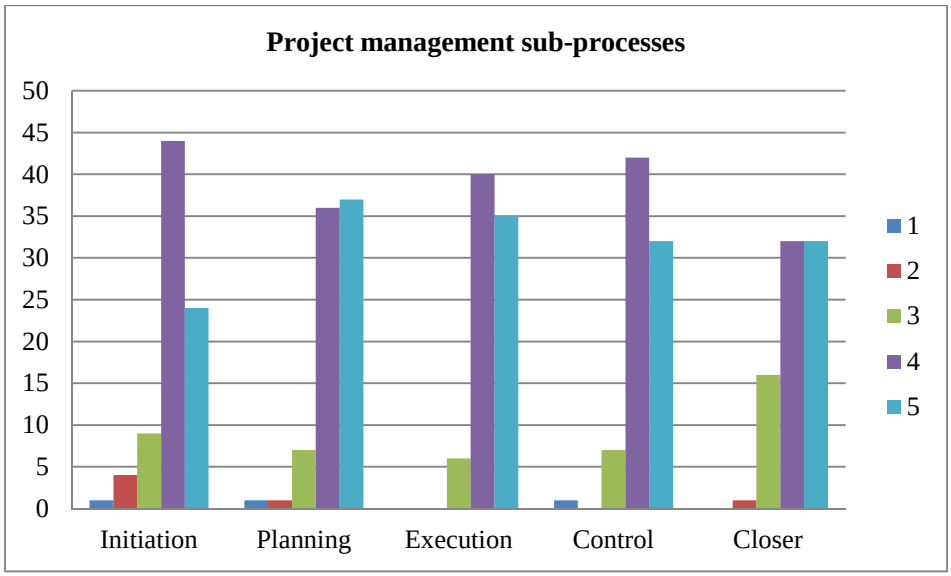
Considering those results, and the recommendation by Silvius and Schenar (2014) that project management methodologies should be improved in order to cope better with sustainability, we can confirm the second hypothesis that *leading methodologies for project management partially incorporate sustainability principles*.

From project manager's point of view, the introduction of the sustainability principles is very important for each sub-process of the project management process, from initiation to closure. This confirms the hypothesis that *sustainable*

project management is significant for all phases of the project life cycle, from initiation to closing the project.

According to the average grade, the most significant process(es) to introduce sustainability are the planning (4,36) and execution of a project (4,36).

Figure 4*:* The importance of introducing sustainability in project management sub-processes



Statistics showed that project managers consider project resource management the most important knowledge area, from the perspective of sustainable project management. Next to resource management are cost, risk and communication management.

Those results are in line with other performed researches (Hwang & Ng, 2013), with the exception that stakeholder management, in this research, is not recognized as highly important for sustainable project management. The same authors also recognized pro problem of resource utilization, connecting this issue directly with the project goal and scope definition.

Table 4: The importance of knowledge areas for sustainable project management

Knowledge areas	Average grade (from 1 to 5)
Resource management	4,35
Cost management	4,26
Risk management	4,23
Communication management	4,23
Quality management	4,16
Scope management	3,98
Stakeholder management	3,90
Schedule management	3,89
Integration management	3,75
Procurement management	3,57

Project managers consider social (behavioral) skill: communication, decision making, teamwork, leadership (Table 5), the necessary skills for sustainable project management. Skills that are related to the project context (analytical skills, business orientation) are at the second place, while technical skills are the least important, comparing to behavioral and contextual skills.

Table 5: The importance of skills for sustainable project management

Skills	Average grade (from 1 to 5)
Communication	4,43
Decision making	4,42
Teamwork	4,32
Leadership	4,30
Problem-solving	4,30
Delegation	4,22
Ethics	4,05
Analytical skills	4,02
Business orientation	3,91
Technical skills	3,69

The presented statistical results confirm that *the application of sustainable project management has an impact on project manager's competencies*, since it significantly emphasizes the behavioral skills, over contextual and technical.

The primary constraints for sustainable project management are related with the internal organization (inconsistency of internal processes for sustainable project management), coordination with a client/investor, communication with stakeholders and project set up (goal definition, scope, resource plan) (Table 6).

Legal regulations, knowledge about “green” technologies, accessibility of sustainable solutions are not recognized as challenging issues for sustainable project management. When comparing with a previous question that is related to project manager’s knowledge and skills, we can notice that there is a consistency between emphasized behavioral skills and highlighted constraints. Although stakeholder management in the previous question was not rated as highly important knowledge area, Inefficient communication with stakeholders was recognized as a significant constraint.

Table 6: Challenges for sustainable project management

Main challenges	Average grade (from 1 to 5)
Poor human resource plan, which creates the need for additional engagement	4,48
Inefficient cooperation with a client/investor in the process of goals definition	4,36
Poorly defined project scope/scope changes	4,32
Inconsistency of internal processes in the organization with elements of sustainable project management	4,11
Inefficient communication with stakeholders	4,09
Lack of the analysis of sustainable solution in the phases of preparation and planning of a project	4,00
Financial constraints for sustainable solutions	3,95
Inconsistency corporate strategy and/or corporate social responsibility strategy with elements of sustainable project management	3,84
Lack of incentives (subsides)	2,67
Lack of benefits analysis for different parties, to which the project can have an impact	2,67
Insufficient legal regulations	2,58
Sustainable solutions become outdated in the long terms	2,52
Lack of knowledge about sustainability principles, "green" technologies, materials, etc.	2,48
Inaccessible "green" solutions	2,15

Based on presented statistics we can confirm the hypothesis that *the application of sustainable project management involves certain constraints*. However, comparing those results with results that can be found in the literature, we can conclude that project managers, who participated in this research, recognize approximately half of the present challenges for sustainable project management.

4. CONCLUSION

The paper presents the concept of sustainable project management that in the last decade became one of the growing trends in the business world.

This paper aimed to analyze the sustainable project management from the perspective of the project manager. Using the method of systematic literature review, we have created a questionnaire for empirical research in order to investigate is sustainability applied in project management. The aim was to examine whether leading project management methodologies support sustainability in project management, does sustainability application affect the scope of a project manager's competencies and what are the main challenges of this process. The data was gathered from project managers in different industries in Serbia during 2017.

The main conclusion of this paper is that sustainability in project management is at the certain level applied in project management. Environmental aspects, as one of the crucial elements of sustainable project management, are critical since they are not represented at all in nearly one-third of projects, but practices for people and profit aspect are applied in project management.

According to the results, applied methodology mostly supports financial aspects and slightly less human aspects, but the environmental aspect is not supported enough. This conclusion does not significantly depend on what methodology the project managers use. Statistical results confirmed that introduction of sustainable project management is significant for all sub-process in project management process, from initiation to closing. It is also confirmed that application of sustainable project management has an impact on project manager's competencies, since it significantly emphasizes the behavioral skills, over contextual and technical.

From the project manager's perspective, the primary constraint for sustainable project management is the inconsistency of internal processes. Furthermore, coordination with a client/investor, communication with stakeholders and project set up (goal definition, scope, resource plan) are also recognized as major obstacles, while legal regulations, knowledge about "green" technologies, accessibility of sustainable solutions are not recognized as challenging issues for sustainable project management.

The results presented in this paper complement the studies previously performed in this field. The main advantage of this study is that it is not focused on only one industry (available research is mainly conducted in the construction industry and are related to "green" projects). Besides, this is a first research performed in this

field in this region. On the other hand, the limitation of this paper relates to the fact that this research has a national character, i.e., that it applies only to Serbia. Nevertheless, we believe that any further research should focus on expanding the research in other countries in the region in order to provide a more profound statistical analysis with the correlation between date, related to industry, project management methodology, country, etc.

ACKNOWLEDGEMENT

This paper is a result of the Project No. 179081 funded by Ministry of Education and Science of the Republic of Serbia: Researching Contemporary Tendencies of Strategic Management Using Specialized Management Disciplines in Function of Competitiveness of Serbian Economy.

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SUSTAINABLE DEVELOPMENT AND DISCLOSURE PRACTICE AMONG ISLAMIC BANKS

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Abstract: *Islamic economic model, especially it's most developed part Islamic banking, is known as interest free. Beside this characteristic it includes several moral and ethical dimensions based on Islam as a foundation of this business activity. In this aspect, Islamic banks should be barriers of sustainable development because public interest is the basics of its foundation. The aim of this paper is to analyze the degree of involvement of Islamic banks regarding sustainable development in forms of disclosure of their activities. Emphasis is placed on economic, social and environmental disclosure. This paper is focused on theoretical background considering the disclosure practice among Islamic banks, especially within the three basic pillars of sustainable development goals.*

Keywords*: Islamic banking, sustainable development, Sustainable Development Goals, public interest, disclosure*

1. INTRODUCTION

In financial system of every country, banks are one of the most important financial institutions. Over time, their role has changed and they became *"financial supermarkets"* and one of the key bearers of sustainable development. One side of banks contribution to sustainable economy is in form of financing financial activities while considering social and environmental effects. In other words, financing and implementing those activities that will incorporate environmental, social and governance (ESG) criteria. In that aspect, banks adopted set of codes of conduct, mainly on a voluntary basis, regarding environment and sustainability (Weber, Diaz and Schwegler 2014).

International Finance Corporation (IFC) uses ESG criteria when promoting stability of financial systems (IFC, 2017). Rogers (2013) and Eccles and Serafeim

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(2013), state that ESG evaluation should be considered not only on a financial level but as well as on a non-financial too.

Similar to IFC, United Nations created UN Environment Programme Finance Initiative (UNEP FI) in order to connect UN and financial sector globally. The need for this partnership emerged as a result of increasing role of financial institutions in terms of sustainability. In 2015, the UN General Assembly established 17 Sustainable Development Goals (SDGs) to be accomplished by 2030. These goals are based on three pillars: economic, environmental and social. The estimate is that 5-7 trillion US$, a year, will be needed to realize the SDGs worldwide (UNCTAD, 2016) focusing on environmental and social market instruments. Beside these criteria, institutions that are recognized as financially stable and at the same time environmentally and socially responsible, will be partners for achieving SDGs.

In this aspect, in order to achieve sustainable development, one of the basic functions of banking sector is to provide financial stability. After the outbreak of the financial crisis in 2008, that stability was undermined. As a result of the lost trust and the need to return confidence in the financial system, Islamic banking gained importance primarily because of the fact that it strictly forbids interest as well as speculative activities.

Daily Vatican newspaper, *"L'Osservatore Romano"* reported that *"the ethical principles on which Islamic finance is based may bring banks closer to their clients and to the true spirit which should mark every financial service"* (L'Osservatore Romano, 2009). Because of its balance between social and financial goals, Islamic banks can be one of the key bearers to sustainable development. Ahmed et. al (2015) notes that Islamic banking, as a system, *"helps to stimulate economic activity and entrepreneurship towards addressing poverty and inequality, ensures financial and social stability, and promotes comprehensive human development and fairness which is relevant to SDGs"*.

The question that arises is to what extent are Islamic banks involved in sustainable development? The answer can depend on the factor such as the level of contribution of Islamic banks to the economy, especially in terms of social dimensions. This subject can be observed by the disclosure practice among Islamic banks. In that aspect the aim of this paper is to analyze the concept of Islamic banking in terms of its disclosure practice about the issues that are important and have influence on sustainable development such as economic, social and environmental. These three elements are the basis on which SDGs are based and

represent a "win-win-win" scenario, in which the role of Islamic banks can be significant.

The paper is organized as follows. Section "Literature review and Theoretical framework" gives a brief overview of sustainable development and Islamic banking principles. Relationship between SDGs goals and Islamic economic foundations is given in the third section. Disclosure practice about social, economic and environmental elements among Islamic banks is given in the fourth section. Conclusion is given at the end.

2. LITERATURE REVIEW AND THEORETICHAL BACKGROWND

Sustainable development as a process and a new concept of global action gain interest in 1987 when *"Our Common Future"* report was published emphasizing that "*sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs"* (Brundtland, 1987).

According to Oxford Living Dictionaries, sustainable development is an "*economic development that is conducted without depletion of natural resources"*. This definition notes that "*international policies should support sustainable development"* and *"sustainable development has become the guiding theme in much environmental literature"* (Oxford Dictionary, 2017).

Strandberg (2005) explains that financial institutions are *"the key to sustainability, as they raise, allocate and price capital and provide risk coverage, influencing access to financing and risk protection, and determining which government, business or individual activities get financed or protected against risks."* In the aspect of relationship between corporations and sustainability, Doane and MacGillivray (2001) explain that business sustainability is actually *"the business of staying in business"*.

Peeters (2003) notes that financial instruments can be observed as a way to reach sustainable development because, in this particularly case, banks intermediaries between people and organizations but at the same time takes care about the potential risks. On the other hand, their activities can have an effect on the environment because of their landing actions.

In the Report *"Managing Sustainability risks and opportunities in the financial services sector"* by PwC (2012) there is a list of business benefits of responsible investment as presented in the next table.

Table 1: List of business benefits of responsible investment

Improving risk management	Preserve license to operate
Enhanced brand and reputation	Promoting and increasing innovation
Customer attraction and retention	Improved access to capital
Enhance human and intellectual capital	Building and sustaining shareholder value
Attracting and retaining talented staff	Identification of new opportunities
Improved operational efficiency	Generating increased revenues

Source: PwC (2012)

Aliyu et.al (2017), notes that sustainable banking is the bank's ability to have long-term solvency and prosperity so impact on social well-being and environmental protection could be possible. This is important to emphasize because the 17th goal of SDGs is partnership for the goals which means that in order to achieve it, institutions that are foundation of an economic and financial system in the country must be stable. In terms of banks role, especially Islamic banks, Ahmed, Asutay and Wilson (2014) notes that if all banks were Islamic, financial crises would be less likely mainly because Islamic banks have built-in stabilizers that lower the probability of crises.

Stable partner for the accomplishment of sustainable development is very important. This goal can be achieved by socio-economic involvement that also includes environment issues. In terms of Islamic socio-economic model, Chapra (1992) explains that is based on a paradigm *"which has socio-economic justice as its primary objective. This objective takes its roots in the belief that human beings are the vicegerents of the One God, Who is the Creator of the Universe and everything in it. They are brothers into each other and all resources at their disposal are' a trust from Him to be used in a just manner for the well-being of all. They are accountable to Him in the Hereafter and will be rewarded or punished for how they acquire and use these resources. "*

Islamic banking is a financial activity done in accordance with Islamic religious law (Sharia), and it is based on different principles compared to conventional banking (Hanić, 2017). According to Islamic Banking Act (1983) brought in Malaysia, *"Islamic bank means any company which carries on Islamic banking business while Islamic banking business means banking business whose aims and operations do not involve any element which is not approved by the Religion of Islam"*. Regarding the fact that the principles of Islamic banking are at the same

time the principles of Islam, ideology in terms of realization of social interests is very important because the stronger the ideology is, *"the divergence between the choices individuals make and those expected of them are less" (Iqbal & Mirakhor, 2007).*

Islamic banking implies the prohibition of usury[1] (Riba), prohibition of speculative activities (uncertainty or Gharar), prohibition of gambling (Maysir) and the promotion of risk sharing. On the other hand, it strictly forbids interest according to Qur'anic verse (*God has permitted trade and has forbidden interest*; 2:275). In order to avoid interest, Islamic banking system replaced it with returns from investments activities and operations. This is connected to main characteristic of Islamic banking and that is the use of Profit and Loss Sharing (PLS) Paradigm.

PLS implies a direct concern regarding the profitability of the undertaken investment on the part of the creditor, which is the Islamic bank. In practice it means that Islamic bank must be focused on the return on the undertaken investment, *"because its profitability is directly linked to the real rate of return"* (Mirakhor and Zaidi, 2007). On that basis Islamic banks are exposed to the displaced commercial risk.

Basic division of Islamic banking products refers to:

a) sales based (Murabaha, Istisn'a, Ijarah, Tawarruq),
b) equity based (Musharakah, Mudarabah),
c) fee based (Wakalah, Kafalah, Rahn),
d) Islamic deposits (Wadai'ah, Qarḍ, Tawarruq),
e) Investment Accounts (Mudarabah, Musharakah) and
f) Investment Accounts (Wakalah).

According to authors Panzac (2002); Khalilieh (2006) and Çizakça (2014) citied in Ng, Mirakhor and Ibrahim (2015), *"Islamic partnership (Mudarabah) was brought from Jerusalem to France during the late twelfth century and was incorporated into the Lex Mercatoria—the medieval European law of commerce"*. Generally, reason for prohibition of interest is based on public interest. In that aspect, profit is as *"ex post and symbolizes successful entrepreneurship and the creation of additional wealth while interest is ex ante and represents cost that is accrued irrespective of the outcome of business operations and may not create wealth if there are business losses"* (Iqbal & Mirakhor, 2011).

[1] In some literature we can found that authors associate *Riba* with interest but it is important to notice that Riba has broader meaning.

Contrary to conventional banking, Islamic banking analyses the structure of a business investment which means that each phase of an investment implementation must be in accordance with Sharia. This means that Islamic banks are exposed to Sharia risk that doesn't exist in the classification of conventional risks because every Islamic bank has its own Sharia Supervisory Board (SSB) in order to approve or disapprove certain financial activity. In that aspect, SSB certifies Islamic financial products as Sharia-compliant. Islamic economic model can be found in many verses in the Qur'an, as the basics of Islamic economy, which is given in the next table.

Table 2: Islamic economic model by the verses in the Qur'an

Field of economy	**Verses**
The role of Fiscal Policy	3:259, 8:72, 12:47
Interest, Bounty/Income	2:279, 16:14, 18:96
Public Debt	2:275, 278, 30:39, 57:11, 4:161
Lending as Moral Phenomenon	2:275-280
Prohibition of Interest	2:265-270
Social Relations vis a vis Interest	2:178,195,24:61
Debtor – creditor Relationship	2:279-280
Impact of Interest to social economic	2:276, 30:39
Productive Activities	21:80, 34:11, 13; 11:37, 26:128
Trade	2:198, 5:2, 73:20
Objective of economic activities	2:201, 7:31, 28:77, 62:10
Moral values of economic activities	21:37, 89:20
The Wealth	3:14, 25: 7,8; 71:12;104:1-2
The Money	2:188, 276; 8:2-4; 9:34;98:5
Human behavior towards money	17:100; 89: 20; 100:8
The Contract	4:12,8:41,30:28, 33:27
Business conduct	2:283, 7:85, 11:84, 17:35, 26:181
Business Profit	45:2-5, 62:9-10, 103:3
Philanthropy	3:117, 267, 4:34, 8:36, 13:22
Revenue	2:3, 31:34, 8:41, 17: 29

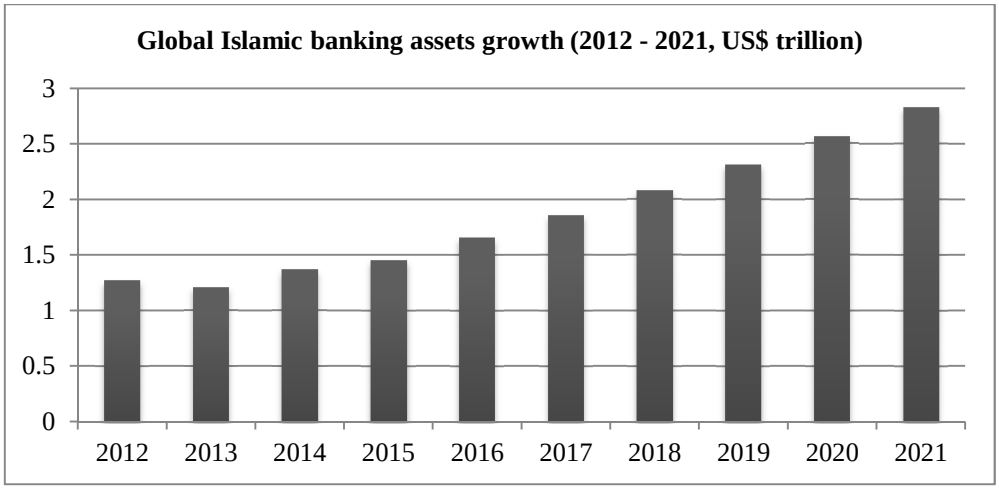
Source: Ismail (2014). Sustainable Development Goals and The Role of Islamic Finance

In the institutional way, Islamic economy starts to develop after the end of the decolonization process, in the 1950s. In this regard, the first bank was founded in 1963 in Egypt, while one of the important dates in Islamic finance history is the establishment of the Islamic Development Bank in 1975. Ever since, Islamic banking captures the attention of the world public and, according to Warde (2000), its most important part of development has been its inclusion in international financial flows.

In the aspect of internationalization, events that happened in 2015 like the launch of Diploma in Islamic Finance in Belgium and Luxembourg, opening the Germany's first Islamic bank (KT Bank) in Frankfurt or the launch of Hong Kong's second sukuk[2], (Thomson Reuters' Islamic Finance Development Report, 2016) means that Islamic banking and finance is present worldwide. This is consistent with the Lord Edward George statement from 1995, quoted in Ainley at al. (2007), in terms that there is *"growing importance of Islamic banking in the Muslim world and its emergence on the international stage"*. In 2014, UK became first country in the West to issue sukuk and London is seen as a center of Islamic banking in Europe.

In 2016, Thomson Reuters' Islamic Finance Development Indicator was published where the estimates show that by 2021 Islamic banking assets will reach US$2.8 trillion as shown in chart below (IFDI 2016).

Chart 1: Expected Islamic banking assets globally



Source: Thomson Reuters' Islamic Finance Development Indicator

In 2015, The Banker published *Top Islamic Financial Insitution Report*, that includes twenty largest countries ranked by total Sharia – compliant assets represented in the next table.

[2] Sukuk is a Sharia compliant bond. Accounting and Auditing Organization for Islamic Financial Institution (AAOIFI) define sukuk *as „securities of equal denomination representing individual ownership interests in a portfolio of eligible existing or future assets".*

Table 2: Twenty largest countries ranked by total Sharia – compliant assets

Rank	Country	Total Sharia compliant assets (in bn of US$)
1	Iran	316,423
2	Saudi Arabia	306,807
3	Malaysia	206,309
4	UAE	111,294
5	Kuwait	84,448
6	Qatar	70,898
7	Bahrain	65,068
8	Bangladesh	22,298
9	Indonesia	21,044
10	Pakistan	10,101
11	Sudan	7,467
12	Egypt	7,015
13	Switzerland	6,879
14	Turkey	5,950
15	Brunei	5,025
16	UK	3,811
17	Thailand	3,797
18	Yemen	3,549
19	Syria	2,881
20	Algeria	2,516

Source: The Banker, (2015)

But, in spite of such an extraordinary growth, according to Hayat & Malik (2014), there are several misconceptions associated with Islamic way of doing business that include:

- Muslims and Islamic finance are monoliths that conform to generalizations;
- Modern Islamic finance is a relatively old and mature industry;
- Muslims, in general, understand the theory and practice of Islamic finance and follow it in their financial lives;
- Islamic finance enjoys active government support in most Muslim-majority countries;
- Assets of Islamic finance tend to be greater than those of conventional finance in most Muslim-majority countries;
- Sharia is the governing law in all countries with a Muslim majority, and Islamic finance transactions are governed only by Sharia;
- Islamic finance is not open to non-Muslims;

- Islamic finance is mainly about charitable rather than commercial activities;
- Islamic finance involves illegal activities, such as money laundering and even the financing of terrorism;
- The prohibited Riba is the same as interest;
- Islamic finance is recession proof and immune from unethical practices and
- The Islamic finance industry is widely believed to be Islamic in form and in substance.

In order to avoid misconceptions and assumptions about Islamic banking, it is necessary to investigate the practice of Islamic banks regarding their activities in terms of achieving the three basic pillars of SDGs. This is important for the following reasons:

- Islam, as the basis and source of Islamic banking, emphasize the achievement of public interest as its primary goal. If we consider that this postulate is more than 1430 years old then the achievement of a public interest through the three dimensions of SDGs should be a mandatory or an integral part of the operation of Islamic banks, in relation to conventional banks where this practice is mainly non-binding;
- Because Islamic banking is still in the process of development, it is necessary to explore the degree of disclosure practice among Islamic banks comparing to conventional that are still the dominate institutions in the global financial structure;
- Identification of the ethical identity of Islamic banks through the prism of relations towards the three basic pillars of the SDGs in terms of determining their social engagement in the society in which they operate. The above mentioned elements will be analyzed below.

3. SUSTAINABLE DEVELOPMENT IN ISLAMIC BANKING AND SDGS

Generally, Islamic principles date from the 7th century which means that Islamic banks should be a representative of those values. In that aspect it is important to analyze and compare Islamic social values and SDGs. In terms of that, in Islam it is important to mention *Maqasid al Sharia* also known as the "Objectives" or "Purpose" of the Islamic Law. Auda (2007) notes that most of Islamic scholars advocate that *Maqasid al Sharia* refers to "people's interests" *(arab. Masleha).* In other words, it means that the purpose of Sharia is to accomplish the public interest.

Great Islamic Scholar, Ibn al-Qayim, quoted in Auda (2007) states that Sharia *is "based on wisdom and achieving people's welfare in this life and the afterlife. Sharia is all about justice, mercy, wisdom, and good. Thus, any ruling that replaces justice with injustice, mercy with its opposite, common good with mischief, or wisdom with nonsense, is a ruling that does not belong to the Sharia, even if it is claimed to be so according to some interpretation"*. If we compare this approach to one of the 17 goals of SDGs, great resemblance exists with the 16th goal of SDGs; peace, justice and strong institutions.

In addition, the social engagement of Islamic banks can be seen through the relationship of these institutions towards Zakat, which Islamic banks, as well as individuals who are in financial capacity, are obliged to allocate for the benefit of the society. Authors Hayat and Malik (2014) define Zakat as a social welfare tax in terms that it is an annual tax on surplus income and wealth of Muslims and is equivalent to 2.5% of net worth in general. In Islamic teaching it is very important because it represents one of the five sacred pillars of Islam (Quranic verses 92:14-21; 2:177; 9:103).

Second social engagement of Islamic banks is seen through qard hasan credits as a form of benevolent credits where, according to Iqbal (2009), lender can't receive any benefit in return. This can be observed as a goal to achieve the redistribution of wealth in the aspect of poverty alleviation. If we compare it to SDGs, this can respond to the first goal of SDGs; no poverty. Also, this type of credit is very popular among students in order to daunt costs of education. In this aspect, this is consistent with the 4th goal of SDGs; quality education.

Characteristics of qard hasan are given in the next table.

Table 3: Qard hasan characteristics

A non-rewarding loan but with the moral obligation of a borrower to repay the principal if he is in a financial position to do so. If the borrower is not financially capable to return the borrowed amount, than the creditor will "forgive" the credit.
A credit with a benevolent purpose.
A credit with the aim to help the poor to become part of economic activity especially in terms of providing opportunities to create job and business ventures.
Qard hasan credit practice strives to achieve balance among those who are financially more stable than those who are not in order to enhance financial and social inclusion.

Source: Modified according to Iqbal and Shafik (2015). Islamic finance and the role of qard-al-hassan (benevolent loans) in enhancing inclusion: A case study of akhuwat

Although Islamic banks are considered to be involved in social activities, they are not charity institutions and tend to achieve a positive financial result. This is important because of the trust of their stakeholders as well as partners with whom they enter into business ventures. As already mentioned, trust and stability of these institutions is what led to theirs greater expansion.

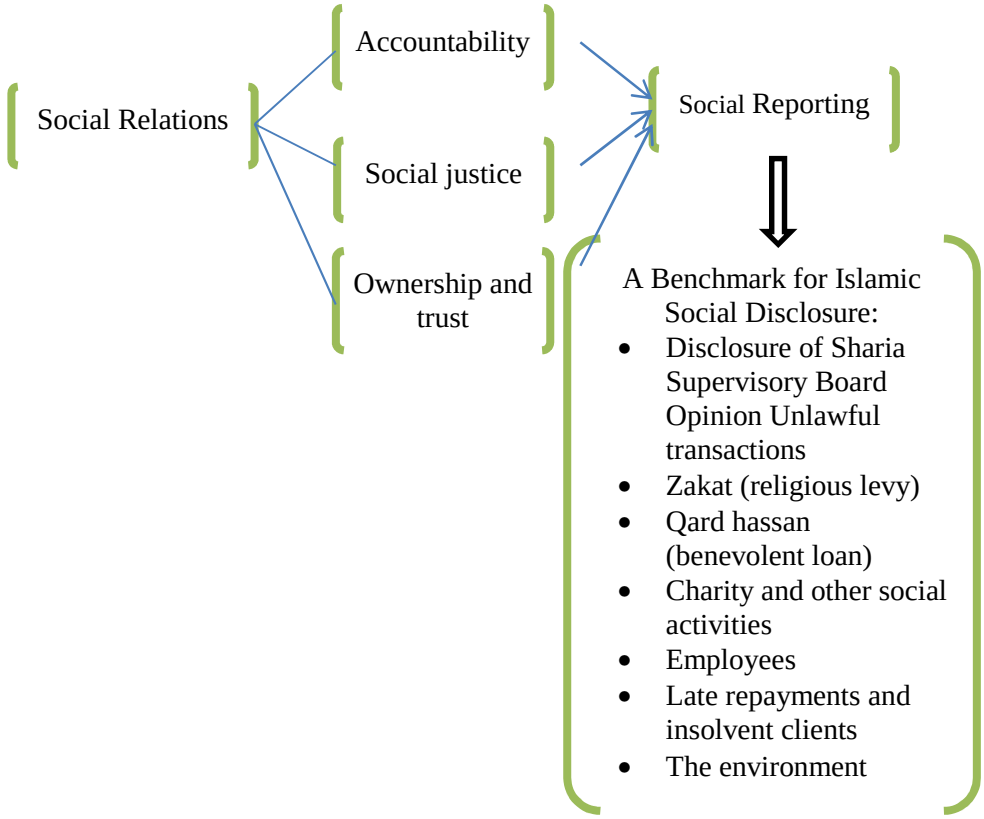
In order to examine Islamic banks role in economic, social and environment activities, disclosure practice can be considered as a way of exploring this three elements. This is important because Islamic banking is still developing and the market conditions are mainly created for the conventional banks. On the other hand, Islamic banks are learning certain economic rules and models of behavior in the global market and making their own criteria and reporting standards. In that aspect, disclosure practice among Islamic banks is presented in the next part.

4. DISCLOSURE PRACTICE AMONG ISLAMIC BANKS

Disclosure practice among Islamic banks is important for several reasons which also includes agency problem theory where according to Safieddine (2009) the issue of the separation of ownership and control is grater for Islamic banks because managers of Islamic banks must strive to maximization of shareholder's wealth and at the same time provide that those activities are done in accordance with Sahria.

The amount of disclosure practice among Islamic banks, regarding the elements that can affect sustainability in one society, can be analyzed by using the method developed by authors Haniffa and Hudaib (2007). It is based on creating an Ethical Identity Index (EEI). This is important to analyze because of the difference between the communicated and the ideal ethical identity about Islamic banks but also between the banks themselves. On the other hand, Islamic banks are obligated to inform public about their activities as related to Qur'an: "*and cover not truth with falsehood, nor conceal the truth when you know (2:42).* This can be explained by the next graph.

Graph 1: Social Relations Framework in Islamic economy



Source: Maali et al. (2006)

EEI can be used in order to quantify the extent of Islamic banking activities in every aspect of its social inclusion, including economic, social and environment activities. Index is based on the principles of content analysis and uses annual reports of Islamic banks. Primarily it analysis 78 indicators grouped into 8 dimensions: 1) vision and mission statement, 2) BOD and top management, 3) product, 4) Zakat, charity and benevolent loans, 5) employees, 6) debtors, 7) community and 8) Shariah Supervisory Board (SSB).

The Index is calculated as follows:

$$EEI = \frac{\Sigma_{i=1}^{n} xijt}{N}$$

Where:

EEI Index – Ethical Identity Index for dimension j and period t;
Xijt is variable X (1,... n) for dimension j and time t and has value 1 if the item is disclosed or 0 if otherwise;
N is the number of variables/statements

The aspect of social involvement analyzed by the disclosure practice can be observed through the level of Zakat disclosure. Beside this social element, Zakat can also be observed from the aspect of its economic effect because it leads to an increase in money supply which ultimately affects the demand for products and services. The result is that economy is moving forward.

Quraishi (2011) explains that Zakat has an impact on micro and macro economy but at the same time it can be seen as a fiscal mechanism. For instance, in micro aspect it helps to ensure the individual's needs by taking into account the public interest while on the macro aspect it deals with the distribution of wealth. The fiscal mechanism can be observed through the social inclusion by forming funds for the care of the most vulnerable categories of the population that also includes food subsidy, education, health care etc.

As mention above one of the EEI dimension includes *Zakat, charity and benevolent loans*. This dimension described by Haniffa and Hudaib (2007), is component of the following elements:

a) Zakat to be paid by individuals
b) Bank liable for Zakat
c) Amount paid for Zakat
d) Sources of Zakat
e) Uses/beneficiaries of Zakat
f) Balance of Zakat not distributed – amount
g) Reasons for balance of Zakat
h) SSB attestation that sources and uses of Zakat according to Sharia
i) SSB attestation that Zakat has been computed according to Zakat
j) Sources of charity (saddaqah)
k) Uses of charity (saddaqah)
l) Amount of qard hasan
m) Sources of qard hasan
n) Uses of qard hasan
o) Policy for providing qard hasan
p) Policy on non-payment of qard hasan

In the research done by Mosaid and Boutti (2012) among 8 Islamic banks in the period 2008 – 2009 the result show that the level of Zakat disclosure is low where information like source of Zakat or uses or beneficiaries of Zakat were missing which can be considered as a sensitive matters. In 2016, authors Samed and Said (2016) conducted a research among 16 Islamic banks in Malaysia in 2014 and the research showed that the overall mean about Zakat disclosure was 0.70. These results also show that during the time disclosure practice is improving but still it is not on a required level.

In terms of environment disclosure, research done by authors Farook, Hasan and Lanis (2011); Yahya, Abul Rahman and Tayib (2005); Darus, Yusoff and Mohd Azhari (2013); shows that practice of disclosure, including environment activities, among Islamic banks varies from region or certain country. This can be result of several factors such as:

- the level of development of Islamic banking in the country or the region that is being observed,
- the level of the priority given to environment protection and disclosure practice in the country or the region that is being observed,
- the reporting practice in the country or the region that is being observed.

For instance, in Malaysia where Islamic banking is present since 1983, Central bank of Malaysia, Bank Negara Malaysia, issued guideline on financial reporting for licensed Islamic Banks called GP8-i. This is not a practice among all the countries that implement Islamic banking. In this aspect, in 2015 Islamic Reporting Initiative was founded as a "*reporting framework for Corporate Sustainability and Social Responsibility (CSR) aligned with Islamic principles, beliefs, and values*" (IRI, 2015).

The issue with the low level of disclosure practice among Islamic banks can be associated with the fact that Islamic banking is still developing and it needs time to become an active participant in this field. Also, Islamic banks are probably more focused on the Sharia complaint requirement of a certain activity. But this reason must be taken with reserve because environment protection is also an integral part of Sharia regarding the fact that more than 750 verses in the Qur'an are addressing the issue of nature.

Finally, the relationship towards society and its elements, economic, social and environmental issues, in Islam are regarded as a whole rather than as a separate part, which is probably one of the reasons why the Islamic banks have not yet separated these elements to specific fields of their activities that they have to take care more actively.

4. CONCLUSION

Sustainable development is a topic that is attracting the world's attention from 1987 and the Brundtland report. In 2015, the UN General Assembly established 17 Sustainable Development Goals (SDGs) to be accomplished by 2030. These goals are based on three pillars: economic, environmental and social. In order to achieve this, financial institutions, especially banks, need to be a stable and very active participant in this process. This is important to note because the process of sustainable development requires the commitment of those who are striving to sustainability.

As active participant in the world economy, banks, especially Islamic banks can be observed as a barrier of sustainable development because of their core values that are different comparing to conventional. In this aspect, Islamic social values or Islamic law (Sharia) are comparable to SDGs and the role of Islamic banks can be observed through the adoption of these goals by the implementation of the Sharia. In this aspect the level of the disclosure practice among Islamic banks can also indicate the application level of Sharia.

The emphasis is placed on economic, social and environmental disclosure practice among Islamic banks by using the methodology of Ethical Identity Index. The level of Zakat and environment disclosure was observed with an emphasis on the theoretical background of the paper. As mentioned, Zakat is defined as a social welfare tax which amounts 2,5% and beside the social effect on the society it also has an economic impact because it leads to an increase in money supply which ultimately affects the demand for products and services. The used research showed low level considering Zakat but also environment disclosure practice among Islamic banks, especially depending on the region where the research is done.

Reasons for such results can be found in the fact that Islamic banking is still developing and the reporting practice among the countries that are implementing it is different.

ACKNOWLEDGEMENT

This paper is a part of research projects numbers III47009 (European integrations and social and economic changes in Serbian economy on the way to the EU) and OI179015 (Challenges and prospects of structural changes in Serbia: Strategic directions for economic development and harmonization with EU requirements), financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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FINANCIAL POWER AND DEVELOPMENT POTENTIAL OF ENVIRONMENTALLY RESPONSIBLE MEDIUM SIZED ENTERPRISES IN THE SERBIAN INDUSTRIAL SECTOR

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Abstract: *The aim of the research is to determine the economic and financial power of medium-sized enterprises registered in the Republic of Serbia (RS) in the sector C: Manufacturing and an assessment of the development potential of environmentally responsible enterprises. The focus of the research is on environmentally responsible enterprises i.e. "green enterprises" for there is a need to search for ways to improve the economic sustainability of green business. The subject of the research refers to values of financial performance of enterprises in the period 2011-2015. Economic and financial power of enterprises was assessed by using the method of financial analysis. Financial analysis was carried out based on the information disclosed in the official financial statements of enterprises which are publicly available on the website of the Business Registers Agency. With the application of financial analysis, the yield, asset and financial position of enterprises was determined. In order to assess the yield position of enterprises, an analysis of the structure and arrangement of total revenues, structure and arrangement of gross financial result and profitability was performed. In order to assess the asset position of enterprises, an analysis of the structure and source of assets and of the efficiency of current asset management was performed, and for the purpose of assessing financial position of enterprises an analysis of liquidity, solvency and indebtedness was conducted. The analysis of the reasons medium-sized industrial enterprises are unprofitable is conducted for the purpose of determining their development potential. In order to examine the reasons of unprofitable operation, firstly enterprises which reported net loss in 2014 were identified. The possibility of determining the development potential is analyzed on the sample of five enterprises which reported above the average net loss in 2014, and which are characterized by conducting environmentally responsible business activities. The focus of the research is on "green enterprises" because there is a need to improve the economic sustainability of green business. The results of the research indicate that economic sustainability of*

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environmentally responsible enterprises can be achieved by improving the real capacity utilization rate at current global price parity or by strengthening the global price parity at current real capacity utilization rate.

***Keywords**: medium-sized enterprises, industry sector, economic and financial power, environmentally responsible business, potential, Serbian economy*

1. INTRODUCTION

The development potential of environmentally responsible medium-sized enterprises registered in the RS in sector C: Manufacturing is assessed following the analysis of their economic and financial power in the period 2011-2015. The focus of the research is on medium-sized enterprises, which, in terms of key macroeconomic indicators, are the pillars of the economic growth of the national economy (Erić et al., 2012; Paraušić et al., 2017).

According to the current data of the National Bank of Serbia (NBS), medium-sized enterprises that make up only 2% of the total number of companies in the Republic of Serbia generate 16% of the total net profit realized, i.e. 14% of total net loss of all companies in the country, 17% of income, 16% of expenditures and even 16% of total employment. Medium-sized enterprises, which account for only 0.7% of the total number of SMEs, generate 33% of GVA, 30% of turnover, 40% of imports, 48% of exports and 29% of employment.

According to the data of the Serbian Business Registers Agency (SBRA) for 2015, 1004 medium-sized enterprises operated in the territory of the RS. They account for 37% in the structure of the total number of medium-sized enterprises registered in sector C: Manufacturing.

The results of the research of the Institute of Economic Sciences within the project "National Network of Medium-Sized Enterprises" point to the fact that the largest number of medium-sized enterprises in the manufacturing industry operate in low technology and medium-low technology areas. There are 24.2% of enterprises engaged in the production of food products, while 13% are engaged in the production of all metal products, except machines and devices. On the other hand, 23.9% of medium-sized enterprises operate in medium-high and high technology areas. These data indicate a relatively unfavourable technological structure. Almost half of medium-sized enterprises operate in low-tech areas and produce effects of lower added value, which makes it difficult for market positioning. Nevertheless, medium-sized enterprises registered within the sector C: Manufacturing, generate about 40% of the total employment in middle-sized enterprises in the RS.

Regional analysis indicates roughly the same geographical distribution of medium-sized industrial enterprises. Out of the total number of medium-sized industrial enterprises, 33% are registered in the territory of Vojvodina, 28% in the territory of Šumadija and Western Serbia, 25% in the territory of Belgrade and 14% in the territory of South and East Serbia.

Out of the total number of medium-sized enterprises registered in the sector C: Manufacturing, 74% operated with a net gain in 2015. Enterprises that operate with net gains employ 76% of the total number of employees in medium-sized enterprises in sector C: Manufacturing.

The selection of the subject of the research was influenced by the fact that 74% of companies surveyed, which employ 76% of the total number of employees in sector C: Manufacturing and 30% of the total number of employees in companies of this size, operate with net gains in 2015. The subject of the research refers to the values of financial performance of all medium-sized enterprises registered within the sector C: Manufacturing in the period 2011-2015. Time period of the research provides the possibility to compare data over time and observe the movement of the basic development indicators. The aim of the research is to determine the economic and financial power of medium-sized enterprises registered in the Republic of Serbia in sector C: Manufacturing, and to assess the development potential of environmentally responsible enterprises. The research begins with the hypothesis according to which medium-sized enterprises registered within the sector C: Manufacturing can improve the economic sustainability of their environmentally responsible business operation by performing an adequate financial performance management.

2. MATERIAL AND METHOD

The aim of the research was realized using the standard method of data collection and analysis, methods of quantitative and qualitative financial analysis, methods of description and methods of synthesis. The methodology is performed on the basis of many years of research practice of the authors (Đuričin, S. and Beraha, I., 2017, p. 147; Đuričin, S and Đukić, M., 2017, p. 95; Đuričin, S., and Beraha, I. 2016, p. 343; Đuričin, S., and Beraha, I., 2016, p. 712; Đuričin, S., and Jovanović, O., 2016, p. 54; Đuričin, S. and Beraha, I., 2014, p. 693; Lazarević-Moravčević, M., Stevanović, S., and Belopavlović, G., 2014, Đuričin, S. and Beraha, I., 2013, p. 124; Đuričin, S. and Bodroža D., 2013, p. 26; Đuričin, S., Beraha, I., and Đulić, M., 2013, p.588; Đuričin, S., 2012; Đuričin, S. and Beraha, I., 2012, p. 495).

Using the standard data collection and analysis methods, information was generated from the financial statements of medium-sized industrial enterprises publicly available on the website of the Business Registers Agency (BRA). The data disclosed in the individual official financial statements enabled the creation of the consolidated balance sheet and income statement of medium-sized enterprises registered in Sector C: Manufacturing. The subject of the analysis is the financial performance obtained from the consolidated financial statements of medium-sized industrial enterprises.

The analysis of the economic and financial power of enterprises covers the period 2011-2015. The assessment of the economic and financial power of medium-sized industrial enterprises was carried out using the methods of financial analysis. Qualitative methods of financial analysis were used for breakdown, while quantitative methods were used to measure the subject of the analysis for which temporal and spatial comparison were performed. By comparing the subject of the analysis over time, it is possible to compare the obtained results in several successive business years, which determines the moment of creation and the movement tendencies of basic development indicators. Spatial comparison of the subject of the analysis enabled the comparison with the average values of the analysis results. The results obtained by temporal and spatial analysis of financial performances provide the possibility of identifying bottlenecks in the operation, assessing the economic potential of medium-sized industrial enterprises, and imposing different alternative solutions for strengthening their development potential.

Ratio analysis was used for the purposes of financial analysis. For the purposes of research, the ratio analysis was first broken down to balance sheet ratio analysis and income statement ratio analysis. Balance sheet ratio analysis is divided into the ratio analysis of financial and asset position of medium-sized industrial enterprises. Assessing the financial position requires a calculation of the liquidity, solvency and indebtedness ratios, while assessing the asset position requires the evaluation of the structure of assets and liabilities, the economy and position of the company in the sale and purchase market. Ratio analysis of income statement refers to the analysis of the yield position of medium-sized industrial enterprises. For the purpose of assessing the yield position of the company, a calculation of the structure of the gross financial result, Operating Profit Margin (OPM), Return on assets (ROA), Return on Equity (ROE) and Return on Sales (ROS) was performed.

Following the assessment of economic and financial power and the identification of bottlenecks in operation, alternatives have been proposed for improving profitability and strengthening the development potential of environmentally responsible medium-sized industrial enterprises. Alternatives for improving the

profitability and development potential of environmentally responsible medium-sized enterprises are also the result of a financial analysis of the global sales and purchasing parity prices, the degree of utilization of actual capacity and the efficiency of management of working assets.

By applying the synthesis, the results obtained by the analysis are correlated into an interactive relationship. After the description of the established relationships between the obtained research results, conclusions are made on the economic potential of environmentally responsible medium-sized industrial enterprises in the Republic of Serbia.

3. RESULTS AND DISCUSSION

In the period 2011-2015, liquidity of medium-sized enterprises registered within sector C: Manufacturing is assessed as conditionally acceptable. Liquidity is acceptable due to the fact that in all business years, except 2014, enterprises had sufficient working capital required to cover short-term liabilities, and conditionally acceptable due to the fact that in the observed period they did not have a sufficient amount of liquid assets necessary to cover due short-term liabilities. From the aspect of second and third degree liquidity ratios, the payment capacity of medium-sized industrial enterprises decreased in the period 2011-2014, and then increased.

Table 1: Analysis of Liquidity

Indicator	2011	2012	2013	2014	2015
Second degree liquidity	0.77	0.76	0.66	0.62	0.64
Third degree liquidity	1.23	1.22	1.06	0.99	1.03

Source: Authors' calculation according to SBRA data

Medium-sized industrial enterprises were solvent in the observed period. Enterprises had a sufficient amount of operating assets needed to cover total debts. In the period 2011-2014, the ratio of the operating assets and total debt had a declining, and then a growing trend.

Table 2: Analysis of Solvency

Indicator	2011	2012	2013	2014	2015
Solvency ratio	1.62	1.58	1.55	1.52	1.55

Source: Authors' calculation according to SBRA data

In the period 2011 – 2015, borrowed capital prevails in total sources of financing. The share of borrowed capital in total sources of financing increased in the period

2011-2014. After 2014, the share of borrowed capital in total sources of financing decreased to 59.81%.

Table 3: Analysis of Indebtedness

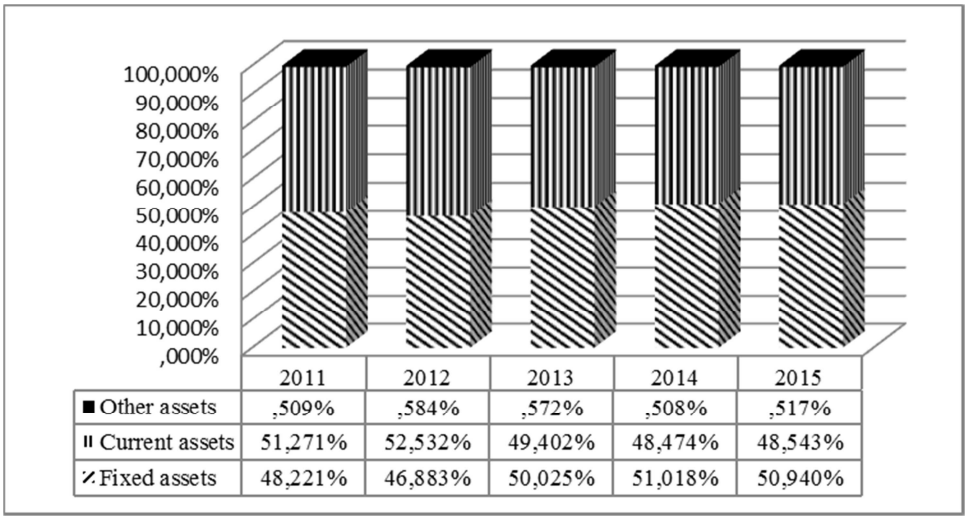
- in % -

Indicator	2011	2012	2013	2014	2015
Share of liabilities in total sources of financing	59.42	60.62	61.17	61.58	59.81

Source: Authors' calculation according to SBRA data

The company's assets structure comprises approximately the same portions of fixed assets and current assets. After 2012, the share of current assets is reduced to the benefit of fixed assets.

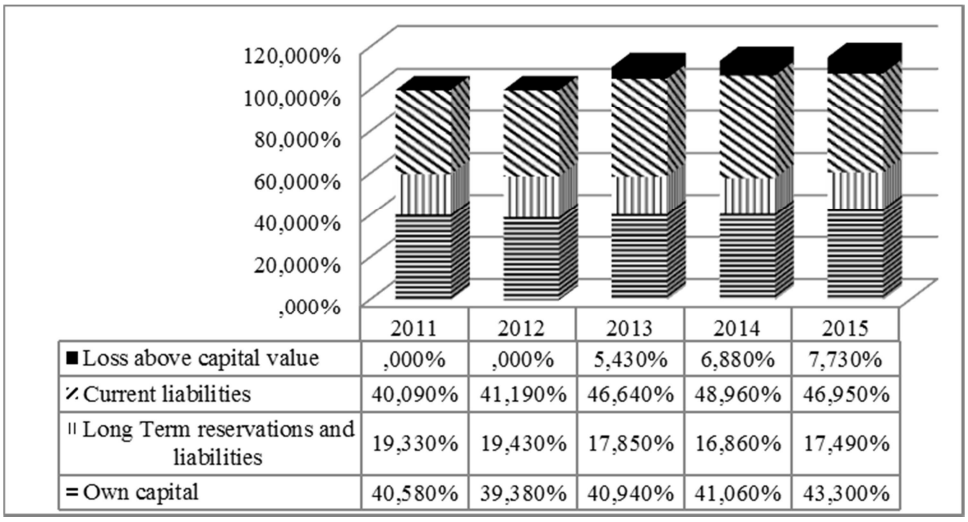
Chart 1: Analysis of Assets Structure



Source: Authors' calculation according to SBRA data

The structure of liabilities from the aspect of ownership changed in favour of borrowed capital. Within the borrowed sources of financing, the dominant share is recorded for short-term liabilities. In the period 2011-2015, short-term liabilities accounted for 44.47% and capital 41.05% on average in the total liabilities. Loss above capital value was characteristic for the period 2013-2015 and recorded an increase.

Chart 2: Analysis of Liabilities Structure



Source: Authors' calculation according to SBRA data

In the period 2011-2015, the operation of medium-sized industrial enterprises within the overall and operating activities is estimated to be economical. Within the financial activities of the companies, they operated uneconomically throughout the observed period.

Table 4: Analysis of Economy

Indicator	2011	2012	2013	2014	2015
Economy of overall operation	1.03	1.02	1.01	1.00	1.02
Economy of operating activities	1.06	1.07	1.04	1.05	1.05
Economy of financing	0.56	0.45	0.51	0.31	0.51

Source: Authors' calculation according to SBRA data

Under certain conditions, medium-sized industrial enterprises have a better position in the sales than on the purchasing market. Better position in the sales market was achieved due to the fact that in the period 2011-2015, they collected their receivables on average every 127 days, while they paid their obligations every 185 days. Conditionally better position was achieved because the deadlines for collection of receivables and settlement of liabilities were prolonged and lasted for more than three months. Compared to 2011, the number of days required for collecting receivables reduced from 133 to 121, while the number of days required to settle liabilities increased from 172 to 188 days in 2015.

Table 5: Analysis of company's position in the sale and purchase market

Indicator	2011	2012	2013	2014	2015
Accounts receivable turnover coefficient	2.75	2.84	2.81	2.97	3.02
Duration of one accounts receivable turnover	133	129	130	123	121
Accounts payable turnover coefficient	2.12	2.16	1.86	1.84	1.94
Duration of one accounts payable turnover	172	169	196	198	188

Source: Authors' calculation according to SBRA data

In the period 2011-2015, the operation of medium-sized industrial enterprises was assessed as successful. In all observed years except in 2014, companies conducted absolutely successful operation. Absolute operating success is the result of a positive result from the regular operation and the total gross financial result. In 2014, the negative gross financial result, with a gain from regular operations, resulted in conditionally successful operations. Enterprises recorded an increase in terms of operating success. In 2015, compared to 2014, the result from regular operation increased from RSD 11,384 thousand to RSD 17,237 thousand, while the total gross financial result increased from RSD 10,792 thousand to RSD 11,963 thousand.

Table 6: Analysis of the total gross financial result structure

- in thousands RSD -

Indicator	2011	2012	2013	2014	2015
Operating result – net effect	20,030	26,843	18,752	23,281	25,399
Result from financing	-8,647	-17,159	-9,763	-18,603	-8,162
Result from regular operation - net effect	11,384	9,684	8,989	4,679	17,237
Result from income from valuation adjustments of other assets - net effect	0	0	-6,290	-6,421	-7,290
Result from other income - net effect	-592	1,394	669	-529	2,016
Gross financial result - net effect	10,792	11,078	3,369	-2,272	11,963

Source: Authors' calculation according to SBRA data

In all observed years except in 2014, medium-sized industrial enterprises operated profitably. The negative gross and, consequently, the net financial result in 2014 caused the negative value of ROA, ROE and ROS.

The higher cumulative operating profit in relation to cumulative operating loss resulted in a positive net effect, i.e. a positive rate of operating profit. In the observed period, each dinar of operating income of medium-sized industrial enterprises averaged 5.15% of operating profit.

Table 7: Profitability Analysis

- in % -

Indicator	2011	2012	2013	2014	2015
Operating Profit Margin – net effect	5.37	6.22	4.25	4.89	5.00
Return on assets – net effect	2.26	1.85	0.28	-0.89	1.61
Return on Equity – net effect	5.56	4.71	0.68	-2.18	3.71
Return on Sales – net effect	2.65	2.08	0.32	-0.99	1.77

Source: Authors' calculation according to SBRA data

In the period 2011-2015, medium-sized industrial enterprises earned 1.02% of net profit on average for each dinar invested in total assets, while they earned 2.5% of the net profit on average for each dinar of invested own capital. In the period 2011-2015, medium-sized industrial enterprises accumulated on average 1.17% of operating income in the form of net profit.

For the purposes of determining the development potential of medium-sized industrial enterprises, an analysis of the causes of unprofitable operation was performed. Non-profitable operation at the level of all medium-sized industrial enterprises in the Republic of Serbia was identified only in 2014. In order to examine the cause of unprofitable operation, the companies that operated with net loss in 2014 were first identified. In 2014, 29% of the total number of medium-sized enterprises registered in sector C: Manufacturing operated with net loss. The possibility of determining the development potential was analysed on a sample of five enterprises that operated with an above-average net loss in 2014. These are also the enterprises with the identified non-profitable operation within the regular operating activity. Besides the value of net loss, the main criterion for selecting enterprises in which the developing potential is examined refers to environmentally responsible business operation. Environmentally responsible business means that selected enterprises use renewable energy sources (environmentally sustainable) in their operation and pay attention to the impact of their activities on social aspects (socially responsible). The purpose of focusing this research on "green enterprises" is embodied in the need to improve the economic sustainability of green business.

The results of the analysis on operation of the least profitable environmentally responsible medium-sized industrial enterprises in 2014 show that the loss occurs as a result of a reduction in operating revenues, a reduction in the contribution margin and an increase in financial expenses. The decrease in operating income is a consequence of the deterioration of the global sales and purchasing parity prices, while the contribution margin declined due to insufficient use of actual capacity. On the other hand, financial expenditures increased due to inefficient use of working capital.

Table 8: Reduction in operating revenues due to a decrease in global parity, 2014

- in thousands RSD -

Enterprises	Variable material expenditures	Average global parity price at sector level	Operating income at an average global parity price	Actual operating income	Reduction of operating revenues due to the reduction of global parity price
	1.	2.	3. (1. x 2.)	4.	5. (3. – 4.)
1	1,541,452	1.8	2,774,614	2,623,038	151,576
2	1,923,183	1.8	3,461,729	2,496,118	965,611
3	841,304	1.8	1,514,348	1,454,792	59,556
4	1,071,166	1.8	1,928,098	1,802,599	125,499
5	538,600	1.8	969,479	268,700	700,779

Source: Authors' calculation according to SBRA data

With all environmentally responsible medium-sized industrial enterprises, which recorded the least profitable operation in 2014, a decrease in operating revenues was identified due to deterioration of the global sales and purchase parity prices. Enterprises recorded a lower global parity price compared to its average value at the level of the sector that in 2014 amounted to 1.8.

The deterioration of the parity price caused operating revenues lower than those that would have been achieved if the parity value remained at the sector's average. The largest decrease in operating revenues due to the deterioration in the global parity prices, in the amount of RSD 965,611 thousand, was registered with the enterprise number 2, and the lowest with the enterprise number 3, in the amount of RSD 59,556 thousand.

Table 9: Reduction in contribution margin due to the insufficient use of actual capacity, 2014

- in thousands RSD -

Enterprise	Contribution margin	Degree of utilization of actual capacity (%)	Contribution margin at 100% utilization of actual capacity	Reduction in contribution margin due to insufficient use of actual capacity
	1.	2.	3. (1./2.) x 100	4. (3. – 1.)
1	1,081,586	75	1,442,114	360,529
2	572,935	60	954,892	381,957
3	613,488	65	943,827	330,339
4	731,433	70	1,044,905	313,471
5	-269,900	100	-269,900	0

Source: Authors' calculation according to SBRA data

Only in case of enterprise number 5 there is no reduction in contribution margin due to insufficient use of actual capacity. This is because enterprise no. 5 was unprofitable with 100% of the utilization of actual capacity. In all other medium-sized industrial enterprises, characterized by the least profitable operation in 2014, a reduction in contribution margin was identified due to insufficient use of actual capacity. In case of enterprises number 1 - 4, the degree of utilization of actual capacity ranged from 60 to 75%, which led to contribution margin lower than the one that would be recorded in case of using 100% of actual capacity.

The analysis of data over time revealed small differences in the intensity of the impact of insufficient use of actual capacity on the value of contribution margin. The greatest decrease in contribution margin due to insufficient use of actual capacity, in the amount of RSD 381,957 thousand, was registered with company number 2, and the lowest, in the amount of RSD 313,471 thousand, with company number 4.

Table 10: Increase in working capital due to inefficient management, 2014

- in thousands RSD -

Enterprise	Operating income	Average turnover ratio of current assets at sector level	Working capital at the average turnover ratio of working assets	Actual working capital	Increase in working capital due to a decrease in the turnover ratio
	1.	2.	3. (1./2.)	4.	5. (4.-3.)
1	2,623,038	1.8	1,457,243	3,919,077	2,461,834
2	2,496,118	1.8	1,386,732	5,783,161	4,396,429
3	1,454,792	1.8	808,218	1,859,510	1,051,292
4	1,802,599	1.8	1,001,444	2,772,036	1,770,592
5	268,700	1.8	149,278	1,209,727	1,060,449

Source: Authors' calculation according to SBRA data

The financial analysis found that the loss in the observed companies in 2014 was caused by inefficient management of current assets. For determining the extent to which financial expenditures are growing due to inefficient management of current assets, the average turnover coefficient at the sector level in 2014 was first identified. By establishing the ratio between current assets at the average turnover coefficient and actual working capital, an increase in their value has been identified due to inefficient management (Table 10). By far the highest increase in working capital due to inefficient management, in the amount of RSD 4,396,429 thousand, was registered with the company number 2.

The quantification of the consequences of inefficient management of current assets determined the amount of possible reduction in financial expenses. Although enterprise no. 1 is characterized by more efficient management of current assets in comparison to company no. 2, this enterprise recorded the highest possible decrease in financial expenses of RSD 585,717 thousand.

Table 11: Increase in financial expenses due to inefficient use of working capital, 2014

- in thousands RSD -

Enterprise	Financial expenses	Liabilities based on which interest is paid	Average interest rate	Possibility of reducing financial expenses
	1.	2.	3. (1./2.) x 100	4. (5.* x 3.) / 100
1	725,435	3,049,084	23.79	585,717
2	1,178,258	10,507,847	11.21	492,977
3	526,505	2,916,061	18.06	189,815
4	494,761	3,217,976	15.37	272,227
5	317,329	2,699.125	11.76	124,674

Source: Authors' calculation according to SBRA data
*Note: * Column no. 5 from Table 10*

In order to systematize all the negative impacts on the financial result, the reduction in operating revenues due to the deterioration in global parity, the reduction in contribution margin due to insufficient use of actual capacity and the increase in financial expenses due to inefficient management of current assets were taken into account. The cause of the loss was adequately identified in all enterprises with a negative impact on the financial result of more than 100%. The results of the analysis show that the loss was not adequately identified only in case of enterprise no. 5. Therefore, enterprise no. 5 was excluded from further analysis.

Table 12: Examination of the negative impact on the financial result, 2014

- in thousands RSD -

Enterprise	Reduction of operating revenues due to deterioration in global parity price	Reduction in contribution margin due to insufficient use of actual capacity	Increase in financial expenses due to inefficient use of working capital	Total negative impact on financial result	Loss of the current year	Negative impacts on the financial result in relation to loss (%)
	1.	2.	3.	4. (1. + 2. + 3.)	5.	6. (4./5.) x 100
1	151,576	360,529	585,717	1,097,822	669,980	164
2	965,611	381,957	492,977	1,840,545	1,842,292	100

3	59,556	330,339	189,815	579,710	435,166	133
4	125,499	313,471	272,227	711,198	466,905	152
5	700,779	0	124,674	825,453	937,147	88

Source: Authors' calculation according to SBRA data

Development potential of environmentally responsible medium-sized industrial enterprises is analysed through two alternatives. The first alternative involves an analysis of the possibility of increasing the volume of production and sales at the current global parity price. The second alternative implies an analysis of the possibility of shifting the global parity price in favour of sales prices at the current level of actual capacity utilization. For both alternatives, two aspects of development potential were analysed. The first aspect does not take into consideration the expenditure side correction, while the second aspect includes the correction of expenditure side for the established possible amount of reduction in financial expenses due to inefficient management of current assets. The analysis on the potential of environmentally responsible medium-sized industrial enterprises through these two alternatives, two aspects, requires the acceptance of the following assumptions:

- an increase in revenues, which could occur if there was no deterioration in global parity prices, is not taken into account because the analysis aims to determine the global parity price needed for the development of medium-sized industrial enterprises, and
- contribution margin is not adjusted to higher values, by the amount of the determined reduction due to insufficient use of actual capacity, because the analysis aims to determine the extent to which the use of actual capacity is necessary for the development of medium-sized industrial enterprises.

Table 13: Examination of the potential of environmentally responsible medium-sized industrial enterprises, 2014

- in thousands RSD -

No.	Enterprise	1	2	3	4
1.	Operating income	2,623,038	2,496,118	1,454,792	1,802,599
2.	Variable material expenditures	1,541,452	1,923,183	841,304	1,071,166
3.	Contribution margin	1,081,586	572,935	613,488	731,433
4.1.	Fixed expense	1,027,635	1,282,122	560,870	714,110
4.2.	Net financing costs (NFC)	723,931	1,133,105	487,784	484,228
4.3.	Reduction in NFC due to inefficient asset management	585,717	492,977	189,815	272,227
5.	Share of contribution margin in operating income (3/1) x 100 (%)	41	23	42	41
6.	The degree of utilization of actual capacity (AC) (%)	75	60	65	70
7.	Income at use of 100% AC (1/6)x100	3,497,384	4,160,197	2,238,142	2,575,141

No.	Enterprise	1	2	3	4
8.	Production and sales volume for achieving neutral result (NR) *WC ((4.1.+4.2.)/5)x100	4,247,859	10,522,470	2,486,722	2,953,274
8a.	Production and sales volume for achieving NR **WIC ((4.1.+(4.2.-4.3.))/5.)x100	2,827,391	8,374,707	2,036,606	2,282,378
9.	% of AC use for achieving NR with the current global parity price (GPP) WC (8/7)x100	121	253	111	115
9a.	% of AC use for achieving NR with the current GPP WIC (8a/7)x100	81	201	91	89
10.	% increase in the production and sales volume for achieving NR with the current GPP WC ((8-1)/1)x100	62	322	71	64
10a.	% increase in the production and sales volume for achieving NR with the current GPP WIC ((8a-1)/1)x100	8	236	40	27
11.	% change of GP for achieving NR with the current AC WC (((4.1.+4.2.)-3.)/1.)x100	26	74	30	26
11a.	% change of GP for achieving NR with the current AC WIC ((4.1.-(4.2.-4.3.)) -3.)/1.)x100	-7	3	-24	-13

Source: Authors' calculation according to SBRA data

*Note: *WC- without correction; **WIC - with correction*

The alternatives for improving the development potential of each environmentally responsible medium-sized industrial enterprise are as follows

- *Enterprise 1* – it can achieve a neutral financial result with the current global sales and purchasing parity prices by increasing the production and sales volume, which means using 121% of actual capacity if the expenditure side is not corrected, i.e. 81% if the expenditure side is corrected. In relation to the realized physical volume of production and sales, this alternative implies its 62% increase if the expenditure side is not corrected and 8% if the expenditure side is corrected. Neutral financial result for enterprise 1 can be achieved with the existing production and sales volume, provided that the global sales and purchase parity price, if the expenditure side is not corrected, is changed in favour of sales prices by 26%, i.e. if the expenditure side is corrected, changed in favour of purchasing prices by 7%.
- *Enterprise 2* – it can achieve a neutral financial result with the current global sales and purchasing parity prices by increasing the production and sales volume, which means using 253% of actual capacity if the expenditure side is not corrected, i.e. 201% if the expenditure side is

corrected. In relation to the realized physical volume of production and sales, this alternative implies its 322% increase if the expenditure side is not corrected and 236% if the expenditure side is corrected. Neutral financial result for enterprise 2 can be achieved with the existing production and sales volume, provided that the global sales and purchase parity price, if the expenditure side is not corrected, is changed in favour of purchasing prices by 74%, i.e. if the expenditure side is corrected, changed in favour of sales prices by 3%.

- *Enterprise 3* – it can achieve a neutral financial result with the current global sales and purchasing parity prices by increasing the production and sales volume, which means using 111% of actual capacity if the expenditure side is not corrected, i.e. 91% if the expenditure side is corrected. In relation to the realized physical volume of production and sales, this alternative implies its 71% increase if the expenditure side is not corrected and 40% if the expenditure side is corrected. Neutral financial result for enterprise 3 can be achieved with the existing production and sales volume, provided that the global sales and purchase parity price, if the expenditure side is not corrected, is changed in favour of sales prices by 30%, i.e. if the expenditure side is corrected, changed in favour of purchasing prices by 24%.
- *Enterprise 4* – it can achieve a neutral financial result with the current global sales and purchasing parity prices by increasing the production and sales volume, which means using 115% of actual capacity if the expenditure side is not corrected, i.e. 89% if the expenditure side is corrected. In relation to the realized physical volume of production and sales, this alternative implies its 64% increase if the expenditure side is not corrected and 27% if the expenditure side is corrected. Neutral financial result for enterprise 4 can be achieved with the existing production and sales volume, provided that the global sales and purchase parity price, if the expenditure side is not corrected, is changed in favour of sales prices by 26%, i.e. if the expenditure side is corrected, changed in favour of purchasing prices by 13%.

An alternative that involves the use of actual capacity higher than 100% implies the realization of operating activities through the introduction of multiple work shifts. In order to improve profitability and strengthen their development potential, enterprises will decide on the alternative that can be realized at the moment or will choose the combination of individual elements of both alternatives. When it comes to determining the level of global parity price in case of using 100% of actual capacity, the elements of both alternatives are to be combined.

Table 14: Change in global parity price at 100% use of actual capacity, 2014

- in thousands RSD -

No.	Enterprise	1	2	3	4
1.	Operating income	2,623,038	2,496,118	1,454,792	1,802,599
2.	Variable expense	1,541,452	1,923,183	841,304	1,071,166
3.	Use of AC (%)	75	60	65	70
4.	Operating income at 100% AC (1. / 3.) x 100	3,497,384	4,160,197	2,238,142	2,575,141
5.	Variable expense at 100% AC (2./3.)x100	2,055,270	3,205,305	1,294,314	1,530,237
6.	Contribution margin at 100% AC (4.-5.)	1,442,114	954,892	943,827	1,044,905
7.	Fixed expense and net financing expenses without correction	1,751,566	2,415,227	1,048,654	1,198,338
7.1.	Fixed expense and net financing expenses with correction	1,165,849	1,922,250	858,839	926,111
8.	% change of GPP in favour of sales prices at 100% use of AC WC ((7.-6.)/4.)x100	8.85	35.10	4.68	5.96
8.1.	% change of GPP in favour of sales prices at 100% use of AC WIC ((7.1.-6.)/4.)x100	-7.90	23.25	-3.80	-4.61

Source: Authors' calculation according to SBRA data

In 2014, in order to leave the zone of loss, improve profitability and strengthen the development potential of environmentally responsible medium-sized industrial enterprises with the use of 100% actual capacity:

- *Enterprise 1* – should increase the sales price by 8.85%, if the expenditure side is not corrected, i.e. it can reduce the sales price by 7.90% if the expenditure side is corrected;
- *Enterprise 2* – should increase the sales price by 35.10%, if the expenditure side is not corrected, i.e. it should increase the sales price by 23.25% if the expenditure side is corrected;
- *Enterprise 3* – should increase the sales price by 4.68%, if the expenditure side is not corrected, i.e. it can reduce the sales price by 3.80% if the expenditure side is corrected;
- *Enterprise 4* – should increase the sales price by 5.96%, if the expenditure side is not corrected, i.e. it can reduce the sales price by 4.61% if the expenditure side is corrected.

4. CONCLUSION

The research realized the goal of determining the economic and financial power and assessing the development potential of environmentally responsible medium-

sized enterprises registered in the Republic of Serbia in sector C: Manufacturing. The results of the analysis show that medium-sized industrial enterprises in the period 2011-2015 were characterised by solvent operation and growth in payment capacity. In total capital, the share of borrowed sources of financing with a short-term maturity is dominant, while the operation activities of enterprises in all business years except in 2014 were estimated as profitable.

Uneconomic operation within the financial activity, conditionally acceptable position on the sale and purchase market and the occurrence of loss above capital necessitated the need to analyse the possibility of improving profitability and strengthening the development potential of medium-sized industrial enterprises. Analysis of the possibilities for improving profitability and strengthening of development potential was carried out using data disclosed in individual financial statements of the least profitable environmentally responsible enterprises in 2014.

The results of the analysis show that the unprofitable operation of environmentally responsible medium-sized industrial enterprises in 2014 is a consequence of the decrease in operating income due to the deterioration of the global sales and purchase parity prices. Furthermore, unprofitable operation appears as a consequence of insufficient use of actual capacity, which led to a reduction in contribution margin and inefficient management of current assets that caused the growth in financial expenses.

In order to improve profitability and strengthen the development potential of environmentally responsible medium-sized industrial enterprises in the Republic of Serbia, two alternatives were proposed. The first alternative relates to the analysis of the possibility of increasing the use of actual capacity at the existing global parity price, while the second alternative implies an analysis of the possibility of changing the global parity price to the benefit of the sales prices at the current rate of the actual capacity use. In addition, a possible solution for improving profitability and strengthening development potential is a combination of the elements of both alternatives, i.e. it was established how much the global parity price should be in case of using 100% of actual capacity.

The research results confirm the hypothesis according to which medium-sized enterprises registered in the sector C: Manufacturing can improve the economic sustainability of their environmentally responsible business operation by performing an adequate financial performance management. Furthermore, the results obtained by analysing the economic and financial power and development potential of medium-sized industrial enterprises open up the possibility of further

research that could address the assessment of effects of increasing their participation in key macroeconomic indicators.

ACKNOWLEDGMENT

This paper is a part of research projects: European integrations and social and economic changes in Serbian economy on the way to the EU (No. 47009), Challenges and prospects of structural changes in Serbia: Strategic directions for economic development and harmonization with EU requirements (No. 179015) and Modern biotechnological approach to solving problem of drought in agriculture of Serbia (No. 31005) financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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THE IMPACT OF STRENGTHENING AND HAMPERING INNOVATION FACTORS ON FIRM'S PERFORMANCE - A COMPARATIVE ANALYSIS OF EU AND NON-EU COUNTRIES

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Abstract: *This paper aims to compare the impact of strengthening and hampering innovation factors in innovative companies of EU and non-EU countries. Using data from a sample of 231 firms located in four non-EU countries and 197 firms located in EU countries, we empirically test six research hypotheses on the role of strengthening and hampering innovation factors in determining firm performance. Analysis results of the two subsamples show that different variables are significant predictors of performance for firms located in EU countries compared to those located in non-EU countries. Several hypotheses are refuted, contradicting previous research findings. Cost factors negatively affect performance for both EU and non-EU firms. While, market and knowledge factors have a strong negative effect on firm's performance of respectively non-EU and EU countries. Additionally, export orientation for firms in non-EU countries and cooperation with other enterprises or institutions for firms in EU countries have a positive effect on firm's performance. By identifying the effect of strengthening and hampering innovation factors, this study results have important implications for innovation policy and innovation management for both EU and non-EU countries.*

Keywords*: innovation, Hampering factors, Stregthening factors, firm, performance*

1. INTRODUCTION

Innovation has been a topic of interest for academics, governments and obviously, firms since a long time. The benefits of innovation are clear and widely investigated by researchers and practitioners. Innovation contributes to the national

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economic growth and it is a prominent source of sustainable competitive advantage (Romer 1985; Porter, 1990; Drew, 1997). Innovation has a positive impact on firm's performance (Han, Kim and Srivastava, 1998; Cainelli, Evangelista and Savona, 2003) and it is a fundamental aspect of competition (Baumol, 2002).

Lately, the topic of innovation has gained increasing importance in the context of globalization and intensification of competition between firms. Various scholars argue that besides organizational characteristics and managerial attitudes, the external environment has a significant impact on innovation and ultimately firm's performance (Porter, 1990). Damanpour (1996) argues that innovation is either a response to changes in the external environment or a pre-emptive action to influence the environment. D'Este, Iammarino, Savona and Tunzelmann, (2011) identified different factors hampering innovation, while other researchers underline the positive effect of collaborative networks (Hagedoorn 2002) and the export orientation of firms (Salmon and Shaver, 2005) on innovation and ultimately on firm performance.

Considering the importance of the innovation and the role of the external environment on the capacity of firms to innovate, our paper focuses on the effect of both strengthening and hampering innovation factors on firm's performance. In more detail, we focused on two strengthening factors of innovation - network collaboration (Hagedoorn 2002) and export orientation (Salmon and Shaver, 2005) and four hampering factors of innovation - market, technological, human resource lack of reasons to innovate (D'Este, Iammarino, Savona and Tunzelmann, 2011; Sipos, Bizoi and Ionescu, 2013).

The comparative approach used in this study points out the importance of the context and its relationship with firm's performance. As argued by Prahalad, (2012) emerging and developing market tend to be radically different from developed ones. Consequently, we can argue that strategies adopted by firms in the realm of innovation, and arguably not only, are different. In sum, the aim of this study is to compare the impact of strengthening and hampering innovation factors on firm's performance in EU and non-EU countries.

Our study contributes to the literature on innovation by increasing knowledge of the external factors effect on the performance of firms based in developing and developed economies. Furthermore, this study sheds some light into the role played by the context using firm's lens.

This paper is organized in five sections. Section 2 reviews the theoretical background and presents the hypotheses. Section 3 describes the analyses, data,

method used, and empirical model proposed by the authors. Section 4 discusses empirical research findings, and the paper ends with the discussion, conclusions, further research recommendations and study limitations.

2. THEORETICAL BACKGROUND

2.1. Innovation - a definition and typologies

Innovation is not a new phenomenon. A vast literature that tackles different patterns of innovation is already available. Schumpeter (1934), a pioneer in the economic analysis of innovation, described it as a new combination of existing resources. Drucker (1985) defined innovation as change that creates a new dimension of performance. Damanpour (1996) considers it as a means of changing an organization.

There are a large number of innovation typologies. Schumpeter (1934) argues that innovation can be break down into the following categories: new products, new methods of production, new sources of supply, exploration of new markets and new ways to organize a business. Other researchers like Zaltman et al. (1973) explore twenty types of innovation in the context of organization. Meeus and Edquist (2006) argue about four types of innovation applicable at service organizations - service innovation, process innovation, technological process innovation and administrative process innovation. Hamel (2006) distinguished two types of innovation: innovation in operational processes and innovation in management processes. Damanpour (1996) provides a longer definition of innovation which consists of new product or service, new process technology, new organization structure or administrative systems, or new plans or program pertaining to organization members.

2.2. The role of innovation strengthening factors on performance of firms

The network in which firms operate have a strong impact on their performance. Generally, the cooperation with the other institutions or other companies help firms scale up their profit through economies of scale, cost sharing, access to complementary technology, risk sharing and fast development. (Hagedoorn 2002; Bonteand and Keibach 2005; Faria, Lima and Santos 2010). On the other hand, exporting firms can easily absorb know-how and receive cutting edge technologies to adopt in their production process increasing their performance (Salmon and

Shaver, 2005). There is a positive association between firm's productivity and exporting. (Katsikeas and Leonidous, 1996; Wagner, 2007). Hence, we posit:

H1. The higher the cooperation on innovation activities between firms or institutions the higher the firm's performance.

H2. The more export oriented a firm is, the higher the firm's performance.

2.3. The role of innovation hampering factors on performance of firms

Certain problems are not effectively encountered until firms face them. Only when firms undertake investments leading to some type of innovation, the chances to face innovation barriers increase (Galia and Legros, 2004). Hence, it is important for innovative firms to be aware of the influence the barriers of innovation have in their profit and figure the best manner to effectively encounter them. As argued by Sipos, Bizoi and Ionesku (2013) the impact of these barriers or hampering factors is strongly and negatively correlated with firms' performance.

Factors that can hamper innovation: the lack of qualified personnel; the lack of information in technology; the lack of information on markets; the difficulty in finding cooperation partners; market dominated from established enterprises; uncertain demand for innovative good and service; no need to innovate due to prior innovation; no need to innovate due to no demand; the luck of funds within the enterprise or group; the luck of external financial sources; the high costs of innovation (Eurostat, 2014).

It is clear that firms need to invest on new ideas, new procedures and new products, but sometimes because of the complex of processes, cost of investment is quite high. Several studies conducted in European countries show that cost factors have a strong impact on innovative activities (Canepa and Stoneman, 2008). Savignac (2006) argues that the adoption of innovation is significantly related with the presence of financial constraints. Following this line of reasoning we advance the following hypothesis:

H3. The increase of cost factors which hamper innovation, lowers firm's performance.

Another factor that hampers innovation is the lack of human capital. The detrimental effect of lack of expertise and organizational skills on innovation performance in manufacturing-intensive sectors has been extensively confirmed by empirical research (Gort and Klepper, 1982). On the other hand, lack of skilled workers with competencies and knowledge is a strong barrier to firms in the service sector (Iammarino et al., 2009). In general, knowledge barriers can limit the

capacity to introduce a new product/service (ibid.). Spithoven et al. (2013) argues that SMEs, compared to large firms, are unable to fully benefit from innovation since they do not have the same in-house capabilities to assimilate the external knowledge. Hence, we advance the following:

H4. The increase of knowledge factors that hamper innovation lowers firm's performance.

Market factors such as to level of competition, the small size of the firm compared to its competitors, etc may impose severe constraints to firm's capacity to innovate and hinder its commitment to innovation activity (Iammarino et al., 2009). Market uncertainty such as ambiguity about the size of potential market for new products, the rate of diffusion of these products, industry standards, etc. innovation has proved to affect a consumer's acceptance towards innovation and ultimately the performance of firms (Hoeffler, 2003). Based on this evidence, we posit:

H5. The increase of market factors that hamper innovation lowers firm's performance.

Among the hampering factors that affect innovation is lack of reasons to innovate. Firms might operate in stable markets with few process and product innovation. While market uncertainty might be low the low appropriated rents can contribute negatively to the firm performance, Hence, we advance the following:

H6. The lack of reasons to innovate, lowers firm's performance.

3. METHODS AND PROCEDURES

3.1. Data

The sample consists of 428 innovative firms randomly selected using stratified random sampling method. The sample was randomly selected following the suggested and approved sample characteristics (50% production firms and 50% service companies and 15% micro, 35% small and 50% medium sizes) applied in similar research such as Community Innovation Survey (CIS). Sampling was broken down in three size related categories: micro, small and medium size.

Considering the comparative nature of our study the sample has been divided in two subsamples; the first included 231 firms located in four non-EU countries, namely Albania, Bosnia and Herzegovina, Montenegro and Serbia; the second includes 197 firms located in EU countries, namely Italy, Greece, Slovenia and Croatia.

Measurements: Details of the constructs, measurement and the operationalization of variables are provided in Appendix A and are discussed below.

Dependent variable

Business performance. Business performance measurement was assessed based on the average of five items, namely market share, revenues, profit, cash flow and costs reduction (Slater and Olson, 2000; Auh and Merlo 2012). Respondents were asked to rate their business performance compared to their most direct competitor (Auh and Merlo, 2012) taking into account only last three years. The five-item construct yielded a Cronbach Alpha of 0.876 (standardized Cronbach Alpha coefficients), follows thin accordance with the recommended criteria (Nunnally 1978).

Factors strengthening innovation

Cooperation. Co-operation in innovations in this study is viewed as an active participation with other enterprises or institutions in innovation activities during the three years, 2011, 2012 and 2013. Outsourced services have been excluded.

Export orientation. Export orientation was measured as firm's current number of active export countries for 2013.

Factors hampering innovation

Following D'Este, Iammarino, Savona, Tunzelmann (2011) and Șipoșa, Bîzoib, Ionescu, (2013) we operationalized the four factors that hamper innovation, namely cost, knowledge, market and lack of reasons, as follows:

Cost factors. The construct *cost factors* using three items: (1) lack of funds within the firm (2) lack of external financial resources and (3) high innovation (ibid.). The three-item construct yielded a Cronbach Alpha of 0.765.

Knowledge factors. The construct *knowledge factors* are operationalized using three items: lack of (1) qualified personnel, (2) information on technology (3) information on markets (ibid.). The three-item construct yielded a Cronbach Alpha of 0.769.

Market factors. The construct *knowledge factors* are operationalized using three items: (1) Difficulty in finding cooperation partners for innovation, (2) market dominated by established firms, (3) uncertain demand for innovative goods or services (ibid.). Cronbach Alpha is acceptable, at 0.710.

Lack of reasons to innovate. The construct *Lack of reasons to innovate* is operationalized using two items: (1) no need to innovate due to prior innovations by your enterprise (2) no need to innovate because of no demand for innovations (ibid.). The two-item construct yielded a Cronbach Alpha of 0.804.

Control variable

Firm size. Considering the unreliability of data related to firm's turnover we chose number of employees as a proxy to firm size. We operationalized size as a logarithm of number of employees. Firm size is an important factor affecting firm survival and performance (Porter, 1990). Innovative small firms appear to be more affected by hampering factors compared to medium and large firms (OECD, 2011).

3.2. Empirical model

We analyze the data using linear multivariate regression techniques. Equation (1) shows the general form of a multiple regression model with *k* predictors.

$$Y = b_0 + b_1 X_1 + b_2 X_2 + ... + b_k X_k \qquad (1)$$

Although our study is focused primarily on which predictors have an effect on our criterion variable, the comparing coefficients of the two sub-samples is a secondary objective of our analysis. Cohen (1983) suggests large samples and the inclusion of all k variables for each subsample, regardless of their significance, in order to compare the fitted regression coefficients. Our sample is quite large, and all variables have been included for each sub-sample.

3.3. Construct validity for the two business themes

We performed a factor analysis with varimax rotation to test the validity of our independent perceptual variables (see appendix B) (Tabachnick and Fiddell, 2007). The results for cost factors loaded reasonably high (.875, .860, .634). One item, namely *lack of qualified personnel* loaded into the knowledge factors, despite being originally accounted as an item which measures cost factors. *Difficulty in finding cooperation partners for innovation* originally accounted to measure knowledge factors loaded into market factors. The remaining three factors loaded high (.795, .809, .701). The three items for market factors (the two initial ones plus the one that loaded into this factor) loaded high also (.667, .785, .772). Finally, the factors for lack of reasons to innovate loaded high (.858, .875). Loadings are above the acceptable standard of 0.32 proposed by Tabachnick and Fiddell (2007). After the

validity tests, we concluded that the measures could be accepted to test the hypotheses.

4. RESULTS

Table 1 depicts the results related to our hypotheses, the result of the regressions for both subsample.

Table 1: Regression results for the two subsamples

Variables	Dependent variable - Performance					
	Non-EU coutries			EU countries		
	B	S.E.	Beta	B	S.E.	Beta
Constant	5.076***	.370		4.626***	.276	
Ln (size)	.090	.062	.096	.083†	.061	.103
Cooperation	.067	.155	0.27	.348*	.150	.153
Export orientation	.118**	.043	.171	.040	.033	.090
Cost factors	-.100*	.038	-.183	-.115***	.030	-.276
Knowledge factors	.057	.040	.107	-.090*	.040	-.184
Market factors	-.136**	.041	-.241	.032	.039	.067
Lack of reasons to innovate	.079	.062	.092	.051	.049	.075
R Square	0.173			0.181		
Adjusted R Square	0.147			0.150		
F	6.684***			5.958***		

*$0.01 \leq p < 0.05$, **$p < 0.01$, ***$p < 0.001$, †$0.05 \leq p < 0.1$

Hypothesis 1 is supported for the EU countries subsample only. Cooperation on innovation activities between firms or institutions has a significant and positive impact on firm's performance. While, for the non-EU subsample, despite being in the right direction, the relationship is not significant.

Hypothesis 2 is supported for the non-EU countries subsample only. Non-EU export-oriented firms appear to have a better performance compared to those who serve domestic markets only. While, there is no significant relationship between export orientation and performance for EU firms.

Hypothesis 3 is supported for both subsamples. Moreover, unstandardized betas are alike indicating a similar effect of cost factors on firm's performance. Cost factors negatively affect performance for both EU and non-EU firms.

Hypothesis 4 is supported for EU subsample only. Knowledge factors have a negative effect on performance of EU firms. The effect is not significant for the non-EU subsample. Even more, the sign is opposite to the one hypothesized.

Hypothesis 5 is supported for non-EU subsample only. Market factors have a strong negative impact on non-EU firm's performance. The relationship for EU firms is not significant.

Hypothesis 6 is rejected for both sub-samples. Contrary to the prediction, the parameter estimates for lack of reasons to innovate is not statistically significant.

There is a positive relationship between our control variable-firm size and performance for the EU subsample, although only at a relaxed level ($p<0.1$). Large EU firms appear to perform better than smaller one.

The R-square indicates that around 17% of the response variable variation is explained by the model for the non-EU subsample and more than 18% for the EU subsample. Considering that our independent variables can be used as covariates in future studies, our model appears to be very useful when analysing other explanatory factors of performance.

5. CONCLUSIONS, IMPLICATIONS, EXTENTIONS AND LIMITATIONS

Cooperation between business partners and institutions appear to be a crucial factor to foster innovation among EU firms but not among non-EU firms. This result is indicative of the different managerial attitudes among managers of EU-firms and the different nature of inter-firm relationship in EU countries compared to non-EU ones. Further research is necessary to explore the phenomena of cooperation and the role of networks.

Export orientation of firms in non-EU countries has a significant positive impact on performance. We can deduct that these firms are more inclined to adopt the latest innovation and practices. Policy makers of non-EU countries should find adequate instruments and mechanisms to support innovation among export-oriented firms and/or those aiming to target export markets.

As expected, cost factors have a significant negative impact on firm’s performance in non-EU countries and in EU countries. Innovation is costly, and many firms cannot afford it. Specific programmes targeting innovation should be implemented. More importantly, considering the weak funding of existing programmes, EU or state-owned agencies need to increase funding.

Knowledge factors have no significant effect on firm's performance in non-EU countries, while it has a significant and large effect (see beta (Keith's (2006)) for EU countries. In efficiency lead economies of the four non-EU countries, knowledge factors do not play an important role but in EU countries, which are expected to have a knowledge-oriented economy, it does. These results are noteworthy. A question for new research might be raised -What about the role of human capital as a source of competitiveness in the long run?

Market factors have a negative and significant impact on firm's performance in non-EU countries but not in EU countries. High level of market concentration and lack of competition might create a substantial obstacle for firm's competitiveness. Hence, improving market dynamics in non-EU countries is a priority.

Study limitations: One of the limitations of the study is related to the missing data for some of our variables. Although missing values are not high (around 5-15%), it appears that in one case (one item excluded from the analyses) data are not missing completely at random. In addition, our study does not include into the analyses different facets of innovation. Despite our effort to address the hampering and strengthening factor - performance link, we did not provide any evidence of the role that innovation itself plays in this relationship. Finally, more firm level, industry or strategy controls are needed to ensure that the captured effect can be attributed to the independent variables.

ACKNOWLEDGEMENTS

This research was co-financed by IPA Adriatic Cross-Border Cooperation 2007-2013programmed, through PACINNO project (Platform for Trans-Academic Cooperation in Innovation). The authors gratefully acknowledge the financial support from the European Union. We would like to thank all project partners for their contribution.

APPENDIX A: DETAILS OF CONSTRUCTS AND MEASURES

Variable		Number of items	Measurement
Dependent variable			
Performance	a) Market share compared to the most direct competitor b) Revenues compared to the most direct competitor c) Profit compared to the most direct competitor d) Cash flow compared to the most direct competitor e) Decrease costs compared to the most direct competitor	5	7-points scale (1 = much worse, 4 = equal, 7= much better)
Independent variables			
Cooperation	Active participation with other enterprises or institutions on innovation activities	1	*Dummy*, 1= cooperation in the last three years, 0 = no cooperation in the last three years
Export orientation	Current number of active export countries for 2013.	1	Continues (ratio variable) with zero meaning - no export.
Cost factors	a) Lack of funds within your enterprise or group b) Lack of finance from sources outside your enterprise c) Innovation costs too high	3	Ratio variable (4-points scale (0-factor not experienced, 1 = low, 2 = medium, 3 = high)
Knowledge factors	a) Lack of qualified personnel b) Lack of information on technology c) Lack of information on markets	3	Ratio variable (4-points scale (0-factor not experienced, 1 = low, 2 = medium, 3 = high)
Market factors	a) Difficulty in finding cooperation partners for innovation b) Market dominated by established enterprises	3	Ratio variable (4-points scale (0-factor not experienced, 1 = low, 2 = medium, 3 = high)

	c) Uncertain demand for innovative goods or services		
Lack of reasons to innovate	a) No need due to prior innovations by your enterprise b) No need because of no demand for innovations	2	Ratio variable (4-points scale (0-factor not experienced, 1 = low, 2 = medium, 3 = high)
Control variable			
Firm size	Number of employees	1	Logarithem of number of employees

APPENDIX B: FACTOR ANALYSIS WITH VARIMAX ROTATION

	Factor*			
Items of four constructs	F1	F2	F4	F4
Lack of funds within your enterprise or group	.145	**.875**	.056	.107
Lack of finance from sources outside your enterprise	.046	**.860**	.136	.100
Innovation costs too high	.200	**.634**	.346	.046
Lack of qualified personnel	**.795**	.145	.068	.147
Lack of information on technology	**.809**	.089	.227	.210
Lack of information on markets	**.701**	.137	.338	.182
Difficulty in finding cooperation partners for innovation	.357	.197	**.667**	-.022
Market dominated by established enterprises	.103	.134	**.785**	.104
Uncertain demand for innovative goods or services	.166	.131	**.772**	.252
No need due to prior innovations by your enterprise	.191	.105	.180	**.858**
No need because of no demand for innovations	.223	.110	.089	**.875**
Percentage variance explained	39.271	13.311	10.414	8.405

* Underlying dimensions as two factors: F1= cost factors, F2 = knowledge factors, F3 = market factors, F4 = lack of reason to innovate factors.

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Part II

The Green Growth and the Environment

THE ROLE OF ECOLOGICAL TAXES IN SUSTAINABLE DEVELOPMENT AND SUSTAINABLE ECONOMY

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Abstract: *The role of a state is of key significance for implementation of sustainable development. It collects funds that will enable realization of the concept of sustainable development by means of various instruments. The most common instrument for collection of funds is ecological taxes. This paper indicates the significance, elements, advantages and disadvantages of ecological (green) taxes and it describes the emergence of this fiscal instrument that required a tax reform. The concept of negative external effects is also explained in this paper, as well as the ways of finding a solution for this phenomenon. Arthur Pigou, a „father of ecological taxes", recommends internalization of external effects.*

Keywords*: ecological (green) taxes, sustainable development, sustainable economy, fiscal revenue*

1. INTRODUCTION

In addition to clear strategy, strong will and commitment, significant funds are necessary in order to realize the concept of sustainable development. All that is "green", whether technology, machines, products or services, is usually more expensive as ecologically friendly production implies higher costs. The state wants to collect these funds in some way, whether from manufacturers or from customers.

Regardless the type of tax, it implies payment to the state that is not followed by any counter service and that is not voluntary. This kind of financial transfers is paid to the state by tax payers who belong to a certain tax administration. The aim of introducing a tax is state budget and local government financing. This is the most important source and way of collection of money by the state, as it could not function without this fiscal revenue. From this revenue, the state finances common needs and public wealth (defense, justice, education, culture, health care, infrastructure etc.). Essentially, fiscal revenues that are collected in this way are

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used for payment of various expenditures in accordance with economic and social goals of the state. The character of a tax is determined by functioning of the tax rate. The tax rate can be (Stiglitz, 2004, 457-579):

1. Proportional (tax rate does not change if the income changes)
2. Progressive (tax rate follows the income growth)
3. Regressive (tax rate is reduced by the income growth).

The aim of ecological taxes is collection of funds for the state budget as a result of non-ecological behavior of the manufacturer that caused environmental degradation or for goods whose usage causes the so-called "negative external effects". Ecological taxes are especially significant. Not only do they provide the state income, but they also affect the connection of social and private benefit, which results in improvement of economic efficiency and achievement of sustainable economy (Musgrave, Musgrave, 1989, 7-9).

There is no uniform definition of ecological taxes. International institutions, such as OECD and European Commission, consider this type of tax from the point of view of the tax base. In this respect, ecological tax is each tax whose tax base is expressed in physical amounts of substance or some process that cause negative externalities (Petrović, 2016, 97-109). Although there is no uniform definition, it is possible to determine which tax is ecological based on its concrete usage. The revenues collected by the state on the basis of this tax should be directed to environmental protection or financing of projects that are directly connected with improvement of environmental quality or protection.

In addition to ecological taxes, there are also other forms of environmental protection where the role of the state is very important. These taxes could not even be introduced without a systematized and organized approach. The role of the state is to provide equal conditions for life and work to population and future generations, in accordance with the definition of sustainable development itself. By signing, and more importantly, respecting the signed conventions, agendas and strategies, as well as by adopting and applying the national strategy for sustainable development and the laws originating from it, the state shows that it respects the principles of sustainability (Munitlak Ivanović et al, 2013). In modern jurisdictions, the right on preserved environment is realized by combining or applying one of the following instruments:

1. Ecological penalties and taxes;
2. Subsidies for manufacturers in order to reduce pollution;
3. Transferable licenses for pollution and trading with this right;
4. State regulations.

The above mentioned economic instruments have their specificities, characteristics, various results for reallocation of resources and different calculation of ecological costs. Because of this, each of the above mentioned instruments has a different redistributive effect.

2. THE EMERGENCE OF ECOLOGICAL TAXES

The term "external effects" or "externalities" was used for the first time by the welfare economics theoretician, Arthur Pigou, who also set basic standards of the theory of externalities. As a welfare economics theoretician, Pigou advocated the introduction of a tax instrument for preservation of the environment since 1912 (Pigou, 1918). In his capital work "Wealth and Welfare" Pigou dealt with the issues of external effects, setting a basis for standards of the theory of externalities. At the same time, Pigou suggested market prices that included the cost incurred by environmental pollution (in addition to private cost). He called this system of calculation and understanding of costs "internalization of external effects" (Filipović, 2004).

Some authors, like Meade (1955), Geoffrey, Buchnan (1980) and Pearce (1991), joined this idea of understanding of costs and ecological tax. These authors advocate the attitude that ecological tax could correct market imperfection and limitation as a result of the external action. Geoffrey, Buchnan (1980) determined the strength of tax introduction. A decade later, Pearce opened this issue again, dealing with the role of tax on CO_2 (Piljan et al, 2017). In this way, the sense of introducing ecological taxes was explained: bearing the consequences for environmental pollution resulting from economic activities (production or consumption).

Stiglitz (2004) points out that introduction of penalties for pollution and pollution taxes bring a double dividend. The double dividend is reflected in the following: fiscal revenues increase due to collected penalties and taxes and the state can reduce other taxes (capital taxes that disturb savings and labour taxes that disturb work). Another significant characteristic of these taxes and penalties is that their introduction causes the increase of ecologically acceptable production.

3. ECOLOGICAL TAXATION ARGUMENTS

No economic or any other instrument is perfect. A special problem is reflected in the economic-ecological relationship. The traditional way of production involves the need for more raw materials and more (mostly) non-renewable energy for a higher volume of production. According to Vojinović (2017) "Renewable energy

sources are energy sources that come from nature and can be renewed. Today it is increasingly used because of its harmlessness to the environment".

Restrictions on environmental taxes are diverse and can affect various business entities. Ecological tax can have a regressive effect, since this kind of tax is the most threatening to the population with lower income. This type of tax affects competitiveness. Different industries have been affected by this, because ecological tax is added to the prices of these products and services, thereby reducing competitiveness. Instead of paying taxes on the cause that led to the creation of the externality, the consequences of the actions that caused them are taxed, which is not the goal. The aim of the ecological tax is to improve the quality of the environment. When harmful effects arise from the activities of a large number of pollutants, the situation is even more complex, because it is not possible to determine the individual share of each actor in the emergence of the negative externality.

The economy of the new era has a tendency to become "green" with "green finance", "green banking", "green technologies", "smart homes" and the like. Dominant neoliberal economic practice has largely exhausted the possibilities for wider consideration of environmental problems. It is particularly necessary to take into account the problem of irreversibility of money capital, or its inability to convert to natural capital (Drašković, 2012).

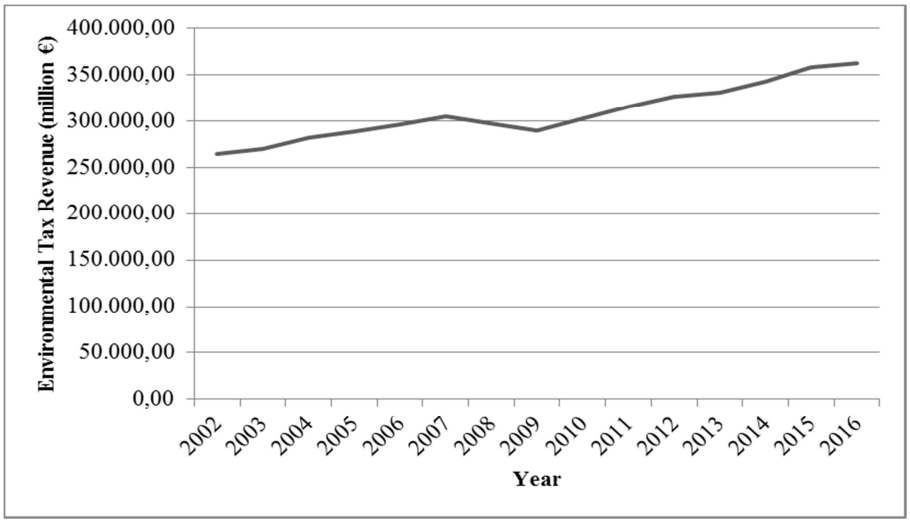
4. THE SIGNIFICANCE OF ECOLOGICAL TAXES

In 28 member states of the European Union (EU28) even 90% of public revenues are collected through taxes. Ecological taxes, as a relative type of taxes, required the reform of the tax system. Such reform was first done in Scandinavian countries. The aim of the tax system reform due to introduction of ecological taxes is to preserve the environment and implement the concept of sustainable development using fiscal instruments. In order to keep tax burden relatively unchanged, the application of ecological tax should be followed by reduction of the percent of burden through other tax forms at the same time. The taxes that should be reduced are those related to labour (earnings). In order to keep fiscal revenues unchanged, reduction of taxes related to earnings should be directed to activities that should be disturbed, as they result in negative external effects, i.e. they pollute the environment, or these activities should be modernized by introduction of clean technology ("green" technology), use of other raw materials and energy sources.

Total environmental tax revenues have an increasing trend in absolute numbers in the EU28, over the period 2002-2016 (Figure 1). The trend increases throughout

the whole period, except 2007-2009, where a decrease is evident, due to the consequences of the Global financial crisis.

Figure 1: Total environmental tax revenues in the EU28 (2002-2016)



Source: Eurostat, Total Environmental Tax Revenues, the EU28, available at: http://ec.europa.eu/eurostat/data/database

In addition to their significance as the state revenue, ecological taxes also have a special goal: reduction or neutralization of negative external effects. An economic activity that results in negative external effects has the difference between social costs (incurred in the environment) and private costs (manufacturer's costs) as a side effect.

In a part of the paper related to the history of ecological taxes, Arthur Pigou was mentioned as the first theoretician of this type of tax. He considered that the market is not automatically perfect and advocated the intervention of state in this field. Pigou thought that the role of the state is to ensure such market prices (of the activities and products that cause a negative externality) that will correspond to social cost. In this way, the society would be protected from the liabilities resulting from externalities, and the cost of pollution would be included in the price of the products or activities that caused this externality. Pigou called this type of calculation "internalization of external effects" (Munitlak Ivanović, Golušin, 2012, 83-98).

One way of internalization of external effects is the introduction of ecological taxes that burden the unit of the product caused by that product (Munitlak Ivanović et al,

2014, 377). In this way, taxes per unit of product and costs of pollution per unit of product are equalized. As a result of such calculation, production will be limited to what is necessary on the market, and, on the other hand, the company will be encouraged to produce "socially acceptable" level of pollution. A green tax rate that is defined adequately helps the company to realize real total costs incurred by economic activity. The task of "green" or ecological taxes is to calculate social costs in addition to private costs. Assuming that the amount of environmental damage is proportional to the production volume and that marginal costs of each unit of damage are always fixed, private and social costs will be equalized by introduction of a fixed fee in the form of ecological tax per unit of product (that is equal to marginal costs of pollution).

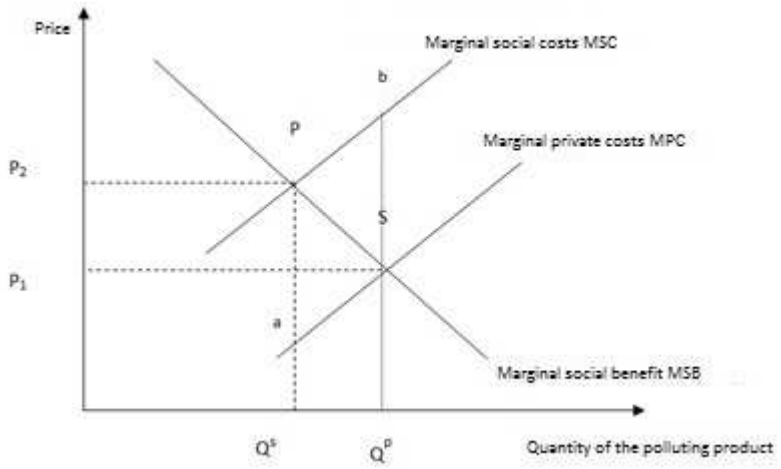
In this way, social costs incurred by the activities of the business entity will not be transferred to the society, but calculated in the price of products manufactured in such way.

Generally, the demand curve indicates marginal benefit of the manufacturer during the production of a marginal unit of product. The supply curve indicates marginal costs of production of the additional unit. In the intersection of two curves, the demand curve and supply curve respectively, limit benefit is identical to limit costs of production of the output. If production caused negative externalities, the supply curve does not show social costs, but costs borne by manufacturers. If pollution is increased due to production, the increase of production volume incurs real costs. These real costs are higher that the costs of production. Manufacturers do not calculate costs of pollution, unless they are forced to. This deviation between private and social costs leads to inadequate production volume and resource consumption. Therefore, it is important to observe a "wider picture" when estimating the benefit of increase of production and take into account external effects, i.e. total additional costs (private costs and social costs – pollution). In this case, when it comes to such calculation, market balance is achieved when socially efficient level of production is lower than privately optimal level of production.

Figure 2 shows the difference between social and private costs. The difference between the levels of optimal production is noticeable in this Figure. It depends on the fact whether the needs originating from market demand are taken into account or not. Qp takes into account only private limit costs unlike Qs which takes into account socially justified demand. The Figure 2 shows two equilibriums, private P and social S. The point of intersection of real social marginal benefit and private marginal costs determines the desired level of production of the company Qp. This level of production does not correspond to social standpoint, as the manufacturer makes external cost. However, manufacturer does not take into account the costs

borne by other entities. Point Qs is a level of production that corresponds to the society. At this point, marginal social benefit is equal to marginal social costs. For this reason, the position of point Qs is at lower level than the position of point Qp. The change of production volume between points Qp (market balance) and Qs (efficient production volume) will result in change of prices P1 and P2. Moving equilibriums from point S to point P results in losses of manufacturer and customer's surpluses. These surpluses are shown by the area of the triangle formed by connecting points a, S and P. Ecological engagement, that will result in general increase of welfare, is marked with the surface formed by two triangles that are obtained by connecting points aSP and bSP. However, in practice, companies often do not bear external costs. They are transferred to the whole society. This is why companies increase production over the limit of social justification of the level of production.

Figure 2: Calculation of social costs for estimation of optimal level of production



Source: Stiglitz, (2004:219); Prekajac, Josifidis, (1998: 293)

If external costs are not included in the price, negative consequences are the following (Tietenberg, 1998):

- Prices of products, caused by externalities, are unjustifiably low;
- Volume of production of such products is unnecessarily large, as environmental damage is not taken into account;
- Reduction of pollution intensity per unit of product is not incited by the market, as the costs are external;

- Such behavior does not encourage the development of circular economy which is based on waste reduction and its recycling. On the other hand, recycling is not done as there is no motive for that: emissions are discharged into the environment at low (or none) penalties;
- Such system of functioning of production and society, without serious commitment environmental protection, only increases pollution.

5. PRACTICAL CHALLENGES IN IMPLEMENTATION OF ECOLOGICAL (GREEN) TAXES

A gradual increase in the average rate of ecological taxes has been noticed since the mid-nineties of the twentieth century. However, the beginning of application of this new form of tax is characterized by the following challenges (Stevanović et al, 2003):

a) Influence on competitiveness. Ecological tax will probably influence the increase of production price, i.e selling price of products or services, and therefore it will have a negative effect on competitiveness, especially in relation to those manufacturers who do not calculate this type of tax in the price of products and services,
b) Regressive effect of ecological tax,
c) Uncertainty regarding positive fiscal effects of ecological tax,
d) Influence of subsidies that have distortion effect on ecology,
e) Inadequate harmonization and coordination of tax institutions and ecological institutions in the country,
f) Resistance of stakeholders, who don't understand the cause of environmental protection, to this new type of tax.

Practical obstacles that societies face during implementation of ecological taxes can be neutralized by procedures opposite to those used for determination of obstacles. The challenges that accompany implementation of ecological taxes can be solved in another way, systematically or by means of a tax reform that will have "green, sustainable or ecological" elements in the future. These elements can be (Drašković, 2012):

a) Introduction of a tax reform, i.e. implementation of ecological tax reform;
b) Definition of concepts: what is ecological tax, which is the basis of calculation, what is the level of tax rate and who is a tax payer;
c) Elimination of ecological subsidies having a distortion effect;
d) Continuous awareness of possible environmental issues, guaranteed by accepting of Aarhus Convention;

e) Continuous cooperation of the institutions responsible for environmental protection and tax administration;
f) Gradual introduction of ecological taxes.

6. CONCLUSION

Despite a gradual increase in ecological tax rate and therefore in fiscal revenue that is collected in this way, application of this tax is followed by certain challenges. Private costs and hence formed price and production volume, that do not take into account environmental damage, are never equal to social costs and socially justified production volume, which is lower, as a rule. However, as it can be seen clearly in the Figure 2, the prices have a reverse trend. Socially justified production volume is lower, but the selling price of the product is higher as costs of pollution are included in the price. Speaking of private costs, the opposite is the case – manufacturers, encouraged by a bigger profit, want as large volume of production as possible. However, as costs of pollution are not included in the price, the price of these non-ecological products, processes or economic activities is lower. This is why the role of the state is very important. By its clear attitude, regulations, penalties, tax reform etc., the state can influence the use of green and ecologically acceptable technology that would not incur costs of pollution.

Although this type of tax started to be considered at the beginning of the twentieth century, it took a long time to adjust the consciousness of theoreticians, as well as manufacturers and consumers to this way of thinking and even more time to implement ecological taxes in practice. The essential characteristic of these taxes is that their basic purpose is improvement of the quality of environmental protection and investment in this type of technology while eliminating ecological subsidies having the distortion effect at the same time.

ACKNOWLEDGMENT

This paper is a part of research projects numbers III47009 (European integrations and social and economic changes in Serbian economy on the way to the EU) and OI179015 (Challenges and prospects of structural changes in Serbia: Strategic directions for economic development and harmonization with EU requirements), financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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ECOLOGICAL FOOTPRINT TAX FOR THE DEVELOPMENT OF LOCAL AGRIBUSINESS

Miklós SOMAI, PhD*

Abstract: *The concept of ecological footprint tax (EFT) can be developed to cover the whole economy, but as a first experimental step, this paper suggests to introduce it in agriculture and food industry. The EFT is expected to mitigate two of the greatest anxieties of people in developed and semi-developed world, (rural) unemployment and climate change. The proposed arctan relation between the ecological footprint of products and the tax to be paid would result in a fairer allocation of tax charges (rich big-consumers having to pay much higher tax than low-polluter average people), assure sustainability for both the ecosystem and local economy (the tax charge itself depending first of all on the distance a product is to be shipped to the customer), and allow a healthier diet (local production, reaching the customers within much shorter time period than imports, not having to be stuffed with preservatives).*

Keywords*: Eco-tax, local economy, agriculture, food industry, employment*

1. INTRODUCTION

In this paper, I try to draw the outline of a new concept for product taxation whereby two of the main problems for millions of people in developed and semi-developed countries could, if not be solved, be at least mitigated: mass unemployment (especially in rural areas) and deterioration of the nature.

Mass unemployment is linked to ever-freer movement of goods and capital. So long as capital can flow freely, capital owners invest where they can obtain the best mix of quality and cost, i.e. in sites with optimal conditions (like China). As general trade facilitation since WW2 and the proliferation of bi- and multilateral, regional and global trade agreements have brought (especially industrial) tariffs down considerably, even ordinary low-price products can profitably be transported from great distance. The result is that although people as customers might gain a bit by acquiring goods cheaper from low-cost countries than from national manufacturers, however, as employees, they can easily (the less skilled they are, the more easily they can) lose their jobs, or at least their livelihood can become

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increasingly precarious. In addition, as more and more economic activities go abroad, more and more people fall out of the labor market which, in the end, reduces the internal market for the remaining activities. In order to counteract this tendency, governments support the development of international tourism, i.e. the "importation" of extra customers, which would compensate local industries for damages stemming from weak domestic demand.

With this, we arrive at the other main challenge of our times. The ever-increasing inflow of goods and humans (mass tourists) to "importing" countries from ever growing distance adds substantially to the already alarming rate of nature loss and global warming. As long as the transportation of goods and tourists is mostly carried out by ships, trucks, cars, buses and planes – i.e. by burning fossil fuels – international trade and tourism will justly be blamed for contributing to climate change and deterioration of nature.

The ecological footprint tax (EFT), the concept of which is introduced in this paper, is intended to help decision-makers to address two of today's main problems for millions of people: mass unemployment and the deterioration of nature, or, in other words, social and ecological crisis.

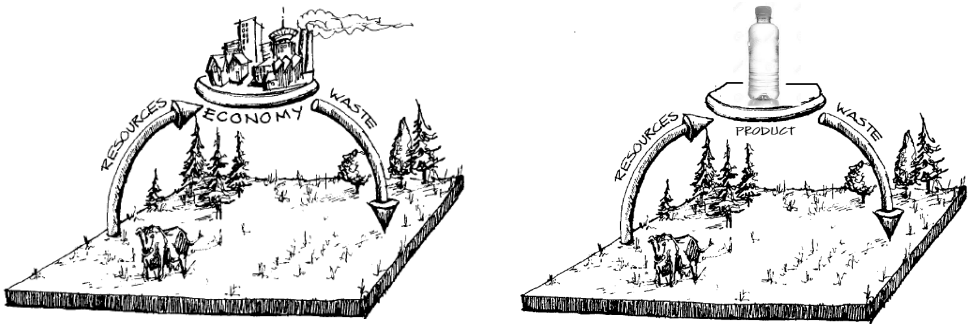
2. BASICS

My proposal for alleviating the above problems is based on the concept of ecological footprint, developed by two UBC scholars more than 20 years ago (Wackernagel & Rees, 1995). The essence of the concept is that it is possible to estimate how much land, i.e. how many so-called global hectares (gha) of ecologically productive land (dry land and waterbody) is needed for a defined population at a given technological level to support both the production of goods and services they consume and the assimilation of all their wastes sustainably (Rees & Wackernagel, 1996). Sustainability could, of course, be achieved if the population does not take more resources from nature than nature can re-generate. In brief: ecological footprint should not outstrip biocapacity.

On further considering the matter and adopting a narrower version of the original concept, i.e. by substituting ever smaller entities for the population of a whole city or country and eventually restraining the concept to individual products, it is possible, in theory, to estimate how many global hectares are needed for these individual products to be brought throughout their entire lifecycle, from invention to degradation or recycling (see Figure 1).

Figure 1:The narrowing of the concept of ecological footprint

The original concept **The narrowed concept**



Source: Own drawing based on Rees & Wackernagel, 1996 p.228

Based on the above, it becomes possible for the tax system to undergo a radical change whereby the amount of the tax paid on goods and services would be proportional to their need in nature, i.e. the ecological footprint their consumption involves. In other words, the greater the damage a given product causes in nature throughout its lifecycle, the bigger the tax burden on the customer should be. As time passes, this new type of tax could partially replace other taxes (e.g. VAT), although EU rules on minimum tax rates should be taken into account.

While logically the EFT could quickly become a general tax on goods and services, it seems worth, however, to test its efficacy in a particular sector of the economy. An important part of my proposal is to first introduce the EFT system for the agricultural and food products.

3. JUSTIFICATION

3.1. Important facts

Based on recent assessments, per capita ecological footprint exceeds global per capita biocapacity (1.7 gha) practically in all EU member states, with no data available for Malta and Luxemburg (WWF, 2014). Also, out of the components of ecological footprint (EF) carbon (i.e. the burning of fossil fuels) is, for virtually all these EU countries (with the notable exception of Denmark), the largest single one making up between 35 and 67 percent of their EF. Globally, the ratio of the carbon component has been on an upward trend throughout the period of 1961-2010, and rose from 36 to 53 percent of the EF. Moreover, it is rightfully assumed that much

of this increase can be attributed to the fact that growth in international transportation of both goods and people has gone beyond any reasonable limits.

Another important fact is that damage inflicted by man to nature tends to correlate with household income (Kerkhof et al., 2009), and this is also true for food consumption. Although the difference in size of the EF between income deciles is higher for activities like transport, travelling or entertainment than for the satisfaction of the first necessities, food consumption of the rich, too, fits the general trend in that it involves significantly higher greenhouse gases emissions than that of the poor. This is explained partly by the abundance, partly by the quality and composition of (i.e. high proportion of premium and/or imported products in) the food consumption patterns of the upper income deciles (Csutora et al., 2011).

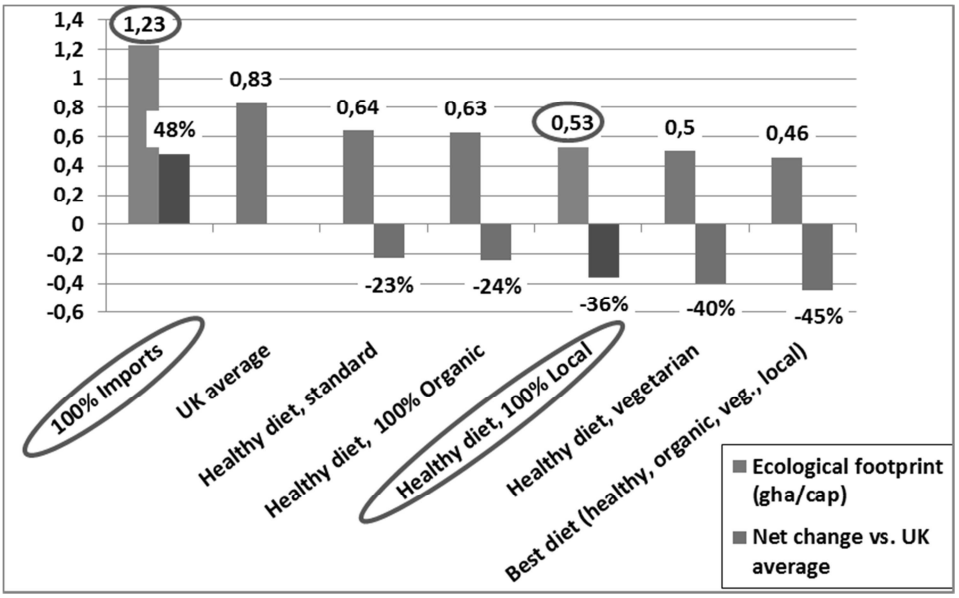
3.2. Why agri-food products?

A recurrent complaint of last years' conferences on agriculture and food industries has been that Hungarian (and other new member states') customers put the cheapest, often foreign-origin products into their shopping carts even if they could afford the more expensive, high quality, domestic ones. As another common feature of those seminars, speakers tended to blame customers alone and propose enhanced marketing strategy and additional efforts of persuasion to solve the problem. But, for the overwhelming majority of households this "solution" simply does not work, as they have no choice; as a result of the enduring austerity policy – remember, crisis in Hungary started in 2006 and for the ten years since then per capita real income has never recovered to pre-crisis level (KSH, 2017) – people save on almost anything they can.

One step closer to the solution bring us studies investigating consumption structure through linking human health to ecological footprint, i.e. appealing to people's sense of health- and eco-consciousness (Vetőné Mózner, 2014). Most of these studies conclude that even a minor change towards a healthier diet can significantly reduce a country's food footprint. One of the most interesting papers deals with the impact of different possible changes in British diet on UK food footprint (Frey & Barrett, 2007). It says that although any of the changes alone or in combination would reduce the impact considerably, the crucial difference resides in where the food comes from; by comparing the two extreme cases – the one when everything is imported to the other when all food are produced locally – we obtain a reduction of 0.7 gha in the footprint when local foods are preferred (see Figure 2).

From the British example, it would be easy to jump to a general conclusion that it is worth to buy domestic food not only for supporting local employment but also for limiting the damages caused by international trade in nature. But, it is still not enough good reason for the households to prefer local products.

Figure 2: How a diet can reduce the food footprint in the UK?



Source: Own compilation based on Frey & Barrett, 2007

It seems defensible to say that if an economic policy nurtures expectations concerning people's behavior as customers, it is not enough to appeal neither to their emotions (Buy domestic!), nor to their reason (Buy healthy and local!). If you want results, you must hit people's pockets. If the introduction of the ecological footprint tax (EFT) in agriculture and food industry brings prices for local food under those of imported one, it is certain that the majority of customers will shift towards national products.

Finally, let us mention one more reason why agri-food products seem to be an ideal field for testing the EFT. The point is that eating local foods, apart being good for the environment and supporting the local economy (farmers and other producers), has numerous potential benefits for the consumers, too. Flavor, savor, freshness, general quality, even nutrient content (with some reservations), all are better and higher in case of local foods, for they are picked at their peak of ripeness versus being harvested early in order to be shipped to and distributed on distant markets.

In addition, with the distance and time between food production and consumption shortened, it is obvious that fewer additives – flavor enhancers, humectants, preservatives, etc. all posing potential threat to human health – are needed in a short chain. Although food additives in humans do very rarely lead to adverse reaction, the latter is often linked with very serious chronic condition. The symptoms certain additives may cause range from simple hives, to asthma or even life-threatening anaphylactic shock (Pálfy, 2015).

4. METHODOLOGY AND RESULTS

As the huge number of foodstuffs makes it impossible to develop a sound methodology measuring perfectly the damage a product can, during its entire lifecycle, cause to nature; also with regard to the afore-mentioned economic, social and environmental goals and circumstances, we have to resort to considerable simplification. When determining the level of ecological footprint tax (EFT), we take into account:

- First, the geographical distance between the place of production and the place of consumption (i.e. the place of shopping);
- Second, whether the product is organic or conventional;
- Third, whether the product is transported by airplane or not.

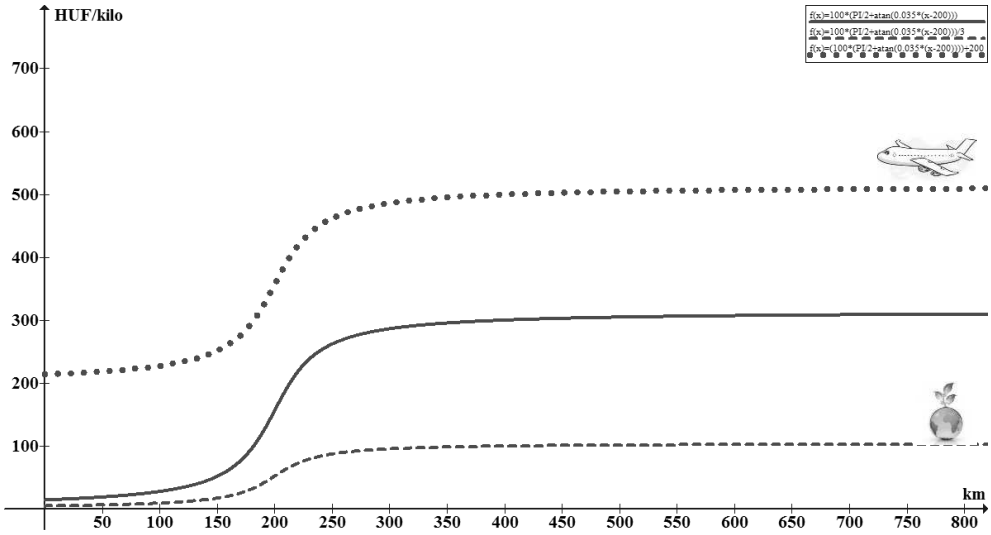
When justifying the choice of these three elements, it is important to understand that:

- First, they meet the goals of supporting local production (farmers and food industry), preserving the nature, promoting healthy diet, and even bringing in an element of justice through the 'punishment' of the rich by making them pay for the pollution they inflict to nature;
- Second, they show strong correlation with ecological footprint, as from the nearer possible a product is transported, and the cleaner its production technology is, the smaller the harm done to nature will be;
- And finally, it is relatively easy to identify them from the commercial documents accompanying the products. On the basis of these three elements, to determine the amount of the tax (EFT) does not require too much additional effort from traders and shopkeepers. With an appropriate formula, they will be able to easily and quickly determine the EFT from the accompanying documents.

As we have to deal with very different types of variables, we had better to apply different formulas on them. In the case of the geographical distance, it is worth to determine the radius of the area within which local producers should be prioritized.

Figure 3 and 4 show two different modalities to determine the EFT. In Figure 3, the continuous red line shows EFT levels of the simpler version, dealing with only one preferential group of producers. When drawing the line, the main consideration was to make sure farmers and industries located within 200 kilometers around Budapest (i.e. roughly between the Hungarian capital and the national borders) would benefit from the system. Accordingly, the tax burden is relatively low until 150-200 kilometers; at 200 kilometers, there is an inflexion point from which on the curve steeply climbs up to prohibitive heights; then beyond 250 kilometers, EFT practically drives out competition or at least makes products extremely expensive in Hungary's main consumption region.

Figure 3: Ecological footprint tax (EFT) on certain agri-food products with one preferential group of producers, based on the geographical distance between the area of production and consumption

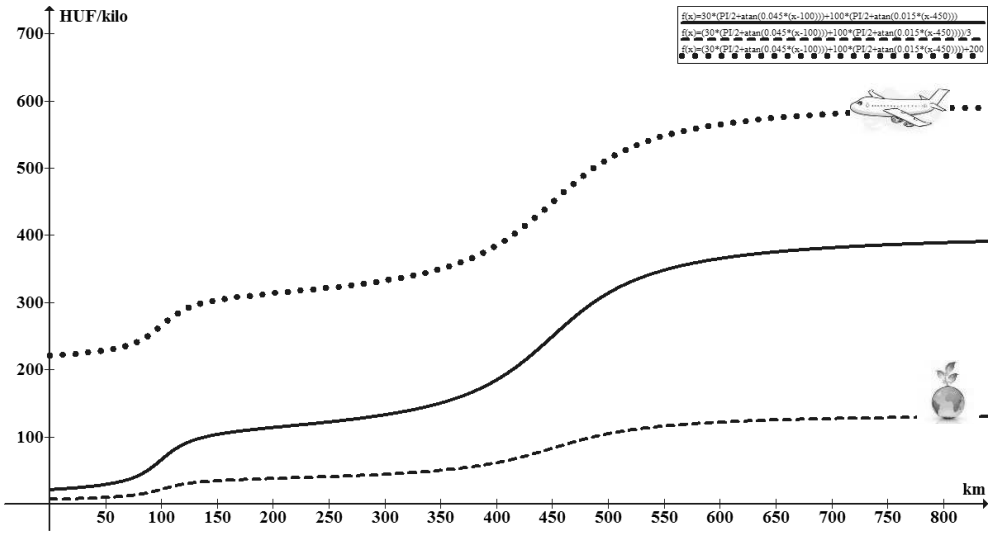


Notes: Dashed lines apply to organic products, dotted lines to air transported products.

A bit more complicated version of EFT is illustrated in Figure 2 by the continuous blue line. This curve has got three inflexion points, for our intention is now to support not only one but two groups of producers. The first beneficiary group (local producers) is located within a radius of 100 kilometers; for them the EFT is very low. At 100 kilometers, there is the first inflexion point from which on the curve ascends to slightly higher spheres, but without making trade impossible between the farthest regions of the country. Following a second (technical) inflexion point, the tax curve continues to climb slightly. Here is the second

beneficiary group (national producers), located between 100 and 450 kilometers from the point of consumption; for them the EFT is a bit higher than for local producers, but not prohibitive. At 450 kilometers, there is a third inflexion point from which on the curve goes up to prohibitive heights.

Figure 4: Ecological footprint tax (EFT) on certain agri-food products with two preferential groups of producers, based on the geographical distance between the area of production and consumption



Notes: Dashed lines apply to organic products, dotted lines to air transported products.

A much simpler formula is sufficient in the case of the second and third variable (i.e. the condition of being organic or not, and transported by airplane or not), since it is only about to provide a tax relief to those using environmental friendly technology, and penalize those doing the opposite. While conventional products would be taxed by EFT, for those organic the proposed formula is to divide EFT by a constant. In Figure 3 and 4, this constant is 3, and the corresponding values of this reduced tax are indicated by dashed lines. Hence, the EFT on organic products is, as a rule, one-third of that on conventional ones. By the same token, those products which are transported by airplane would be taxed with EFT plus a constant, let it be HUF 200 per kilo.

5. CONCLUSIONS

The proposed ecological footprint tax (EFT) is far from being a panacea. And, if we want to be precise even its name is misleading. Departing from the concept of

ecological footprint, I only tried to draft an incentive tool whereby locally produced foodstuffs (or those produced within a circle of a certain radius) become cheaper for local customers than those similar products (produced with the same technology) which are brought there for longer distances. In this way, we can kill several birds with only one stone.

First, preference given to the local production will boost local employment, thus help to retain people in rural areas. Second, the EFT, the size of which depends on the environmental friendliness of the production technology and the distance between production and consumption sites, will facilitate a gradual move from global to local economy, concerning both production and trade, and meaning less transport, less pollution and therefore less harm to nature. Third, the new tax conforms to the principle of social justice in that by pushing up prices of imported foodstuffs, it increases tax burden of the better off, who has a great share in the consumption of imported goods and thus a much bigger than average ecological footprint. Fourth, it is not to be forgotten that, compared to imported agri-food products, local ones do not need to contain so much additives which means a blessing for human health, hence, on the long run, also less costs to the national health service.

Finally, the introduction of the new tax does not necessarily have to lead to increased tax charges for the majority of the households. On the contrary, it should be combined with the reduction of other taxes (e.g. VAT) which would enable local foodstuffs to be not only more competitive against imports, but also more affordable for customers.

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INFORMATION, CONSUMERISM AND SUSTAINABLE FASHION

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Abstract: *Sustainable fashion is an approach to fashion that is socially and environmentally responsible, ethical regarding nature, the environment, people but also conscious regarding the profession. Although in the last few decades the concept of sustainable fashion has been the topic of interest for many researchers in Western capitalist countries, this concept is poorly represented and researched in Croatia. The objectives of the paper were to investigate to which extent articles regarding sustainable fashion have been represented in the electronic editions of the Croatian daily newspapers with national coverage in the last ten years, how this topic was elaborated in the media and to examine whether Croatian fashion designers (members of the Croatian Designers' Society – HDD, and the Croatian Association of Applied Artists - ULUPUH) are familiar with the concept of sustainable fashion, what they think about it, and whether media coverage of this subject affects their attitudes toward it.*

Keywords*: information, media, consumerism, sustainable fashion, circular economy*

1. INTRODUCTION

Florence Kelley, the first General Secretary of the National Consumers League said: "To live means to buy, to buy means to have power; to have power means to have responsibility."[1] Fashion is an industry that, more than other economic activities, exists on the requisite oriented towards constant buying of new clothing items that are currently on-trend. Fashion points out at specific position of fashion followers in the society. Although fashion is not a new phenomenon, since fashion historians found roots of fashion in the old civilizations, the fact is that fashion trends have never before changed as fast as they are changing now. Since the emergence of civilization, clothing has been a symbol of one's social status, it is

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[1] http://www.nclnet.org/history

still true today, but with the increase of the phenomenon of so-called fast[2] or cheap fashion, the availability of fashion items and brevity of clothes is no longer solely the privilege of social elites. At first glance, these changes may seem positive and point to the conclusion that we face greater availability of fashion in the broad strata of society. Thus, it is possible to conclude that the present increase of fast fashion indicates democratization of fashion. Unfortunately, reality is far from this idealized image offered by the advocates of consumer economy and globalization of the market. The trend of fast fashion implies impulsive, even unconscious purchase of cheap clothes, apace wearing of these clothes, short lifetime of clothes, faster disposal and rejection of clothes that is no longer on-trend. The price of fast fashion for consumers is low, but for people who often produce clothes in very poor conditions, as well for the already polluted and impoverished environment from which resources needed to produce such clothes are rapidly spent, this price is exceptionally high (Cline 2012). Cline claims that the fast fashion trend initiated by Zara, and that today globally known fast fashion companies like H&M, Forever21, Mango and Topshop just followed Zara. The trend of fast fashion is nowadays globally present and many consider it to be in itself an understandable phenomenon. However, this is a relatively new trend, globally present in the last twenty, thirty years (Cline 2012). In the same period, as opposed to the trend of fast fashion, the trend of sustainable fashion has also evolved. Unfortunately, this concept is far less known in the today's global society than the trend of fast fashion which is inextricably linked to the phenomenon of consumerism.

Sustainable fashion is a part of the philosophy of design that seeks to be socially responsible, different, and primarily aware of the environment, but aware of the profession as well[3]. Sustainability within "means that through the development and use of a thing or a process, there is no harm done to people or the planet, and that a thing or process, once put into action, can enhance the wellbeing of people who interact with it and the environment it has developed and used within" (Hethorn 2009, xviii). As synonyms to the term *sustainable fashion* in the literature terms such as *green* or *eco fashion*, *ethical* and *slow fashion* are also used. According to Sustainable Technology Education Project, eco or green fashion makes clothes that "take into account the environment, the health of consumers and the working conditions of people in the fashion industry". This means that eco fashion clothes are "made using organic raw materials, such as cotton grown without pesticides and silk made by worms fed on organic trees; don't involve the use of harmful chemicals and bleaches to color fabrics; are often made from recycled and reused

[2] the fast production of cheaper versions of clothes produced by fashion houses, often involving the exploitative use of cheap labor, mainly for sale at low cost in wealthier Western nations (https://www.collinsdictionary.com/submission/13271/fast+fashion)
[3] http://www.idop.hr/hr/dop-trendovi/dop-u-hrvatskoj/odrziva-moda/

textiles; are made to last, so that people keep them for longer; come from fair trade."[4] As far as ethical fashion is concerned the following features are usually perceived as ethical: "fair trade; employing women or certain ethnic groups; made without animal components; no animal testing; donating part of the profits to a charity; made in a developed country; handmade; fair wages paid; contributing to preserve traditions of an ethnic minority; revealing manufacturing locations and workforce policies; the product itself rises awareness or promotes an ideal or cause."[5] Slow fashion is described similarly. Slow fashion as an expression was first coined in a 2007 article written by Kate Fletcher. She compared the slow fashion industry with the slow food movement. As the slow food movement links pleasure and food with awareness and responsibility, slow fashion similarly "defends biodiversity" in fashion supply by "opposing the standardization of taste, defends the need for consumer information and protects cultural identities" tied to fashion.[6] Although some theoreticians find differences between these terms, the fact is that all terms point out sustainable ways of implementing sustainable development principles into fashion. Namely, sustainability is not possible if we do not consider the environmental, social and economic aspects of the fashion phenomenon. It can be concluded that all previously mentioned terms fit the context of a sustainable approach to fashion with smaller differences or gradations.

Sustainable fashion appeared in the late 80s or early 90s of the last century when fashion brands Patagonia and Esprit, concerned about the negative impact of fashion industry on the environment and human rights of textile workers in the so-called Third world countries, initiated the trend of sustainable access to fashion (Ribeiro Rosa 2016, 11). The situation, unfortunately, has drastically deteriorated in the last twenty years so it would be reasonable to expect that today sustainable fashion is a widely known and accepted concept. Unfortunately, it is not the case. The excessive rise in apparel production and significant decrease in clothes prices have led to an increase in the amount of clothes purchased per capita. This increase effected a rise in the amount of waste textiles that becomes garbage and thus has a very negative impact on the environment. In the UK the consumption of fashion (the amount of clothes purchased per capita) increased by 37% between 2001 and 2005 (Allwood et al. 2006). In Sweden the amount of clothes and home textiles released on the market rose by 40% between the years 2000 and 2009 (Carlsson et al. 2011 in Tojo et al. 2012). The amount of waste textiles is also an environmental problem in Croatia. According to the Annual Report of the Croatian Environmental Protection Agency for 2013, almost 4% (3.71%) of mixed municipal waste was waste textile and footwear. Every citizen of Croatia annually produces about 12

[4] https://greenstyle.wordpress.com/2006/07/28/green-fashion-definition/
[5] https://fashionhedge.com/2014/12/29/ethical-sustainable-fashion-difference/
[6] https://fashionhedge.com/what-is-ethical-fashion/

kilograms of waste textile and footwear[7]. The reduction of the negative impact of clothes production on the environment can be achieved by establishing a whole series of sustainable measures. Niinimäki argues that the environmental impact of garments can be decreased during: fiber production, finishing, dyeing and printing processes; global logistics during manufacturing and sales; the use and the maintenance of product disposal. Unfortunately, current design and manufacturing systems as well as economic models lead to unsustainable fashion consumption (Niinimäki 2013, 13). Efficient mass apparel production in lower cost countries has brought to the drastic fall in garment prices. Low product prices lead consumers to impulse purchases and unsustainable consumption behavior: overconsumption, a very short use time of products and premature disposal of the product (Niinimäki 2011). The cause of the problem according to many sustainable fashion theoreticians is consumerism, overwhelming aspirations to possess and buy things, an idea that one's happiness depends on the consumption of goods and services, or possession of material goods. Nevertheless, it is necessary to emphasize that there are differences in consumer behavior and, accordingly, neither consumerism can be viewed unilaterally. Lofman (1991), Holbrook and Hirschman (1982) differentiate instrumental consumption from experiential consumption, which does not serve to satisfy existential, but hedonistic, "leisure activities, sensory pleasures, daydreams, esthetic enjoyment, and emotional responses." Holbrook and Hirshman emphasize: "Consumption has begun to be seen as involving a steady flow of fantasies, feelings, and fun encompassed by what we call the "experiential view." This experiential perspective is phenomenological in spirit and regards consumption as a primarily subjective state of consciousness with a variety of symbolic meanings, hedonic responses, and esthetic criteria" (1982, 132). This is precisely the type of consumers' behavior that relies on the trend of fast fashion.

Although many theoreticians see the solution to the problem in the concept of sustainable fashion, some theoreticians such as Hoskins (2015) think that the problem is much deeper than environmental and that the negative consequences of unethical fashion can only be solved by changing the social and economic system, or by abolishing capitalism (Hoskins 2015). All main features of capitalism are present in the fashion industry: the impetus for profit and the consequent exploitation, power deriving from the possession of social resources for production and the very real need to overcome the insecure system in which we live. Namely, Hoskins in her book *Stitched Up: the Anti-Capitalist Book of Fashion* carefully sorts out various problems associated with the problem of hyper-consumerism in the fashion industry: the concentration of ownership of these industries in the hands of a small capitalist elite; the immorality and concentration of ownership of fashion

[7] http://www.mzoip.hr/hr/ministarstvo/vijesti/otpadni-tekstil-i-obuca-sakupljat-ce-se-u-trgovinama.html

media; fostering rampant consumerism; exploitation of the labor force in the so-called Third world countries; degradation of the environment; the imposition of anorexic standards of feminine beauty; and racism in the fashion industry. She considers that the answer to all these problems is not in the reformation of the fashion industry in the direction of sustainability, but in the revolution, the change of the capitalist system itself. Hoskins claims that the whole fashion industry, high end, as well as fast fashion, is a very powerful and highly influential business, dominated by billionaires who are using consumers' weaknesses such as uncertainty and self-dissatisfaction for the imposition of an illusion that happiness is easily accessible through the purchase of clothes. The fashion industry uses clothing advertisements as an instrument that drives consumers to escape from reality, in advertising they create the perception that wearing these clothes will transfer them into a life of wealth and luxury that most people want. Very important question in maintaining the influence and power of the fashion industry is control over information. The control of information enables manipulation of consumers therefore, the question of media sources is important - who is authorized to speak or say something about social events, how it is implemented and who approves it. The question is whose voices and views are structured and shaped by the news discourse (Cottle 2009, 5).. Hoskins claims that the main purpose of fashion media is to serve as a communication tool to the rest of the industry, that media have a major influence in determining what is fashion, and that studies show a direct link between advertising and exclusion of certain issues from the journals (2015, 33-37).

Western professional and scientific literature[8] elaborates this topic well, but in Croatian professional and scientific literature it is poorly explored and even represented. Specifically, in 2015 in Croatia a translation of the previously mentioned book of Tansy Hoskins was published. In the beginning of 2017 a scientific paper named "About the controversies regarding ethical consumption from social debris" written by the group of authors was published: Ivana Brstilo, Ines Krešić and Karla Vučković. This article explores the problem of ethical controversies associated with the fashion industry. These works are the only two scientific or professional papers on the subject of sustainable or ethical aspects of the fashion industry that have been published in Croatia. The existence of professional and scientific literature and the implementation of research on this topic are the key to informing the targeted public such as fashion designers. Consequently, the topic of this research is sustainable fashion in Croatia. The problems of research were: (1) the low representation of the topic of sustainable

[8] A whole range of books, as well as professional and scientific articles on the topic of sustainable fashion have been published. Namely, when Google scholar is researched with entry sustainable fashion, almost a million links are found as a result.

fashion in Croatian newspapers with national coverage, and (2) the lack of information regarding concept of sustainable fashion amongst Croatian fashion designers. The objectives of this paper were: (1) to investigate to what extent articles regarding sustainable fashion were represented in the electronic editions of Croatian daily newspapers with national coverage and how this topic was elaborated; (2) to examine whether Croatian fashion designers are familiar with the concept of sustainable fashion, what they think about this concept, and (3) whether media coverage of this subject affects their attitudes. Initial hypotheses were: (1) Croatian media publish texts on sustainable fashion to a small extent; (2) Texts are not published in serious sections (the economy or politics), but superficially in life style sections; (3) Croatian designers are not well acquainted with the concept of sustainable fashion, and those who are have reduced this concept to the usage of organic materials; and (4) the media processing of this topic affects the (dis)interest of designers, because no necessary public pressure is imposed on designers.

Jorge Majfud (2009), a Uruguayan writer, in his article “The Pandemic of Consumerism” warned that in today’s society development is confused with consumerism, and he concludes that "trying to reduce environmental pollution without reducing consumerism is like combating drug trafficking without reducing drug addiction" (2009, 87). Inspired by this Majfud’s thought, the idea behind this article is to draw attention of the targeted public, primarily fashion designers, to the phenomenon of sustainable fashion because they are in the first line of implementation of the necessary changes that this concept can bring about. The struggle with consumers’ fashion addiction begins with them.

2. METHODOLOGY

Quantitative and qualitative methods were used in the research. Specifically, quantitative content analysis of selected Croatian electronic media regarding sustainable fashion and qualitative method of an open question questionnaire was applied to explore the views of Croatian designers regarding sustainable fashion. Media content research was conducted on the electronic extensions of daily newspapers with national coverage (*Jutarnji list, Slobodna Dalmacija, Večernji list, 24 sata, Novi list*). The reason why precisely these media were investigated lies in their general informative character and national significance. This allowed a comparison between the context and importance of information regarding sustainable fashion. In the analysis of the media the following aspects were researched: (1) the number of articles in each publication, (2) the length of the texts, (3) the authors of the texts, (4) the presence of key words (5) the value orientation of articles regarding the topic of sustainable fashion, (6) the media context of the articles (the sections in which they were published) and the manner

in which the topic was processed and (7) the promoted values. The research covered the period from January 2009 to April 2017. The aim was to investigate the media presence of sustainable fashion in a ten-year period, however, in the period before January 2009 articles that contained the following keywords: sustainable fashion, eco fashion, green fashion, slow fashion, circular fashion, or ethical fashion were not found. Research regarding the attitudes of fashion designers about sustainable fashion was carried out by the qualitative method of an open question questionnaire in the period from 8th to 24th October 2017. The research included members of the Croatian Designers' Society (HDD) and the Croatian Association of Applied Artists ULUPUH (ULUPUH). Four examined designers are members of both societies. All examined designers make a living in fashion and are recognized in Croatia as artists.

3. RESULTS WITH DISCUSSION

Following keywords were found in the analyzed articles:

1. sustainable fashion; slow fashion; circular fashion; eco fashion; ethical fashion
2. circular economy; ethical production; consumerism; hyper production
3. sustainable materials; recycled clothes; recycled polyester; organic silk and cotton; new fabrics; plastic bags; redesigned clothes; natural cotton
4. environmental protection; eco-friendly
5. responsible behavior; fair business; fair trade; eco philosophy; humanitarian fashion show.

The first group of words refers to the name of the concept; the second one is linked to the context of economy; the third group refers to the type of fabrics and materials for production of clothes; in the fourth group words related to the environment were detected; and the last group is linked with the ethical context. The presence of these keywords may, at first glance, suggest a more serious, professional and profound approach to the subject of sustainable fashion from a variety of points of view. Unfortunately, the presence of these complex keywords is the result of an analysis of four articles reporting on a political party campaign by which the concept of circular economy in fashion was promoted.

Table 1: Number of articles in each media / period in which articles were published

Media / Owner	Number of articles	Dates of issue / Period
Jutarnji list / Gloria (supplement of Jutarnji list) HANZA media /ex EPH	6 total 2 Jutarnji list 4 Gloria	03.07.2015 13.04.2016 10.05.2016 29.11.2016 21.02.2017 07.04.2017 July 2015 - April 2017
Slobodna Dalmacija HANZA media /ex EPH	6 total	27.11.2012 03.07.2015 04.08.2015 18.03.2016 14.06.2016 29.11.2016 November 2012 - November 2016
Večernji list / DIVA (supplement of Večernji list) Styria	9 total 6 Večernji list 3 Diva	08.01.2009 01.09.2010. 18.08.2012 09.01.2014 22.05.2014 07.06.2015 22.07.2016 04.09.2016 07.02.2017 January 2009 - February 2017.
24 sata / Miss 7 (supplement of 24 sata) Styria	6 total 6 Miss7	10.05.2012 22.01.2013 18.09.2012 16.03.2016 02.03.2017 22.04.2017 May 2012 - April 2017
Novi list J&T fond	4 total	24.01.2014 05.07.2015 17.05.2016 05.11.2016 January 2014 - November 2016
TOTAL:	31	January 2009 - April 2017

Source: own research, October 2017

In Table 1. is the list of analyzed media, the number of articles published in each media, and the period in which the articles were published. The total number of analyzed articles is 31, the oldest article was published in January 2009, and the newest one in April this year. The largest number of articles was published in *Večernji list*, nine of them, and the smallest number in *Novi list*, four of them. *Novi list* is the only surveyed daily newspaper that is not owned by media corporations

Styria or Hanza Media. The search of articles was done through Google platform and typing keyword variations (sustainable fashion, green fashion, eco fashion, slow fashion, circular fashion) plus the name of the media. Given the fact that research covered a large period it can be concluded that publication of 31 articles on this topic points to a lack of interest of the media on the topic of sustainable fashion. From the previous table it is also apparent that the owners of four out of five researched media are two corporations: Styria and Hanza Media. This fact points to a conclusion that the concentration of media power in Croatia is in the hands of a small number of owners. A small number of owners over media allows the easiest control over information.

Table 2: Length of articles in number of words and authors

Media / Owner	**Length of the texts in words**	**Authors of the texts**
Jutarnji list / Gloria HANZA media /ex EPH	399, 572, 371, 176, 294, 203 Total: 2015 Average: 336	Hina; Jutarnji.hr; Gloria.hr; Nikolina Krznar; Tina Kovačićek; Nikolina Krznar;
Slobodna Dalmacija HANZA media /ex EPH	357, 357, 299, 391, 710, 230 Total: 2344 Average: 391	PSD; PSD; PSD; HINA; Nevena Banić; PSD
Večernji list / DIVA Styria	184, 715, 186, 168, 220, 393, 854, 241, 380 Total: 3341 Average: 371	Ana Škiljić Ravenšćak; Božena Matijević; Ana Škiljić Ravenšćak; aka/VLM; Tonkica Zlački; DIVA; PROMO
24 sata / Miss 7 Styria	201, 378, 342, 697, 323, 711 Total: 2652 Average: 442	Anamaria Butković; Monika Samarđieva; Promo; Mija Dropuljić; Mija Dropuljić; Mija Dropuljić
Novi list J&T fond	409, 147, 511, 450 Total: 1517 Average: 379	Andrej Petrak; Portal Novilist.hr; Ivana Kocijan;
	Total: 11869 Average: 383	3 articles Mija Dropuljić 2 articles Ana Škiljić Ravenšćak 2 articles Nikolina Krznar 1 article: Tina Kovačićek; Nevena Banić; Božena Matijević; Tonkica Zlački; Anamaria Butković; Monika Samarđieva; Andrej Petrak; Ivana Kocijan Many advertorials / promo articles

Source: own research October 2017

It is obvious from Table 2. that articles were of small format. Namely, the average number of words in an article was 383, which is a slightly larger number than a summary of an expert or scientific abstract. This indicates the superficial and

promotional character of the analyzed articles. In addition, many articles were not signed and that indicates the promotional orientation of articles. As far as the authorship of articles is concerned, the table shows that a total of 16 articles are unsigned, which indicates a PR origin of these texts (sources of information are promoted brands). As for the other 15 articles, three articles are signed by Mija Dropuljić, *24 sata* lifestyle journalist. Ana Škiljić Ravenšćak and Nikolina Krznar, who each signed two articles, are also lifestyle journalists. The authorship of articles therefore suggests that the topic of sustainable fashion in Croatian media over the past ten years has not been processed as an economic or political topic, but dominantly as a lifestyle topic intended for fun and leisure rather than for information and education.

The value orientation of articles regarding the topic of sustainable fashion, media context of the articles (the sections in which they were published) and the manner in which the topic was processed and the values it promotes were also researched in the content analysis of media. It was found that five articles were neutral, and the rest of the articles (26 of them) were positive toward sustainable fashion. Majority of articles were published in lifestyle sections (24 of them). One article was published in the politics section, one in business section, one in Zagreb and one in Rijeka section. Three articles were published in current topics. The manner in which the topic of sustainable fashion is processed was dominantly simple and superficial, it served as a promotional decoration of several designers or fashion industries. As far as the content of the articles is concerned, the majority of articles promote sustainable collections of brands H&M (8), Mango (1), UNAESTHETIK (2), Loreta Gudelj Loré (1), Brokula & Ž (2), Martina Zelenika - Druid (1), Ivana Omazić - IO (2), Saša Maksimiljanović - Maks (1), Kristina Burja - Krie (1), ROLLTEE (1). Four articles report on the ORaH's, a green political party, campaign that promoted circular economy and the concept of sustainable fashion in 2015. One article deals with a humanitarian fashion show featuring recycled clothing items; one praises a sustainable fashion style of celebrity actress Emma Watson; one reports that the world's most famous brand of jeans Levi's turns to sustainable fashion, one reports on eco-fashion in New York Fashion Week; one reports on sustainable boots made of recycled plastic; one informs about the slow fashion movement; one writes about a sustainable fashion show organized by the dm trade chain; and one informs about the sustainable perspective of Croatian fashion festivals. As a rule, articles did not provide information about the sustainable fashion concept. Many articles look almost identical although they were published in different media. This indicates that sources of these articles were the same, or, to be precise, that sources were fashion brands themselves (Mango, H&M, IO - Ivana Omazić, Brokula & Ž etc.). Only two articles were not illustrated with photographs. The total of 207 photos appeared in the remaining 29 articles,

which leads to an average number of seven photos per article. Photos are not evenly distributed in the analyzed articles, so one article is illustrated with 18 photos in the gallery, and seven articles have only one photo. Regarding the content of photography, photos of branded clothes worn by models or well-known women dominate. From the above presented analysis it can be concluded that the disclosure of this information is not informational for the public regarding the concept of sustainable fashion, but as a "green" promotional tool of brands, some of which are globally known as unsustainable. In this sense, such promotional contents can be considered as “greenwash”.

Eight designers from the Croatian Design Association (HDD) and the Croatian Association of Applied Artists (ULUPUH) participated in the qualitative part of research: Anamarija Brkić Višnjić, Paulina Pustahija Penzar, Nataša Jeletić, Staša Čimbur, Jadranka Hlupić Dujmušić, Vedrana Mastela, Davor Klarić and Luka Grubišić.

Designers responded to an open question questionnaire that consisted of four groups of questions. The answers of interviewed designers according to the group of questions are presented below.

Ad 1) Are you familiar with the concept of sustainable fashion? If so, how did you get acquainted with this concept?

All respondents are familiar with the concept but sources of information were different. They vary from foreign newspaper articles and professional literature, documentaries, online sources of material suppliers, foreign clients looking for information about where the fabric was manufactured, who made it and under what conditions, and who made their clothes. Respondents also mentioned fashion exhibitions and competitions, PARSONS University from New York and ULUPUH exhibitions named "Redizajn", "Zeleno", and "Art eco"[9].

Ad 2) Is your attitude to sustainable fashion positive, neutral or negative? Do you consider sustainability principles to be important for the future of fashion? Is this concept present in today's Croatian fashion and is it possible to compare it with world’s practices?

The attitudes of Croatian fashion designers about the concept of sustainable fashion is predominantly positive. The overriding consideration is that this concept is more and more present in the world, but in Croatia it is still in its infancy and is not

[9] "Redesign", "Green", and "Art eco"

sufficiently represented and known. In Croatia, they emphasize, fashion design is undeveloped and fashion designers do not even have the ability to tackle the topic of sustainable fashion. Respondents are a little bit skeptical regarding the concept because the fashion industry is strongly influenced by various lobbies and sometimes incredibly low prices. Fashion is strongly influenced by the law of supply and demand. The problem is, they think, that we all want to pay less and in return get more value, but we avoid asking ourselves how it is possible that something has such a low price. Sustainable fashion is pushed to the background because people are only interested in getting more, faster and cheaper. But, they also emphasize, influential individuals, especially fashion designers, might have an important positive impact on the future of fashion and direct it towards a sustainable direction, especially towards the decrease in clothes consumption. Fashion designers could thus contribute to the overall improvement, which is the key to the future not only of fashion, but of the overall state of affairs.

Ad 3) Have you used the principles of sustainable design in your work so far? If so, in what way was it manifested? Do you plan to apply the principles of sustainable design in the future?

The answers to this group of questions were quite varied: some respondents have designed collections that conform to the principle of circular fashion; some apply sustainability principles when cutting and apply zero waste concept; some use natural/ organic fabrics; some use and redesign vintage clothes; some collect and use waste materials in their creations etc. One designer in her circular collection named "In the end is the beginning" used the remains of materials from previous collections and pieces of vintage material and textile waste. She also applied the principles of sustainability in cutting (zero waste concept). The other designer points out that her "fashion expression" has long been based on the use of natural materials (cotton, linen, etc.) and redesigned vintage clothes. She wrote a master thesis on "smart" clothing that is based on a completely new type of waste material, and also deals with 3D clothing. The third respondent points out that the traditional craftsmanship of her lingerie line is somewhat based on sustainable principles. She also explained that in her opinion all materials, old, rejected items can be used to create fashion accessories. The fourth respondent applies the principles of sustainable design by purchasing recycled materials but she also takes care of the employees / community and has a responsible relationship with the waste material. The fifth respondent has not applied the principles of sustainable design in her work so far, but she would like to apply them because she is an environmentally conscious person, and as a designer, it would be a challenge to re-use materials. The sixth respondent uses sustainable textile, applies zero waste principles in tailoring and recycles waste material. The seventh respondent always prefers

natural materials (silk and cotton), preferably organic, which unfortunately cannot be bought in Croatia. The last respondent uses eco-design approach in his work, and it is manifested in different ways, depending on the purpose of the garment item. Finally, all interviewed designers plan to apply the principles of sustainable design in their future work.

Ad 4) What is the cultural and social perception of sustainable fashion in your circle? Are designers more familiar with this concept than non-designers? Do you think that greater presence of these topics in the media could contribute to the promotion of this topic to the wider public and how can it be done?

The majority of respondents believe that there is no major difference in awareness between designers and non-designers. Designers, as well as the society as a whole, are not sufficiently familiar with the concept of sustainable fashion, but also sustainable development as a whole. Respondents assumed that the majority of Croatian designers primarily follow the world fashion, but are limited by the money they need to pay for fabrics. In Croatia there are only a few avant-garde designers who could be said to consume eco design, and unfortunately, the situation is similar in the world as well. There is a lot of buzz about sustainable fashion in the world, but little is done and even less consumed. All respondents believe that greater presence of these topics in media would contribute to the promotion of the concept. They suggested the following methods and ways: (1) showing (promoting) good examples from Croatia and the world, (2) education of the public through public campaigns, (3) promotion of eco design, (4) usage of well-known people to promote the concept, (5) sustainable fashion exhibitions, (6) education regarding sustainability from kindergarten, (7) study programs regarding sustainable fashion at universities, (8) state financing projects that go in the direction of the sustainable fashion and the future.

4. CONCLUSION

The research has shown that two initial hypotheses are accurate and two are not. It has been confirmed that Croatian media publish the texts on sustainable fashion to a small extent, as well as that these articles are not published in serious columns, but superficially in lifestyle sections. Although the majority of analyzed media do not provide information regarding the number of views of an article, it is interesting that the number of views seen on the *Večernji list* pages indicates that this content is not massively viewed. Specifically, the maximum number of views per article in *Večernji list* is less than 2800 views. This information, unfortunately, demotivates the media from publishing such content. The hypothesis that Croatian designers are not well acquainted with the concept of sustainable fashion has been

confuted. It has also been confuted that those who are acquainted with the concept, reduce it to the usage of organic materials. According to the above mentioned it can be concluded that media processing of this topic doesn't affect the (dis)interest of designers because they collect their information from foreign media resources, as well as from foreign expert and scientific literature. Given the fact that research has not confirmed the initial hypothesis about the influence of mass media on information, and thus the creation of designers' views on the concept of sustainable fashion, it can be concluded that this research confirms the growing influence of digital media such as social networks on public information, or at least on some targeted publics. However, mass media continue to play an extremely important role in informing and thus in creating public attitudes, so it is impossible to expect that larger sections of the public will become familiar with the concept of sustainable fashion if the media does not inform about it in the future to a far greater extent than so far. The decision on whether sustainable fashion will become a media topic depends on a variety of factors: the interest of the media owners, the interest of advertisers, the interest of political elites, the interest of big fashion "players", but also on the public's interest. If the public will demand such content, then sustainable fashion will enter the media agenda because the public consumes the media. Otherwise, sustainable fashion will continue to remain a beautiful idea that is often used as a greenwash tool for large powerful industries. Given the fact that the taste of the audience is created with the help of media, or often with publication of certain information in the media, it can be concluded that the current situation regarding the media promotion of sustainable fashion in Croatia resembles a vicious circle.

This research has confirmed the need for more detailed processing of this topic in Croatian media, but also in professional and scientific literature, as well as for far more thorough exploration of designers' attitudes. It is important to note that the membership in these two associations is relatively limited and that there is a great possibility that non-member designers are far less aware of the concept of sustainable fashion than those who were interviewed. Therefore, it is planned to continue the cooperation with these two associations and carry out a far more detailed exploration of the perception of this concept among designers, as well as to organize international scientific conference on sustainable fashion in Croatia.

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Part III

Social Challenges of Unequal Growth

ECONOMICS AND MORALITY: HOW TO RECONCILE ECONOMIC THINKING WITH BROADER SOCIAL THINKING?

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Abstract: *In contrast to the neo-liberal ideology which dominates much of modern economic discourse, virtue ethics embraces the same set of morality for both private and public sphere. In this paper we argue that virtue ethics need nevertheless not at all be in clash with contemporary economic theory. Linking the preferences represented by utility functions in neoclassical economics and the system of values which inspires them can in our view align economic thinking with broader social thinking. Using this novel approach, we demonstrate that many economic and social problems can be solved so as to arrive at efficient outcomes and a higher expected level of utility compared to a case with separate public and private moralities. For addressing the problems characteristic of small open economies, our virtue-ethics perspective on economics supports some government intervention as well as cooperation and solidarity between societies in a similar situation.*

Keywords*: virtue ethics, neoclassical economics, market efficiency, small open economies*

1. INTRODUCTION

A defining characteristic of neo-liberal political ideology is a sharp divide between private and public morality (e.g. Gray, 1995). This divide is the dominant determinant of the concept of human flourishing in neoliberalism. In this work we argue that such a divide is deeply controversial from the point of view of virtue ethics which we promote in this text. For instance, what a public official does in his private life is also important for his job, not in the least because of the example that he sets to his fellow citizens. We demonstrate that instead many phenomena important for human flourishing cross the border between private and public. From the point of view of virtue-ethics, such phenomena are therefore also subject to

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moral regulation. For this reason, the virtue-ethics perspective on economics which we develop in this paper also crosses the border between public and private.

Moreover, we argue that our virtue-ethics perspective on economics need not at all be in clash with the contemporary economic theory. In contrast, we show that it is possible to join the lens of virtues-ethics with the toolkit of neoclassical economics, the dominant set of economic theories studied at the world's leading universities. Using our innovative method, we argue that a multitude of contemporary problems of the economy and the society can be seen as failures of the markets to themselves lead to efficient outcomes. In particular, we emphasize that efficiency of any allocation of goods or of output is a category which can be evaluated only subject to certain set of preferences, while the choice of the set of preferences is determined by a desired system of values. It is exactly this link between the preferences represented by utility functions in neoclassical economics and the system of values which inspires them can in our view align economic thinking with broader social thinking. Note further that opting for a certain system of values will simultaneously determine which outcomes can be considered market failures. Once identified, these failures could then be addressed using the standard policy prescriptions of neoclassical economics that involve some form of government intervention.

We would like to emphasize that various systems of values, and not only that inspired by virtue-ethics, could in principle be used to determine the preferences represented by a certain utility function. But, we argue that values inspired by virtue-ethics could lead to superior outcomes in terms of social wellbeing compared to values inspired by liberal ethics. This is because using the same set of morality for both private and public sphere, a distinguishing characteristic of virtue-ethics compared to liberal ethics, allows the elite to serve as the role model for the society. Moreover, it allows the elite to raise the society's happiness by creating cohesive value communities around a carefully chosen set of values.

We finally argue that reconciling economic thinking with broader social thinking is important for the social wellbeing and the sustainability of economic growth, particularly in small open economies. From among a number of reasons for this, we emphasize two. Firstly, small markets are more likely to experience market failures as a consequence of market power of a few mighty firms. While this is a typical market failure, the ideological bias of the elite of a recently opened economy would have a tendency to overlook it or even justify it. Secondly, the sudden change to an open economy, undoubtedly beneficial in many respects, could also endanger the positive aspects of national business culture and culture in general. In such an environment, our virtue-ethics perspective on economics can

support some government intervention with the aim of correcting market failures and so preserving the economic wellbeing, national culture, and sovereignty; it can also support cooperation and solidarity between societies in a similar situation.

The rest of this chapter is structured as follows. The following subchapter introduces the concept of virtue ethics and compares the main implications of virtue ethics with those of liberal ethics when analyzing the problems of the contemporary society and economy. The third subchapter explains the importance of the concept of efficiency for social wellbeing and its dependence on the chosen system of values. The fourth subchapter argues that opting for a system of values inspired by virtue ethics can lead to higher social wellbeing than choosing an ethical system which stands for a distinction between public and private moralities. The fifth subchapter illustrates how aligning economic thinking and broader social thinking can be particularly beneficial for small open economies. The final chapter concludes.

2. THE CONCEPT OF VIRTUE ETHICS AND ITS VALUE COMPARED TO THAT OF OTHER CONTEMPORARY SYSTEMS OF ETHICS

Virtue ethics differs from the other methods of thinking about ethical issues in that it posits certain substantive values as guiding criteria by which to make moral evaluations, and embeds those values in a particular vision of desirable moral character of a person. Thus virtue ethics is able to avoid many of the pitfalls of more formal and impersonal views of ethics, such as pure deontic ethics, consequentialist ethics, or developmental ethics. For example, deontic (or deontological) ethics insists that the moral value of actions (or choices) is determined by the consistency of those choices with certain universal moral principles, regardless of the practical value of the choices in real life (e.g. always act so that you may wish that under similar conditions everybody else would choose the same course of action). This means that one is justified in making moral choices in accordance with one's conscience, and this entails that one would consistently be able to desire for everybody else to think in the same way and act similarly in similar situations. However, the problem with deontic ethics is that in reality people tend to value universal moral principles differently. Thus, for example, if my universal moral principle is to always protect the vulnerable, no matter what the cost, I would naturally be able to desire that everybody else makes their relevant choices based on the same principle; however, by acting consistently with this principle, I am likely to offend the moral sense of those whose primary, universal moral principle is that of everybody's right to their own property, because, if, for instance, I am a public official, protecting the most vulnerable will likely mean arranging a redistribution of income in society which will favor those

who would otherwise fall through the social system and be helpless. This is only possible at the cost of those who have done well in the same system, and my desire that everybody acts as a socialist might cause substantial rifts, even social or political instability, if it collides with sufficiently many others who hold different principles particularly dear. In acting against the interests of those who wish to hold on to their rightfully gained wealth, I act perfectly clearly deontologically: my adherence to the deontic principle of always assisting the most vulnerable is sincere, and if I were wealthy, I would genuinely desire to be taxed additionally, however this does not necessarily solve the problem of the practical consequences of my choices for society.

The opposite moral methodology is the so-called "consequentialist ethics", which postulates that a moral action is justified if and only if in the sum of its foreseeable consequences it increases the well-being (or rights, or satisfaction of interests, or however else general satisfaction might be defined) of most stakeholders in the decision. In the above example, this would mean that in making a decision on the level of taxation and the consequent redistribution of wealth, I must consider how many people would benefit from my decisions and to what extent, and then choose that course of action which enhances the well-offness of most. This may mean acting in the same way as the benevolent deontologist above, if there are so many of those who are vulnerable who would be helped substantially at the relatively moderate cost to the few of those who are well off, but it also may mean letting the vulnerable fail utterly and reduce taxation for the wealthiest. The outcome is the result of a calculation, not of adhering to a universal moral principle.

Virtue ethics is capable of avoiding both of these pitfalls of deontology and consequentialism, because it assumes that in a particular community there are certain character traits in people which are generally desirable, and individuals with these traits should be trusted to make the most prudent and morally acceptable decisions. Virtue ethics thus posits standards which an exemplary moral personality should fulfil, and the actions are judged largely based on what such an exemplary person might have chosen to do. Traces of virtue-ethics-based thinking are present in the manner in which many legal norms are defined in the English law. These formulations involve characterizations such as "what a reasonable person might expect in the given circumstances", "what a prudent person would be expected to choose", etc. In adjudicating individuals' actions, the courts thus deliberate, among other criteria, whether and to what extent the choices of the person were what an essentially upstanding individual in society might chose to do or not. The described way of thinking about the law allows the courts to moralize: they make their decisions not only based on the letter of the law, but also on moral evaluations which they explicitly or implicitly ascribe to particular individuals.

This type of practice is essential for the maintenance of standards of social decency and an accepted vision of virtue; contrariwise, the practice of many European continental courts, which tend to be guided literally by the law, and even explicitly distance themselves from any kind of "moral, as opposed to strictly legal" reasoning, is potentially deeply destructive for public morality. The law by itself, ideally, should stem from basic moral intuitions and the ideal of virtue in a community; however there is no guarantee that the positive law will necessarily reflect public morality, and in such cases an interpretative, creative role of the courts is absolutely essential to preserve the higher standard (morality) from being actually undermined by the lower standard (the law itself). Judging the personality, in aspects both directly relevant and not directly relevant to the issue that is being adjudicated is fundamental here. For example, there is reason to believe that an exemplary community member who embodies many of the community's virtues ought to be treated considerably more leniently for a legal transgression than someone who is known to show disregard for public morality. This is a controversial issue, and one that one of us has recently addressed at more length (Fatić, 2016: 201–226).

This very aspect of virtue ethics brings us close to the mentioned discussion of the public and private. The liberal ideology and its neoliberal incarnation insist that the preservation of individual liberty is predicated upon a strong separation of the private from the public, or of private life from public life. This is thought to prevent the "infringement" of the state and society upon matters deemed entirely within the sovereignty of a free individual in a democratic society. Such a view is essentially incompatible with virtue ethics, simply because virtue cannot necessarily be separated into private and public virtues. A person is judged to be upstanding based on one's life and one's choices, both private and public. Thus, someone who might act impeccably as a public servant, but regularly cheats on one's spouse, drinks and is seen in disreputable company would hardly be considered a virtuous individual by most accepted social standards. Yet, in a neoliberal context, it would be morally unacceptable to factor the person's personal immorality into their evaluation as a public servant. To take an extreme example, as long as one sticks to the neoliberal concept of privacy, this would mean that a police officer who is neither corrupt, nor deviant during office hours, but is known to commit adultery, gamble, use legal drugs and associate with the town's ruffians, would not be able to be considered less morally fit for the job than another police officer who acts the same at work, but has none of the enumerated problematic habits in her private life. Such a conclusion, while "liberally" correct, would certainly be counterintuitive. Virtue ethics does not recognize a sharp divide between the private and the public, although it is capable of acknowledging various

degrees of relevance of private life in the judgment of a person in their public capacity.

One particular type of virtue ethics which is especially relevant to our argument here is sentimentalist ethics (Slote, 2010). Its distinguishing feature from the other virtue ethics is that it insists on the possession of a particular quality in virtuous individuals, namely the propensity for and high regard for empathy. Sentimentalist ethics is thus an ethics which sees empathetic persons (and, by extension, empathetic public policy) as virtuous in itself. This, then, gives rise to an array of other virtues that are called for, namely loyalty, solidarity, trust, dependability, etc.

Sentimentalist ethics has special repercussions for the idea of an efficient economic system which would also be just, because it presents a contrasted alternative to the neo-liberal thinking. While the main idea of neoliberalism is that the best way to contribute to human wellbeing is to promote free entrepreneurship (perhaps the most accurate definition of neoliberalism, which is often used as a fuzzy and mainly negative characterization) (Harvey, 2005: 2), sentimentalism is close to the concept of care ethics, where the duty of care is seen as paramount to the work of public institutions and the state as a whole. This duty, then, extends to the economic system, as well. Care ethics requires the system, whether it is the economy, the military, or the social service, to actually care for the wellbeing of the citizens not in terms of their relative positions vis-a-vis one another (e.g. as in ensuring "fair competition"), but factually, how satisfied and stable they are in their lives in all aspects that depend on a particular system. This would mean that the moral justification of an economic system depends on whether the main economic institutions can actually demonstrate that the decisions they have taken have arisen from genuinely caring and trying to assist those in need in society, as well as from trying to keep those who are well-off from failing significantly. Such arguments would have to go considerably beyond statistics and academic discussions about particular ideologies, and would likely involve examples and references to specific substantive values which the economic institutions have sought to uphold. Developing such an economic ethics which would be based on care ethics as a variant of moral sentimentalism is our work in progress.

One promising avenue of pursuing a theory of economic ethics would be based on the role trust plays in maximizing the efficiency of economic and, indeed, of most transactions in society overall, and how virtues are inculcated in the possibility of trust. On the one hand, trust arises either from institutional assurances (in which case a certain "virtuousness" or "trustworthiness" of institutions is presupposed), or from a moralistic belief that people ought to be trusted until they prove otherwise. Eric Uslaner labels the first type of trust "strategic trust" and the second type

"moralistic trust" (Uslaner, 2002: 14–50). Once accumulated, trust in society leads to the development of a number of other virtues, such as civility (Seligman, 2010: 62–74) and facilitates what Seligman calls "generalized exchange", namely transactions in society on all levels and at a far more efficient rate. Trust is thus a prime form of social capital (Seligman, 2010: 75–100).

Finally, it may be useful to point it out here that sentimentalist ethics shows methodological advantages over other methodologies of ethical thinking, in that it is capable of reconciling and uniting both deontological and consequentialist ethics. Empathy, or, by our lights, care, is a deontological principle: recall that in sentimentalism actions are judged as morally justified or unjustified depending on their conformity with the duty of empathy or care. At the same time, sentimentalism is a consequentialist method of ethical thinking, because it seeks to achieve a state of affairs in which the overall amount of empathy, solidarity, trust etc. is maximized. Finally, of course, sentimentalism is a virtue ethics, because it posits an empathetic or caring character as socially exemplary. This allows sentimentalist virtue ethics to serve an inclusive role which makes it particularly suitable for developing an economic ethics and dealing with the concept of efficiency.

3. ECONOMIC EFFICIENCY AND SYSTEM OF VALUES

Neoclassical economics represents the body of economic theory which the leading centers for education and research in economics around the world uphold as the contemporary standard.[1] Central to it is the idea of a perfectly competitive economy in equilibrium (Pearce, 1999: 301). Importantly, the competitive equilibrium of an economy is characterized by economic efficiency: in exchange (Pareto efficiency), markets for production inputs (technical efficiency), as well as output markets (output efficiency) (Pindyck, Rubinfeld, 2001: 574, 590-91).[2] Efficiency is important because a lack of it means that, by rearranging the available resources, it would be possible to increase at least someone's wellbeing without decreasing the wellbeing of anyone else. For this reason, inefficient outcomes are necessarily suboptimal for a society that cares, at least to some extent, for each of its individuals.

[1] In the subfield of macroeconomics, neoclassical economics is complemented by neoclassical synthesis (Pearce, 1999: 302).

[2] That competitive equilibria are economically efficient is stated by the first fundamental theorem of welfare economics.

The goal of an economic system ought to be however not only efficiency but also justice. While an inefficient outcome appears necessarily unjust – since correcting the inefficiency would make at least someone better off without hurting anyone – an efficient outcome need not be just. For instance, if one person is in possession of all the goods in an economy, while the others of none, this may also be efficient; in case the rich person feels no compassion for others and she is not willing to voluntarily share some of her goods with them, the only way to make others better off would be to make her worse off. Striving towards justice, societies therefore frequently engage in some form of redistribution of income, goods, or property, where the optimal form and the extent of redistribution depends on the system of values held by the society, or at least its decision-making elite. Nevertheless, if redistribution were to disturb an efficient outcome and lead to an inefficient one, one problem would simply be substituted by another. Luckily, in competitive markets, trades following any redistribution would lead to an outcome which would also be efficient and could be more just than the original one.[3]

For an efficient outcome to be achieved, both prior to and following redistribution, we therefore depend on markets being competitive. But the requirements for competition do not always hold. In these cases we face market failures which are traditionally considered to take the forms of market power, externalities, public goods, and incomplete information (Pindyck, Rubinfeld, 2001: 591-92). Luckily, economic theory has already devised remedies, which typically involve some form of government intervention, for each of these types of market failures. When applied, these remedies could move markets back to competitiveness and lead to efficient outcomes. While a system of values stands in the focus of discussions on the desired form of redistribution, we argue that it should also be taken into account when answering whether outcomes are efficient and whether markets are competitive. This is because both allocative and output efficiency can only be evaluated subject to a utility function which represents a certain set of preferences (Mas-Colell, Whinston, Green, 1995: 175), the latter being inspired by a system of values. We therefore argue that economic thinking and broader social thinking could indeed be reconciled by making the preferences represented by utility functions in economics consistent with a chosen system of values.

[3] That every efficient allocation is a competitive equilibrium for some initial allocation of goods, as long as individual preferences are convex, is stated by the second fundamental theorem of welfare economics. In practice, however, any state-administered redistribution involves institutions which are costly, and the need to pay taxes may lead individuals and firms to work and produce less. Thus, at least some loss of efficiency, and its tradeoff with the compensating gain in equity, appears hard to avoid.

To illustrate how the system of values can determine whether a market can be considered competitive and the outcomes to which it leads efficient we will use, similar to Mladjan, Marković (2016), an example of trade between two countries. Suppose that both of these countries start by producing both food and jewelry. If their citizens are allowed to freely trade, each would specialize in the production of that good for which it has a comparative advantage[4]. After specializing, only jewelry would be produced in one of the countries and only food in the other. By opening to trade, citizens of both countries would be able to consume more than in autarchy, so specialization could be considered both an improvement in wellbeing and an efficient outcome. But, how could our conclusion change if we were to allow for the possibility that the two countries go to a long-lasting war? If this were to happen, the one producing jewelry would have to surrender so as to avoid hunger. Suppose now that occupation by the other country would not endanger the income of the occupied population, which would still be allowed to produce jewelry and trade it for food, but that sovereignty and many elements of national culture would be lost.

In order to answer the question whether the market was competitive and whether the outcome of specialization was efficient, we would need to form an expectation on the likelihood of war and know to what extent the citizens of the country that would specialize in producing jewelry care about sovereignty and national culture. In case that their system of values is such that they are concerned solely with their income, specialization was an efficient outcome. If they however do care for their independence and national identity, specialization was not efficient. The individuals instead traded without being fully aware of the consequences that their decision to buy food from abroad could have for their country and the lives of their loved ones in the long run. This could be regarded as a market failure due to incomplete information, for those unaware of the consequences of their trades. Moreover, it could be seen as a negative externality imposed by those that were aware of the consequences of their trades but did not take into account the pain that loss of sovereignty and national culture would impose on their countrymates that, unlike themselves, care for these values. Importantly, when we opt for a system of values and use it to identify a market failure, we can resort to remedies already prepared by neoclassical economic theory for correcting that type of market failure.

[4] "Country 1 has a comparative advantage over Country 2 in producing a good if the cost of producing that good, relative to the cost of producing other goods in 1, is lower than the cost of producing the good in 2, relative to the cost of producing other goods in 2" (Pindyck, Rubinfeld, 2001: 585). Notice that, using comparative advantage, opportunities to trade are more likely to be found than if a country were to export only goods for which it has an absolute advantage, which would mean that it has a lower cost of producing them than the other country.

In this case, government intervention in the form of tariffs or quotas on imports, or direct government production, could insure that enough food is produced domestically even after partial specialization in the production of jewelry.

It appears that the preferences that are used to judge on the efficiency of a certain outcome could be inspired by various systems of values. In this work, we chose to rely on a system of values that stems from virtue ethics. Notice that, after appropriately choosing a set of preferences in the aforementioned example, the distinction between what could be considered decisions that concern only the individual, and those that concern the whole society (alternatively the division between private and public morality), is reduced or even fully removed, just as it is in virtue ethics.

4. UNITING VIRTUE ETHICS AND NEOCLASSICAL ECONOMICS: FEASIBILITY AND ADVANTAGES FOR INDIVIDUAL AND SOCIAL WELLBEING

Could virtue ethics in principle be reconciled with neoclassical economics? For this to be the case, the system of morality associated to virtue ethics needs to be compatible with the utility functions which are used in neoclassical economics. At first sight, there seems to be a fundamental obstacle to achieve this: consequentialist moralities appear to be those that could intuitively be built into preferences which are used in utility functions while important elements of virtue ethics are deontic in nature (Slote, 2010: 13–27). Consequentialist moralities justify actions based on the consequences they produce. For any set of actions a set of preferences could thus be used to order these actions based on how preferable their consequences are expected to be. A utility function representing these preferences could then assign a value to each action. The utility is thus calculated from the expected consequence, while the actions, circumstances, and even accidents which led to it may not matter for the value of utility themselves. In contrast to this, deontic morality arises from certain substantive principles concerning what the agent does. For instance, deontic criteria may demand that the truth is always told, property rights are always protected, that one is always loyal to his company, friends, or family, and alike. Importantly, the recommendation for an action may be given regardless of the consequences it is expected to produce.

Is it then possible to have a utility function that represents a set of preferences that satisfy deontic criteria? We would argue that this could be achieved by assigning a certain value of utility to each action, not based on the consequences it could be expected to produce, but based on the extent to which the action itself satisfies deontic criteria which may apply to it. Even in cases in which morality is a

combination of consequentialist and deontic considerations, as in sentimentalist ethics, representing it using a utility function should not be troublesome: some actions may be judged based on their expected consequences, some based on deontic criteria, and some based on both, depending on which type of considerations is seen as more important in each case. That both consequentialist and deontic criteria for morality can be inculcated into preferences represented by a utility function should however not come as a surprise given that deontic criteria, such as virtue, could also be the goal of consequentialism.

Having argued that preferences based on deontic moral principles, important for virtue ethics, could be represented using utility functions, we also consider to what extent other characteristics of morality important for virtue ethics are in line with neoclassical economics. Another important characteristic of virtue ethics, and a difference from liberal ethics, is its treatment of public and private morality. Liberal ethics insists on a division between private and public morality, where the latter could, or even should, exclude deontic criteria. Virtue ethics instead rejects this division, and sees the members of the elite who hold public office as both managers of aggregate interests and those who provide a moral example and further values. In this virtue ethics moves beyond subjectivism in moral evaluations and requires some assumed consensus of what it means to be a respectable person in society in moral terms (Fishkin, 1984). We argue that the treatment of public and private morality in virtue ethics is not only compatible with neoclassical economics, but that virtue ethics, by using the same morality for both private and public sphere, could for several reasons lead to greater wellbeing, both for the society's aggregate[5] and for most individuals, than liberal ethics. In the rest of this subchapter, we identify six reasons for why the adherence to the same set of morality for both private and public sphere could lead to greater social wellbeing, as well as greater wellbeing of most individuals, compared to a case in which moralities are separate.

The first two reasons why virtue ethics ought to lead to greater wellbeing compared to liberal ethics are associated to the reign of heteronomy in society. If one's freedom and the experience of life in general are truly limited by the structures and rules of the society, as long as decisions of public officials are affected by their personal preferences, a unified morality will make decisions of state officials that affect daily lives of the citizens more similar to the preferences of the citizens (Nagel, 1979). The examples of such decisions could include priority lists for infrastructural investment, tax policy, social care policy, as well as the culture prevailing in state institutions which daily interact with citizens. The citizens would

[5] As measured by a social welfare function that applies a weight to each individual's utility in determining what is socially desirable (Pindyck, Rubinfeld, 2001: 576).

thus feel happy about the decisions of the state officials because they would be the same as those they would make themselves if asked to shape the structures of the state and the society that directly affect their daily lives.

There are however other decisions of state officials that also matter for the citizens' happiness. To the extent that other decisions which are in the exclusive jurisdiction of the state but do not affect most people's daily lives, such as foreign or defense policy, are affected by the personal preferences of the public officials which make them, a unified morality will also lead to a lower difference between the choices of state officials and the preference of the citizens. The citizens could thus feel happy about the decisions of the state officials as they could relate to them as if they were their own. One could of course question the extent to which citizens would care about that type of decisions. But, everyday discussions between people in a restaurant, in a taxi, or at a hair dresser's shop, testify that people do care for many such elements of national policy. This may be so because people associate their own prestige with that of their nation, or because their family's memory testifies that even such elements of national policy can occasionally become very important for daily life, especially in periods of great political turbulence and conflict.

Two further reasons result in greater social wellbeing, and that for most individuals, when public and private moralities are the same. A unified morality would namely enable the elite to serve as a role model for the rest of the society. Over time, this could lead to a convergence of values of individual citizens towards the values of the elite. Given that we just established that the decisions of the elite are perceived as important by the citizens and thus matter for their happiness, the sum of individuals' utilities calculated by a social welfare function should rise as the average difference between personal preferences and the choice of public officials declines during the convergence process. While narrowing the gap between the preferences of the citizens and the elite ought to matter for social wellbeing, we argue that the set of values chosen by the elite for the target of this convergence would also matter. In other words, we believe that not all sets of values that could be chosen by the elite would lead to the same level of social wellbeing. To illustrate why this ought to be so, we proceed to use two opposing quotes that represent the sets of values propagated by parts of the Serbian[6] elite in the beginning and at the end of the twentieth century.

[6] Serbian in this context refers to the elite of the Serbian people, irrespective of the region or country that it inhabits. We consider its elite as unique, given that communication between the members of the elite that live in different political jurisdictions, and their influence on the people in other jurisdictions, was and to this day remains frequent.

During the last years of the twentieth century, the singers of popular music gained importance in the Serbian society as role models, not in the least because the mass media allowed them to gain enough popularity to earn sufficiently well so as to be relatively rich compared to large parts of their impoverished society in economic transition. One could qualify the type of lifestyle their songs promoted as that of immediate satisfaction rather than perseverance in work for the achievement of longer term goals. One of the best examples is contained in the words of one of the songs of the singer Violeta Viki Miljković (1974–) (Miljković, 1994):

> *"Some people like this, other people like that,*
> *And me and you, young one, [we] always [like] something new.*
> *Some people like books, going for a walk, and loneliness,*
> *While the two of us, my boy, we live during the night.*
> *Coca cola, marlboro, suzuki, discothèques, guitars, bouzouki*[7].
> *This is [real] life, not an advertisement. Nobody is happier than us."*

Interestingly, the verses of this song explicitly refer to happiness, or wellbeing, and that not only of the singer herself but everyone else who embraces that type of lifestyle, in this case her and her boyfriend. They thus make a direct connection between a lifestyle that stems from a certain system of values and happiness, and actually compare two sets of preferences by their expected utility outcome. The writer of the verses of Miljković's song would thus appear to agree with the authors of this paper on that the level of wellbeing should depend on the set of values. An opposing lifestyle and system of values is illustrated by the following quote from the testament of Isidor Dobrović (1841-1914), a Serbian trader from Baranya region, one of the largest benefactors of Privrednik, a society dedicated to the free education of poor Serbian children from all over Austria-Hungary for crafts or trade. In his will Dobrović advises:

> *"We, the older ones, must help, create foundations, and you, the youth, (should) work, work and make savings, pray to God, seek advice from the more experienced adults, and love your work – the rest shall come by itself (Krestić, 1998)".*

The two world views appear confronted: the first one seems to favor unrestrained experimentation over consulting the adults, night life over day life, and amusement over work. Without looking upon the human drive towards immediate satisfaction celebrated in Miljković's song, we believe that it could be justified only as an occasional rest aimed at sweetening the effort and occasional bitterness of life,

[7] Bouzouki is a type of Greek musical instrument originating from Asia Minor.

rather than a set a values and goals that should themselves represent the purpose of life. On the other hand, we believe that a longer term happiness of an individual and success of a society can rather be assured by the set of values proposed by Dobrović in his will. Moreover, we interpret the Serbian social and economic history following the dates of the two quotes as speaking in favor of our view. We thus conclude that the level of utility of each citizen, and therefore the social wellbeing, could depend not only on the difference between his preferred choice and the choice made by public officials, but also on the type of values that inspired the elite's preferred choice. A unified morality would allow the elite not only to unite the citizens around a single set of values, but also to make this set of values the best possible – that which maximizes the social wellbeing.

Finally, we can identify at least two reasons for why the outcomes associated to a common morality between public and private sphere ought to lead to outcomes that are both more humane and improve efficiency; as such, they also result in greater social wellbeing and that of most individuals. Firstly, the creation of cohesive value communities reduces the need for and cost of state intervention – reducing the need for taxation which is associated to inefficiency – since social stigma can play the role that costly legal sanctions play in a liberal society. Note that both a social stigma and its corrective effect on an individual's behavior are possible only in a cohesive value community. This is because only members of a community that share a certain set of values will have the expectation that other members of the same community would adhere to them. Finding legitimacy in these values, encouraged by the fact they are not alone, they would openly express their opinion on the extent to which an individual's actions agree with these values, disregarding the liberal objection that this would be interference with an individual's freedom. Moreover, only if an individual belongs to that community and accepts that he should in principle act in accordance with its values, perhaps because for many needs in his life he is directed towards and dependent on that community, will he feel ashamed if the other members see that his actions defy the shared values. If the members of the community are mean towards the member that rejects its values one could argue that such a cohesive value community may in fact be reducing instead of raising the wellbeing of its members. But, if the corrective pressure is connected with expressions of sincere worry for and love towards community members that in their view err, such a social stigma may be a more humane and more effective way to correct socially problematic types of behavior that in a liberal society would have to be dealt, frequently in a more advanced stage, with some form of, always costly, state intervention.

Another reason for why a common morality between public and private sphere may lead to more humane outcomes that also increase efficiency can be related to acts

of solidarity and mutual help. We expect that privately-initiated manifestations of solidarity are more likely to occur in cohesive value communities and that such deeds should usually lead to higher wellbeing than state-administered redistribution of goods, property, or income. The origin of most acts of solidarity must be empathy, and one is more likely to feel it towards a person one knows, which should more frequently happen in any type of community than in a society of self-centered individuals. One can feel more empathy when one understands the other person better, and one is able to identify with that person and her difficulty. This is more likely to happen in a community that shares the same values, because these values in part determine the ambitions and circumstances of life of each individual, and one can more easily identify with people who think alike and who are in similar circumstances.

Manifestations of solidarity within cohesive value communities are not only more likely to occur but should also lead to higher wellbeing than state-administered redistribution. The first reason has to do with how the redistribution of income is perceived by both the giving and the receiving side. If the redistributive mechanisms of a welfare state are perceived as the results of a social consensus, as in Western European social market economies after WWII, rather than an expression of solidarity, the taxed ones are deprived of the joy of giving while the beneficiaries do not experience thankfulness for receiving what they instead consider their right, an argument going back to at least to the Serbian bishop Nikolaj Velimirović (Velimirović, 2001). This reduces the immaterial wellbeing of both groups. One way to address this concern would be to keep the redistributive mechanisms of the welfare state, but change the perception of the nature of the transfer by both the giving and the receiving side. As long as the transfer is made compulsory however, there is a danger that the perception would drift back away from a positive mutual predisposition of the different social groups towards an emotionally cold social compromise. If, however, the redistributive mechanisms of a welfare state are at least in part substituted, or complemented[8], by voluntary transfers inspired by solidarity, the joy of giving and the thankfulness for receiving could instead raise the immaterial wellbeing.

Acts of solidarity within cohesive communities could also raise the level of efficiency in how the resources are used to provide aid. This is because cohesive

[8] To the extent that the compulsory redistributive mechanisms are kept, it may be beneficial to substitute the right to aid and the obligation to pay tax, with only the obligation to pay tax in order to help others, and the obligation of the state to help those in need, so as to at least incite the feeling of thankfulness among those that receive aid. In such an arrangement, instead of referring to their right, they could instead refer to the obligation of the state to help.

communities may better know who needs aid and how much of it. This could allow that a greater aggregate improvement in welfare is achieved using fewer resources than in a case of a redistribution administered by the state, whose institutions may be more distant to the receivers of aid than fellow community members. Non-monetary transfers that can reduce the losses during the transfer process can also be easier administered within a community. If, for instance, the aid is needed to replace a roof of a house that belongs to a family with children in which at least one of the adult household members drinks, a monetary transfer from the state may result in at least part of the money being instead spent on alcohol. If a public servant were in charge of managing the process of repair, including buying the construction material and paying the workers, both neglect in choosing the best mix of price and quality and corruption could instead lead to a part of the funds being wasted. But, the money which would be spent on repairing the roof by the neighbors of the less fortunate family would not be wasted on alcohol or corruption: they would know both the needs and the weaknesses of the family, would manage the construction process themselves, and would not waste their own money which they could instead use for themselves or to help even more of those in need.

We would finally like to observe that not all cohesive value communities may have the same potential to lead to acts of solidarity that raise the social wellbeing. For expressions of solidarity within a community to have the most potential to help, it is beneficial that it unites people from different economic strata, allowing the economically better off to help the worse off. Thus, cohesive value communities which are not based on a common economic standing but for instance on religious or national values should have a greater potential to help, especially if the economically well off sub-group is sufficiently large.

5. ECONOMIC THINKING AND BROADER SOCIAL THINKING IN SMALL OPEN ECONOMIES

Thus far we argued that our proposed approach could be very successful in improving social wellbeing and that of most individuals. Building on this, we proceed to give reasons why the beneficial effects could be particularly large in small open economies, and even more so in those that recently experienced economic transition. In our view, the benefits to such countries from policies that reconcile economic thinking and broader social thinking would result in both immediate gains in wellbeing and – through more sustainable economic growth – higher wellbeing in the long run. Among many potential sources of such benefits, we would like to describe a few.

Firstly, notice that small markets are more likely to experience market failure due to the concentration of power of a few large firms; following privatization in transitional economies, these firms would aim to maximize profit and thus raise their prices well above their marginal cost of production. While being an economy open to competition from abroad could reduce their market power, the openness itself may not solve the problem. If local knowledge is important for success in the market, if foreign companies are not sufficiently interested to enter the market because of its small size, or if the local product distribution network is also marked by high concentration of ownership, then fewer goods would be produced and consumed and that at higher prices than in a competitive market. This is a typical case of market failure, and no special approach towards integrating broader social thinking in economic decision making should in principle be needed to recommend a government intervention with the aim of breaking monopolies and cartels and regaining output efficiency. But, integrating broader social thinking may in reality be necessary to confront a strong ideological bias against government intervention or ownership – associated to a system of values which, poor in solidarity, considers any market outcome as more equitable – prevalent in transitional elites. Viewing instead all the different economic classes of the society as one community would instead result in different policy recommendations. In case a country is not strong enough to regulate the markets with high concentration of power, government ownership of at least one major market player in an industry, with a clear mandate to follow the price and quality policy with the aim of breaking the cartel rather than taking a part of its profits, could instead correct the market failure and improve social wellbeing and that of most individuals.

Secondly, ignoring the broader social consequences of having an open economy can lead to situations that, depending on the system of values used, could be regarded as market failures. Such a market failure could arise irrespective of whether the changes that created it increased or decreased output or consumption, just as in our example on trade in food and jewelry. For example, typical of small economies that experienced a sudden opening are changes that could endanger the positive aspects of national business culture and, by spreading outside of the companies, culture in general. One way this could ensue is through adoption of aggressive marketing strategies from abroad: methods of customer acquisition that range from impolite insistence to outright lies; this could be regarded as a market failure due to a negative externality. A similar mechanism of uncareful adoption of knowledge from abroad could make bad translations from English, preserving a foreign syntax and resorting to newly invented Anglicism, spread a distorted national language from firms' internal documents to media and everyday use. Preservation of national language and business culture in domestically owned enterprises, whether government or privately owned, could work to correct such a

market failure. Similarly, the insistence of all stakeholders, from local management to customers, that foreign companies adapt to national culture, could result in its enrichment by selected foreign elements rather than devastation and replacement.

6. CONCLUSION

In periods of economic prosperity relative to own past or to the neighboring countries, most people may be sufficiently satisfied with what they have so as not to be willing to risk it in a social conflict, even if they are hurt by some injustices. In such times, the elites could become careless about preserving the balance between economic and social development, the concern for themselves and their countrymates, or about protecting the environment. But, in spite of the fact that people have a tendency to believe that "this time is different" (Reinhart, Rogoff, 2008) – that due to better experience and policy making skills the current round of prosperity will last forever – financial and economic crises always happen again. Unfortunately, the social strife which frequently accompanies them can have the potential to lead to even greater disasters, the interwar Europe being a telling example.

In this chapter, we argued that it is possible to reconcile economic thinking with broader social thinking by linking the preferences represented by utility functions in neoclassical economics with a desired system of values. We also discussed why relying on virtue ethics instead of liberal ethics to inspire economic policy may be a way to both make historical disasters less likely and to, also in normal times, improve the social wellbeing and that of most individuals. Using a number of examples, we showed that our approach has the potential to consider both economic and non-economic contributions to wellbeing simultaneously. In these examples, many corrections of the financial aspect of inefficiencies result from replacement of costly government intervention with social rules of cohesive value communities and private initiatives. But, we also showed that higher efficiency could also be associated with lower consumption or production, depending on the effects on non-material wellbeing, as well as on material wellbeing in the long run, that a certain allocation may have. Moreover, we argued that even apparently purely non-economic decisions, such as foreign policy of a country, can also be evaluated for their efficiency. For the gains to the non-financial aspect of wellbeing, the influence of the elites on values was found to be of great importance. Considering small open economies, our approach recommends cooperation and solidarity between societies in a similar situation: extending the market size could help to reduce market failures due to market power, while a common insistence on preserving elements of similar national cultures may force international companies to adapt rather than impose their business culture. Finally,

we believe that future research on this topic should further develop and refine the concept of efficiency which takes into account individual preferences over more than material goods, the concept which we began to describe in this chapter.

ACKNOWLEDGMENT

For valuable comments and suggestions we would like to thank participants at the 9th International Conference of the Institute of Economic Sciences in Belgrade, and the lecture series at the Institute for Philosophy and Social Theory of the University of Belgrade.

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SHAPING TRADITION INTO CULTURAL-ECONOMIC GOODS IN ORDER TO ACHIEVE SUSTAINABLE DEVELOPMENT – CASE OF SERBIAN SILK PRODUCTION

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Abstract: *The main goal of the paper is to answer the question: How to use traditional knowledge in order to create cultural-economic goods? This is topical because the connection of real tradition and crafts with responsible forms of entrepreneurship represent a real direction to achieve sustainable development goals, with a revitalization of culture that is related to real historical facts.*

This paper represents a continuation of work that relies on our previous research findings (related to key phenomena: silk production, silk roads, proto-industrialization, cultural political economy etc.). Theories we rely on (such as the cultural political economy, sustainable development, common goods, social and cultural entrepreneurship, cultural tourism) have enabled to summarize the facts that are related to our key phenomena.

We used our previous research data which implied strong historical approaches, archive data and field research. This allowed us to strengthen universal findings and conclusions we came to about each element. In confirming mentioned conclusions our specific previous studies helped a lot (Serbia, Calabria cases), as well as the examples of other authors. Moreover, this helped us create a possible solution for a revitalization of silk production as multi-layered heritage that can contribute to sustainable development.

Keywords*: silk production, cultural-economic goods, entrepreneurship, sustainable development, proto-industrial phase, textile trade and markets*

1. INTRODUCTION

We have identified the phenomenon of silk and sericulture (silk industry) as very important because silk represents a multilayered heritage that connects history, culture, agriculture and trade. In one word silk represents ideal cultural-economic good since it had very long tradition, in terms of production and trade (within

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borders of Serbia (from 18th to the middle of 20th century)). Also, silk cannot be observed only through one country context, since it represents imported heritage from Asia to Europe. Therefore in the next parts, we take into account the silk and its various meanings (cultural, historical, economic), over time (from the proto-industrial phase, significant for textiles in general) relying on the conclusions of our previous research (Serbia and Calabria cases). Previous is important, because it allowed us to model solutions in third part of this research paper that could support silk production revitalization as a traditional knowledge and craftsman skills, by (re)shaping it into the cultural-economic goods, supported by responsible forms of entrepreneurship (cultural, social) and tourism (cultural, eco-cultural, and other alternative forms). Referring to the grand theories helped in the perception of macro systems (such as cultural policy at country level), while middle theories primarily had significance in micro systemic functioning (management in culture options on organizational and/ or institutional level). The most important base of previous theories leads to a cultural political economy (CPE) and cultural economics authors. Moreover most significant as previous important research for this paper are the works of Jessop (Albritton, Jessop and Westra 2010; Jessop, Sum 2013; Jessop 2015) and other authors that contributed strongly to CPE shaping.

Why is proto-industrial phase important? Because our research has a very strong historical background in order to achieve a better understanding of relevant phenomena around silk. The proto-industrial phase of economic development is extremely important since it represents the beginning and initial frame for textile production. Thus silk, as a textile must be seen through proto-industrial discourse.

Proto-industrialization scholars aimed to explain the transition from feudalism to capitalism, as well as the social transition - a traditional society of peasant agriculture to the modern industrial world. Generally, proto/industrial phase represents the period from 15th to 18th century, and it is characterized by small-scale production which is considered to be the beginning of the organized textile (and as well silk) production. In most cases, these were very fragmented economies. As author Huston notes traditional local handicrafts had always existed in rural areas, but in the period from the fifteenth to the nineteenth century a new economic development occurred in many regions (to which considerable attention is now being paid (Houston, K.D.M. Snell 1984)). This period is also characterized by an expansion of rural industry without major changes in the techniques or scale of production, and as a development phase, it is termed as proto-industrial, as an industrialization before industrialization (Houston 1984, Kriedtc, Mcdick 1977). The time of early modernization/proto-modernization (15th century) processes and activities related to the textile production have supported largest worker groups outside the agricultural sector. Mercantile capital in the feudal system, allowed the

integration of regional fragmented economies into the wider international network of commodity (Fennell Mazzaoui 1997), so this early exchanges had the potential to affect multiple transformations especially important in terms of market evolution through production relations between interest groups (merchants, aristocracy, producers, consumers). As Huston noted the trade was seen as an "engine of growth" in the proto-industrial phase (Huston 1984, KMS 1974).

To understand the importance of trade better, we decided to elaborate some previous research ideas in next part of the discussion, in order to spot the elements that had an impact on the global development of the textile industry and markets, with a special emphasis on sericulture (silk industry). This will make our previous main findings on silk industry firmly and universally important.

In terms of transportation options, textile industry strongly relied on road traffic (silk roads, Saharan caravan and others) and later oversea transportation towards colonial but also non-colonial countries (North, South America, Africa, India and other Asian seaside parts). That is why silk roads had and still have a very important role as cultural and economic transnational corridor.

2. PROTO-INDUSTRIAL TEXTILE WORLDS MARKETS -DISCUSSION ABOUT GLOBAL TRAJECTORIES

When talking about European textile markets and international activities the main actors could be separately distinguished: English, Dutch, Spanish, French and Portugal. These actors mostly had the same goals and attempts, at first place to spread markets (from internal to European but furthermore (through the colonial world) in all parts of the world. Largest silk producer in Europe was Italy, (producing half of the total European produced silk) and their export direction was primarily for the European market, and after for the other worlds markets in terms of sophisticated silk products intended for elite consumption. Even as the main producer, Italy imported raw silk from the Levant and other Asian parts. In the 16th century, Spain had attempted to integrate sericulture markets with colonial South America, since they introduced sericulture to the natives (but also wisely expropriated their traditional knowledge about textile in order to be able to satisfy specific market taste and demand) (Grijalva 1989, Mazzaoui 1997). Previous Spanish attempt was disabled by extensive Chinese exports through the triangular trade route China-Manila-Spanish America with involved Chinese community on the Philippines that later in the 17th century represented dominant China silk export direction (Chao 1989, Mazzaoui 1997). In proto-industrial phase, exchanges were based on different types of products with other countries and extensive export that brought significant capital (gold, silver, diamonds, luxury goods and money).

Generally, Mediterranean and Balkan countries except cotton and wool developed silk production (but also other specific nature textiles that came from Mediterranean plants such as ginestra textile) because of suitable climate (Kocovic, Markovic, De Santo 2017). When talking about territory, European silk was produced along the Mediterranean coastal zone, and Balkan, while Asian production was spread everywhere – from China, Japan, to the Middle East, Central Asia, and India, later in the 19th century new areas appeared (Wuxi in Central China or Kashmir in India) (Cafagna, Federico 1992, Kocovic, Markovic, De Santo 2017).

Speaking in terms of continental particularities, Europe was the main importer of Asian goods, later exporting them towards other continents. Europe could not ever come nearly close to the level of Asian production of silk, primarily because of the cultural differences. Not only technology and economic organization but also socio-cultural norms helped in processes of governing the usages of textiles, as market social, political or ethnic status or as ceremonial objects that also favored the consumption of traditional silk and cotton products of the region (Mazzaoui 1997). As previously mentioned, Asian trade has been solid and strong over time, because internal demand was satisfied by internal supply, but also added values were created through the export. Namely, Asian countries and people have always been strongly attached to the tradition, identity, meanings, rituals, societal values that were transported as well to the fashion and taste for textile (which shaped total Asian demand). This is why Asian people have always preferred their own textile (that also implied small proportion of European cloth in Asian markets) (Mazzaoui 1997, Kocovic, Markovic, De Santo 2017). On the first place Asian market development was based on internal markets, and after on export. In opposite European market actors have always been searching for new markets - mostly external. In proto-industrial phase, most of the countries would have applied elementary self-regulating measures in terms of guarding internal markets from price dumping. For example, British export towards colonial markets although highly depended on merchants, recorded most important growth (from England, Scotland and Ireland) thanks to protectionist measures and parallel expansion of the production. Ottoman Industry was already under the pressure of European competition at the second half of 16th century (Mazzaoui 1997, Cizakca 1997). Because European countries in this phase had almost constantly increasing demand for the raw materials (mostly because of lack ability to produce internally on a larger scale raw materials - but instead final products), this would implied the rise of raw fabrics at the international markets and price fluctuations. Speaking about the interdependence of that time, it is valuable to mention that for example Low-cost English and Dutch wool, and Indian cotton, actually cut off the Iranian workers output, and on contrary, the rise of Iranian silk prices had the strong

impact of European manufactures (which mostly used Iranian raw silk). Such situation often led to the rise of European (manufacturers) demand for Italian (French and Spanish) raw silk (Kocovic, Markovic, De Santo 2017). Europeans had the role of Trade Bridge between other sides. Indian textile was superior by many terms (price, low-cost labor, skills, flexibility and adaptability towards demand etc), that made them main supplier in the global economy of quality cotton. Tokugawa Shogunate had strong direction and commitment to the development expanding sericulture and textile industry that made Japan successfully prepared for the future industrialization. What makes Japanese approach towards silk development different than any other is the fact that producers of the final silk products were peasants who processed their own raw materials from the first to the final stage, after they would sell these products to the merchants (who in most cases used credits) (Kocovic, Markovic, De Santo 2017). Rural producers in Japan increased steadily their market share (to the detriment of urban artisans) and until the arrival of technology higher specializations did not exist. This made the development of strong rural communities with social mobility possible. Also, this allowed land-less people to get their fair shares that actually represented the capacity building in all the terms. Japan proto-industrial phase could be explained as a "strengths reinforcement of the vulnerable, through reduced improvements by factual achieved power" (Kocovic, Markovic, De Santo 2017). African mostly elite demand had strong cultural focus, similar to Asian.

Above mentioned vivid textile trade inter-relations between continents and countries were provided by the existence of various routes, trails and roads. More about the multi-layered importance of roads will be shortly explained in next part that is specifically related to silk roads.

In terms of transportation options, textile industry strongly relied on road traffic (silk roads, Saharan caravan and others) and later oversea transportation towards colonial but as well non-colonial countries (North, South America, Africa, India and other Asian seaside parts). In addition to the initial role of trade and transport, Silk roads assumed long-term (millennium) continual process of permanent connectivity of cultures, languages, people, and goods. It could be said that silk roads from the beginning, have been representing the first transnational and global corridors that provided migrations of vibrant values through the respect of culture and economy. As we could see the trade within silk roads took international proportions as initial reason point, evolving into different types of products exchanges (Kocovic, Markovic, De Santo 2017). Processes within the silk roads have been constantly reshaped, allowing deeper understanding and acceptance between (different) people. This created firm relations between people, culture, environment, within natural landscapes and associated capillary tracks, trails,

routes, paths of latter called - silk roads. Besides the silk, parallel exchanges that took place on these roads (such as languages, religions, literature, writings, scripts, spices, legends, materials, grains, animals, people etc.) enabled the great cultural mix, mobility and exchange. (Kocovic, Aleksic, Markovic, 2017).

3. SERICULTURE AND ITS PHASES - SERBIAN EXAMPLE

In the wider terms important for Serbian example, the purchase of raw silk was conducted by the private cartels in the Balkan region. Something very important we found in an archive is that previously mentioned purchases of raw silk would later be launched without any labels by private cartels to the European silk markets (Lyon, Milan, UK, etc.). Moreover, the silk produced in The Kingdom of SHS was sold on the mentioned stock markets, to the wholesale and final buyers as Italian or Hungarian, without right information regarding the country of origin production all until better organization on State level in terms of trade.

The Silk production brought inherent culture and economy in Serbia throughout history. These categories: culture and economy, are very important because with silk arrival they were formed and re-shaped within any terrain in contact with the indigenous. Therefore, the sericulture as much as universal has been very authentically developed in all places. It is likely that mulberry tree, would not arrive in Europe if there was no need for sericulture development (Aleksić, 2010).

Table 1: The three phases of sericulture in Serbia

The first phase of sericulture 1769-1914	The second phase of sericulture 1918-1941	The third phase of sericulture 1946-1960

Source: Authors shaping of information from Archive of Yugoslavia

The first factory of silk was created from the middle of 18th century in Pancevo, the city in Banat part of northern Serbia. This can be recognized as the first phase of sericulture in Serbia. At that time region of Banat was part of Austrian military border. The production of silk was introduced in 1733 and was rebuilt in the Banat border in 1769, at that time there was produced 528 pounds of cocoons. Unwinding silk bureau was founded in 1776, in the city Bela Crkva (White Church) and Panchevo (Mileker, 1926; Đukić 2017).

The second phase of sericulture in Serbia begins after the First World War (1914-1918), and the establishment of the Kingdom of Serbs, Croats and Slovenes (the Kingdom of Yugoslavia 1929-1945). It was divided into three sectors: state, concession (private) and free-range sector. Sericulture in that period was promoted

as a *social and not only profitable category*. The intention was to give the *opportunity to the most vulnerable people* (poorest agricultural population) to earn more. By breeding silkworms they could get additional income before any money from agriculture arrives. The entire organization of the state sericulture was directed towards planting and cultivation of mulberry trees. Planted mulberry trees were mostly located in common and public areas, and planting process was supported by the state budget. Mulberry trees were free for farmers to use, for lives collection in process of silkworms breeding (for the need of further cocoons production). There were only two concession companies for the cultivation of silkworms. One of them was in Croatia and the second was Silk association located in Lapovo (Serbia) that covered a pre-war area of Serbia. Free-range breeding of silkworms existed only in South of Serbia (today's Macedonia).

In the Kingdom of Yugoslavia, there were 24 stations for the purchase of silk cocoons, 10 nurseries with about 300 thousand of mulberry trees under 5 years old and even 700 thousand planted mulberry trees along the streets and public roads that were controlled by over 300 municipalities controllers. At the same time, more than 25 thousand of families were engaged in the cultivation of silkworms.

Until 1928, there were three state plants for dispatching silk cocoons. They were all on the rivers because the river water was needed for processing: in Novi Sad on the Danube, in Pančevo on the Tamiš and in Nova Kanjiža on the Tisa. In Novi Sad, there was a special Institute for the production and testing of silkworm seeds with Paster's cellular system and the most modern laboratory. Only in North of Serbia (Vojvodina) where 3 largest factories were located, it was possible to produce annually million to million and a half tons of raw cocoons, which represented around 400 to 500 tons of dry cocoons.

The largest State Silk Factory was located in Novi Sad and could employ 350 to 400 workers. At the annual level, it was able to process 60 tons of raw cocoons, of which about 15 tons of raw silk was produced with corresponding quantities of accompanying products.

The second largest was the State Silk Factory in Pancevo, whit about 300 workers. At the annual level, it was able to process 50 tons of raw cocoons, of which about 12 tons of raw silk was produced with appropriate quantities of accompanying products.

The state silk factory in Nova Kanjiza had 80 sets for raw silk spinning and could employ about 220 workers. At the annual level, it was able to process 45 tons of raw cocoons, of which about 11 tons of raw silk were produced with appropriate

quantities of accompanying products. All three factories were able to produce 38-40 tons of raw silk annually. During the 1920s, a special exhibition space was made in the factory in Novi Sad.

Until 1928 silk production in the Kingdom of Yugoslavia was at the third place in Europe with high-quality types of cocoons, due to the good weather conditions that contributed well to sericulture development. Practically there was not a single municipality in Vojvodina (North of Serbia), which has not been breeding silkworm. Previously sericulture was recognized as one of the most important state industries in the Kingdom of Yugoslavia. (Archive Yugoslavia, Memorial book 10 years of KSHS 1918-1928).

Table 2: Main silk factories and annual production before IIWW

Factory		
Pancevo city	Novi Sad city Pancevo city Nova Kanjiza city	Novi Sad city Pancevo city Nova Kanjiza city
Production of cocoons		
528 pounds of raw cocoons / annually	1.5 million tons of raw cocoons / annually	2-3 million tons of raw cocoons / annually
Silk Production		
/	38-40 tons of raw silk / annually	55.5 tons of raw silk / annually

Source: Archive of Yugoslavia

The third phase of sericulture begins in 1946 (after the end of II World War). The new established Federative Republic of Yugoslavia begins to develop the planned economy, emphasizing the progressive development of heavy industries (metallurgy, mining etc.). Tough focus on industrialization sidelined even light industry (textile industry). Nevertheless, sericulture was found its place in the first five-year economic plan of socialist Yugoslavia. Within the plan, it was estimated that the expansion of silk raw material base is possible. From 460 tons silk cocoons, that was produced in 1946, it was considered very easy to climb this production to a million and a half tons and even at two million tons in the period from 1947 to 1951. Within the first five-year plan development of the two million tons per year, production was designed. The same five-year plan was provided for the construction of two facilities for final products of silk, with a capacity of about 266 tons per year. One large factory installation containing a capacity of about 180 tons per year was provided in Titov Veles (never built) while the silk factory in Novi Sad was provided to upgrade the capacity on 52.5 to 55.5 tons However, new directions for the chemical industry came everywhere on the global level and

replaced almost all the natural and clean industries until the 1960s, which caused it to after 1960 silk does not exist on industry level in Yugoslavia (Kocovic, Aleksic, Markovic, 2017).

4. MODELING SUSTAINABLE DEVELOPMENT FRAME FOR SILK REVITALIZATION AS A CULTURAL-ECONOMIC GOOD

When talking about culture and cultural goods few important meanings should be included such as culture is seen as a common good; culture represents an everyday way of life and human interrelations, and culture summarizing headquarters of meanings. Fast changing the turbulent environment with asymmetry regarding the distribution of created and existing values characterized by capitalist societies brought us to the position of the lack of ideology, societal values, followed by uncertainty clear political directions at mostly every (state) level. Mentioned flow opened up challenges related to the cultural goods. In neo-liberal market discourse cultural goods are highly influenced by economic policies, so even these goods stepped into the market competition, with added (mostly) economic values, that re-shaped goods into cultural-economic.

Finding new sustainable development frame for silk revitalization implies compatible options to achieve resilient cultural department, through directions of cultural governance that is an integral part of total economic governance processes. Or research question, how to shape silk and its production as a traditional heritage to cultural-economic good, led us to the conclusion that institutional and/or organizational change is inevitable. Moreover, it is constantly happening and it is strongly influenced by capitalistic challenges. If we observe culture organizations and institutions from the point of its purpose, the reflection could be seen in the preservation and promotion, through communication and interpretation of cultural heritage by their meaning. In order to make heritage last in time, management approaches should be more creative, proactive and effective in line with contemporary changes that are happening very fast in other departments. In line with previously mentioned umbrella policies from which the cultural practice depends on, common elements should be sought that make them more compatible with total governmental policies and politics (especially related to economics) (Kocovic, 2017). This part of the study is about synthesis through a combination of theory, policy, ideology and practice through fresh initiatives (strongly based on examples from reports of relevant international bodies) from different disciplines. The interdependence of politics, policies and governance is the key in order to make modelling of silk revitalization and sustainable development possible. Moreover, establishment of comprehensive policies that would enable better integration of cultural and economic policies (having in mind the importance of

culture) is essentially important in terms of silk revitalization since we understand its multilayered nature.

The work of CPE authors is pointing to the institutional changes and cultural turns in political economy and it goes in line with an implicit focus on regulation and state theories, with re-contextualization.

Modern state cumulative genesis in parallel represents capitalism development that is strongly influenced by the arena of total political economy and culture. Moreover, cultural development implies the continuous progress of human activities and lives not only in the field of culture and art but in all other areas. Or, even better development of human activities is continual progress in the field of culture, since it is an arena of social relations (Kocovic, 2017). Sesic notes that the cultural development *occurs as the consequence of the interactions of different cultures, economic prosperity, technological development, social-political system etc*. (Dragicevic, Sesic 2002). Jessop notes that *the revenge of the 'real economy' can be seen in the continuing (as of mid-2015) liquidity, credit, and financial crises and in their role in forcibly reimposing the unity of the circuits of capital by deflating the associated bubbles* (Jessop, 2016). Also in too many terms, a globalized world brought the topic of the State in a real great depression state. Jessop notes that *the crisis of neo-liberalism shows that the national state generally remains the addressee of last resort in appeals to resolve economic, political, and social problems*. Explaining previous, author says *that neo-liberalism has undermined the territorial and temporal sovereignty of states and their capacity to resolve these crises*, and that national states are not in power to coordinate interests at the international forums such as the NAFTA, the European Union, the G8, the G20, the IMF etc. (Jessop, 2016).

In terms of our previous research findings of silk and silk production, four most important findings should be taken into account in creating system solution for modelling silk revitalization in order to achieve sustainable development:

1. Silk and silk production represents a combination of *exogenous and endogenous knowledge* (see also Djukic 2017). To be clearer silk as a product of sericulture is *a combination of exogenous and endogenous knowledge*, as a practice(s) and a work activity. This can be understood through the fact that the silk production as an (economic and cultural) activity *combines traditional and imported knowledge in the processes and management practices (…)* Moreover, *the organization of sericulture work assumed linking of agriculture and textile industry*, or from labour perspective farmers and workers, where mentioned represented a link in a total chain of values in the process of silk production (Kocovic, Aleksic,

Markovic 2017). In some (silk) production cases labour was elastic working in agriculture or industrial departments but in constant touch*;*

2. Silk and silk production is *dissonant heritage (see also Sesic, Rogac 2014)*. This means that *interpretations of dissonant heritage are tightly influenced by cultural memories and identities of interpreters. The experiences of the present are largely based on specific knowledge of the past - thus the ways of experiencing the present are influenced by different perceptions of the past with which it can be connected(...) all the heritage is a contemporary interpretation shaped by narratives of history(...) (Kocovic, Aleksic, Markovic 2017, Sesic, Rogac 2014);*
3. Silk and silk production had a strong *social component* for the involved people in process (in case of Serbia and Calabria case), that makes it relevant phenomenon for (re) shaping into cultural-economic good by contribution of social and cultural entrepreneurship;
4. Silk and silk production represented the *clean industry* that makes decent argument for silk / sericulture re-start in the name of sustainable development (Kocovic, Aleksic, Markovic, 2017).

Previous findings let us understand that silk and silk production allowed the creation of social, financial and cultural linkages between urban and rural territories and people. Seeing it as dissonant heritage helps us in the creation of narratives for new management solutions for responsible forms of alternative tourism that could contribute with entrepreneurship forms to a sustainable revitalization and reshape of silk. This is important (and dangerously indicative) since we found out that people from countries with a long tradition in the silk production (the case of Calabria and Serbia) seem to have lost their collective memory about it, so the reality is almost lost knowledge about silk and silk production. Strong social component in our both research, previous example of Serbia / The kingdom of Yugoslavia and Calabria showed that sericulture as an activity could be understood as a *social entrepreneurship* in today's language that allowed additional money for involved people that in all its phases represented form of *clean industry*.

Speaking in terms of post-millennium *17 Sustainable Development Goals and its 169 targets, these* are pointed strongly to the importance and recognition for achieving human rights, gender equality and the empowerment of all women and girls. Silk and sericulture in its essence represent the base for achieving all three dimensions of sustainable development: the economic, cultural-social and environmental. Although the revitalization of sericulture in Serbia represents implicit support for all 17 post-millennium goals of sustainable development, explicitly and specifically it contributes to the 14 following goals: *Goal 1 ; Goal 2*

; Goal 3 ; Goal 4 ; Goal 5 ; Goal 8 ; Goal 9 ; Goal 10 because its international context; Goal 11 ; Goal 12 ; Goal 13 because it is clean industry; Goal 15 because it can promote and protect environment; Goal 16 because it is highly inclusive activity; Goal 17 because it has international character that implies global partnerships (UN General Assembly Agenda 2015).

Taking into account the previously given, new models and solutions in order to make silk and sericulture as cultural-economic good (specified *by heritage, tradition, identity etc) should go into few possible directions:*

1) Searching for opportunities and support of (sustainable) development should be based on real resources (commons: natural, cultural, and human)
2) Such political economy that places the issues of long term survival of real resources ahead of the consolidation and capital growth (support disciplines: Ecology economics, Cultural political economy)
3) Direction where the management of real resources, as commons, is treated in more community inclusive manner (see: Elinor Ostrom views on governing commons also Social and Cultural entrepreneurship theories).
4) New forms of participatory governance, that will enable peaceful connection between people, planet and prosperity as most important post-millennia actors and goals (see more: Kocovic, Djukic (2015), Kocovic, Djukic, Vicentijevic (2016), Kocovic, 2017).

In close line with the proposed modelling for silk and sericulture revitalization in Serbia, three examples from Italy - Calabria region could represent cases for blueprinting. Three initiatives happened within municipalities: Mendicino, San Floro and Acri. Common to all of three initiatives is that they represent partnerships between the civil sector and the state, which were later recognized and supported by EU funds.

Mendicino municipality still has strong marks related to silk. Namely, on the building of the municipality, there is an integrated sculpture cocoon of silk bug – as a municipality brand and clear identity. There is a museum which is constantly open, with traditional basic sericulture equipment. In this municipality, silk production is still happening on a small scale, by several old women who preserved the tradition and knowledge of silk processing and breeding silk bugs. Sericulture lives through women's entrepreneurship at the level of Mendicino municipality.

San Floro example is most interested. This project is initiated twenty years ago, by its Major. He recognized the importance of revitalization of silk production that was very important in this municipality area. Initial support was done by the municipality through planting 3000 mulberry trees, which are necessary for silk

bug breeding. This was a long-term project, first supported by the municipality. After the retired mayor, the new generation of young people from the municipality continued to work on the project. They organized the activities through starting the museum, workshops for the production of silk bugs and cocoons, production of scarves and silk jewellery, production of secondary products – mulberry jam, mulberry liquor, but also organized tours and visits to these production places for schools and tourists. Year-by-year the visits growth have increased a few hundred times. This project is most sustainable because it is depended on three young people that are highly motivated, educated and using silk narratives to talk stories around silk, with cultural and economic sustainable components. This project represents optimal mix of cultural and creative tourism and entrepreneurship that led to the synergy and added values.

Acri municipality is an example of cooperative where the silk production is taking place on a traditional old craft level. They had an expert who had the knowledge about silk production, and they started this production, workshops and courses in order to contribute and help vulnerable groups by their inclusion into processes and also other forms of social assistance.

What we can conclude with regard to the mentioned examples and restoration of silk production is that it is always small scale, it is possible only in places with real history and silk tradition, and last but maybe most important that in all three cases SMEs aspect is a key element. Moreover, as the contribution to sustainable development, we recognize responsible forms of (social, creative and cultural, women's) entrepreneurship and tourism, which in combination generate added values.

5. CONSLUSION

In terms of world's textile markets and its development, we can conclude that proto-industrial phase was a very important step for further industrialization. Previous meant that countries which were following each other in the textile development and international trade in proto-industrial phase, had very good start position for further industrialization because this phase represented the first accumulation of all the necessary conditions for further industrialization. We have shown by the elaboration of many world's examples how the global textile trade looked like because that allowed understanding the importance that textile trade had as an engine of growth in the proto-industrial phase.

Although the silk production in the Kingdom of Yugoslavia in 1928 was at the third place in Europe with high-quality types of cocoons, due the good weather

conditions that contributed well to sericulture development, there was not a single municipality in Vojvodina (North of Serbia), which has not been breeding silkworm ,also it is notable that Yugoslavia already had delayed its participation in the process of building textile and silk (proto)industry in comparison to the other proto-industrial actors (since others started from a few thousand to the few hundred years earlier with sericulture).

When talking about significance importance and meaning of silk, we can observe it as multi-layered phenomena that were imported (from Asia), which brought knowledge that was shaped many times during its travel. Namely, silk can be seen as a prestigious textile, also as a know-how product, as well as a combination of added knowledge (from different total economic branches) during its travelling along the silk roads from Eastern to the Western World parts.

In order to highlight the importance of silk and sericulture revitalization and its modelling, we mentioned four most important findings from our previous researches. First of all, silk as a product of sericulture represents a *combination of exogenous and endogenous knowledge*, as a practice(s) and a work activity. Sericulture in Serbian case was hampered mostly by the fact that two Ministries were formally in charge of this industry. Ministry for agriculture and water (MAW) was responsible (through body Central silk management) for the part related to the production of mulberry trees and purchase of cocoons from producers, where Ministry of trade and industry (MTI), was responsible (through body Public Silk Factories) for the further industrial processing and sale of the final product. Main challenges arose because of the fact that necessary determination of value for cocoon in one ministry (MAW) represented input price information for the final product in another ministry (MTI). This led to the silk international trade without having full balance information, and questionable calculated final prices. Moreover, the inability to complete the process of monitoring the production cycle *led to the lower levels of total output than planned (…) Costs of production could not be reduced in time, which put state and producers always in the position of material loss. The Council of Ministers of all government ministries, along with two competent for several years have been discussed the possible directions until 1924 when sericulture got unified management under the MTI.* Another challenge for sericulture, perceived by the Minister (MTI) was reflected in the fact that in certain areas sericulture was hampered by concessions operations (due holding a monopoly in the purchase in some parts of the country and dealing with market speculation on internal, but also external trade). The concessions were engaged in foreign trade. As private citizens, they were not interested in the product and greater social benefits from the Yugoslav silk. They were led by personal benefits, selling the state-made silk unmarked claiming that it was produced in Italy or

Hungary on the silk markets abroad. After the unification of sericulture industry under one MTI, Kingdom of Yugoslavia started to export silk very successfully on international markets mostly to Lyon, Milan and Zurich. In some cases such as Japan case, *it is the notable demarcation of the agricultural and industrial regions* through the combination of employment in the terms of labour structure that combined both aspects). Previous also means that the silk and silk production allowed the creation of (social, financial and cultural) linkages between urban and rural territories or, it was the bridgehead for people from the rural and urban areas that also represent a combination of exogenous and endogenous in terms of departments, but also this finding is support for our finding that *sericulture had strong social component*.

Another important conclusion of this paper is that the *silk carries the meaning and the significance of dissonant heritage*. We came to the conclusion based on our field research that people from countries with a long tradition in the silk production seem to have lost their collective memory about processes around silk and its existence. This is even more critical because it happened in a typical area of silk production, where the result is collectively lost memory in the present. Losing collective memory is dangerous because it implies the loss of culture and identity (Kocovic, Markovic, De Santo 2017).

The third important conclusion is related *to the strong sericulture social component*. The example of Serbia has shown that sericulture as an activity could be understood as a social entrepreneurship in today's language that allowed additional money for involved people. In case of Calabria, it meant surplus or first capital accumulation for landless people. In both cases - vulnerable groups from an agricultural area that was the poorest population benefited directly from silk production. More different world's examples could strengthen previous conclusion (such as Colonial Spanish America and Japan case) that were characterized by stronger involvement of women in total processes, peasant producers, small-scale production with stronger partnerships etc.

The last but not the least universal finding is supported by the fact that *everything around silk is clean and sustainable*, that makes it clean and desirable industry. Moreover, this means that the possibility of re-innovation, re-start, through alternative touristic narratives, new forms of a creative and cultural economy could be very important for silk – as a multi-layered heritage.

In the third part we pointed out the importance of silk and sericulture revitalization with arguments that are in line with 17 sustainable development goals, and desirable steps to include. Calabria examples we gave that are related to restoration

of silk production enabled us bringing more conclusions and arguments about silk revitalization in Serbia. In mentioned examples silk production is always small scale, it is possible only in places with real history and silk tradition, and last but maybe most important that in all three cases SMEs aspect is key element. Moreover, as a contribution to sustainable development, we recognize responsible forms of (social, creative and cultural, women's) entrepreneurship and tourism, which in combination generate added values.

Based on theory, field research, international sustainable development frame, and our previous findings allowed us to give the final conclusion that shaping tradition into cultural-economic goods (knowledge, heritage, real resource) is desirable and possible in case of silk and silk production in Serbia. Moreover, it is very important because it represents strong support for sustainable development in general.

ACKNOWLEDGEMENT

This research is financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, research projects no. III-47009 and no. OI-179015.

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SKILLS DEVELOPMENT AND SUSTAINABLE EMPLOYMENT DURING TRANSITION IN SERBIA

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Abstract: *The objective of this paper is to assess the process of matching the skills available by the workforce and the skills demanded by the employers in the Serbian labour market. A skill mismatch problem is mainly caused by the structural unemployment. The main causes of skills mismatches are the unfavourable structure of the workforce and slow adjustment capacities of the education and training institutions, on the supply side. On the demand side, skills mismatches arise due to inability of the employers to develop more complex tasks and the low level of the companies' training intentions. Unfavourable structure of skills may affect both job candidates, policy makers, and the employers in a way that it prolongs the time spent in job searching, induces the increase in social expenditures, and reduces business productivity. In this paper employability skills are analysed in the context of sustainable employment and it is concluded that the Serbian labour market generates substantial skills gaps through all levels of education.*

Keywords*: employability, labour market, skills, structural unemployment.*

1. INTRODUCTION

Skills are defined as an individual's knowledge, competencies and abilities acquired during the formal education, non-formal and informal learning (Cappelli 2015; Kahn 2015). A critical concept of skills relates them directly to the job requirements. Skills vary over one's career and they are subject to different practices that indicate weak functioning of the labour market, such as skills shortages, skills gaps and skills mismatches. A skill mismatch arises when there is an imbalance 'between the qualifications and skills that individuals possess and those that are needed by the labour market' (Cedefop 2015, 27). In a similar way, skills gaps are related to the situation where 'skills' possessed by the job applicants and/or employees in companies 'are below the level required to perform a particular job', whereas skills shortages indicate the situation on the labour market when 'there are not enough job candidates of certain occupations and skills' (Cappelli 2015, 252; Cedefop 2015, 28).

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Skills development at the country level is under a strong influence of the structural change (Colombano, Krkoska 2009). The main drivers of skills development are the increasing demand of particular economic sectors, including, for instance, information and communication technologies and other services sectors, and a demographic change that influences the ageing of the workforce and an increase in the amount of obsolete skills. In a broader sense, employability depends on qualifications, knowledge, skills and attitudes (Hillage, Pollard 1998). The development of employability skills supports the concept of sustainable employment, where sustainability refers to a satisfactory level of skills utilization during the lifetime. The main objective of this paper is to examine the level of employability skills development, and in particular how the process of matching the skills available by the workforce and the skills demanded by the employers function in the Serbian labour market. The findings that relate to the supply and the demand side of skills utilization are derived by using the data of recently conducted the Labour Force Survey and the Employers Survey.

The relationship between skills and sustainable employment has become an important topic, especially in the developed economies struggling with a decline in the active population and the ageing of the workforce. Siničáková (2011) argues that labour mobility within the European Union (EU) member states increases the level of occupation-specific and transferable skills. On the other hand, it also induces skills shortages in the new member states because highly-skilled workers prefer higher wages and better working conditions that are usually offered in the old EU member states.

In the case of Serbia, however, the importance of skills for the labour market participants' employability is further associated with the high and volatile unemployment, a pronounced rate of the increase in the long-term unemployment, especially among the youth, and considerable skill mismatches. All those issues characterize the structural unemployment. For instance, in the aftermath of the economic crisis, the employers hesitate to open job vacancies what causes a time lag between the business opportunities and the real needs for workers who possess certain knowledge and skills (Ognjenović, Branković 2013a). In particular, this is a common feature of the economies that share similar paths of the transitional reforms, characterized by a weak business climate and where entrepreneurial intentions among the youth are not sufficiently developed and supported (Rajh et al. 2018). In general, the companies in Serbia have a low intention to train. However, the findings differ depending on the economic sector, region and the size of the company (Ognjenović 2015).

The Organization for Economic Co-operation and Development (OECD) member countries spend, on average, around 5.2 percent of the gross domestic product (GDP) on education, including both the public and the private sector expenditures (OECD 2016). They expect a lower level of unemployment among those with vocational upper secondary education in comparison with general secondary education, as well as among those who acquired their degrees in the higher education institutions. The Government of the Republic of Serbia in the *Strategy for the Development of Education* envisages increasing the public expenditures for education from current 4.5 to 6 percent of the GDP by 2020 (Official Gazette 2012). Also, in order to continuously improve skills of the workforce, it is envisaged that at least 7 percent of the adult population attends some lifelong learning programs. These objectives are harmonized with the employment policies included in the *National Employment Strategy for the Period 2011-2020* (Official Gazette 2011). Support to the development of skills of the workforce is covered by active labour market policy measures.

The structure of this paper is as follows. The next section describes the data and a method used in the analysis, defines concepts and provides some basic comparisons of the main indicators between Serbia and the selected countries. The second section presents the main results of the analysis and the discussion of the relevant findings, while the last section concludes the paper.

2. RESEARCH METHODS

2.1. Data and methods

Three main sources of data are used in the analysis of qualifications and skills needs in the Serbian labour market. Two data sources represent nationally representative consecutive surveys, whereas one source of information is collected for the purposes of compiling a report used to compare world economies.

In order to analyse the supply of skills and occupations in the Serbian labour market the Labour Force Survey (LFS) data are used. This is the representative source of data provided by the Statistical Office of the Republic of Serbia (SORS) at the individual level. On the other hand, an analysis of the demand for skills and occupations is carried out using the Employers Survey established by the National Employment Service (NES). A sample unit in this survey is a company selected to participate in the process of data collection.

Selection of the sample units for both surveys is based on the statistical theory of sampling. Recently conducted the 2016 LFS was realised on a total sample of 133.7 thousand individuals, including 116.4 thousand individuals older than 15 years. The Employers Survey for 2016 was conducted on a sample of 3775 companies. This survey is used since 2011 as an instrument for short-term anticipation of occupation and skill needs at the level of individual companies, economic sectors and regions. However, the main drawback of this survey is that skills needs are assessed only by the employers, whereas the information such as the usage of skills or the employers' training intentions is absent from the instrument currently in use. Therefore, the assessment of skills gaps and skills shortages based on this survey is not complete. Similar instruments are developed for the European companies (Cedefop 2015), or for the OECD countries, including the Survey of Adult Skills (Pellizzari, Anne 2017).

Both data sources for Serbia enable the comparisons through time, regions and economic sectors. However, only data aggregated at the national level were used in this analysis.

In addition, the data of the World Economic Forum (WEF) are used for the comparison of the best ranked world economies with the selected Central and Eastern European (CEE) countries in terms of the participation of knowledge-intensive jobs in the total workforce, as well as the availability of skilled workforce in the respective countries.

This analysis was carried out using analytical and empirical research methods. In particular, statistical methods for data aggregation and processing were applied, but also comparative methods and interpretation of the results for Serbia and other selected countries were used.

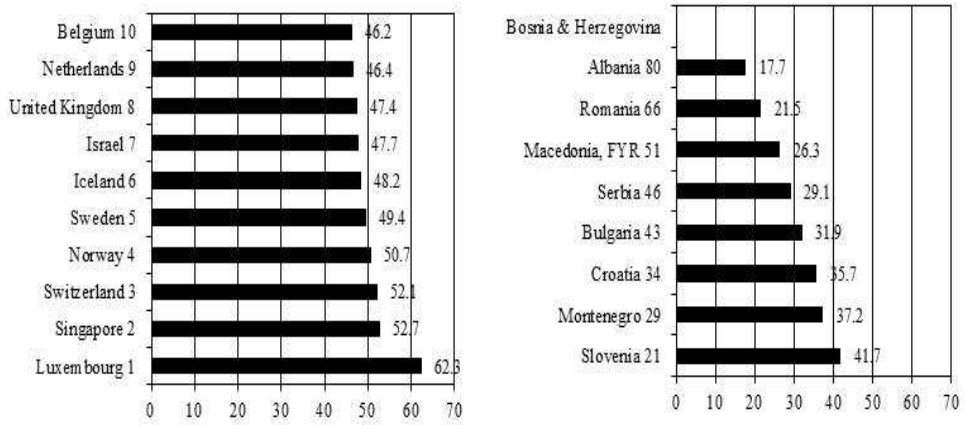
2.2. Concepts and comparisons

The demand for skills and knowledge at the level of an economy largely depends on the complexity of tasks required to be fulfilled at the workplaces in companies. In general, smaller (developed) economies have higher shares of knowledge-intensive jobs in the labour market. This can be illustrated by the WEF's *Global Information Technology Report* data when both the group of the best ranked nations (left-sided panel) and the group of selected CEE countries (right-sided panel) are observed (Baller et al. 2016). This is particularly because more pronounced diversification in production or services requires more effort directed towards innovation and knowledge. Fig. 1 shows that except for the UK the share of knowledge-intensive jobs is highly inversely correlated with the size of country

measured by the number of inhabitants. Another common feature of the best ranked countries regarding the share of knowledge-intensive jobs in the overall economy is that six out of ten are the EU countries. This is not a coincidence. The EU prioritizes incentives aiming to preserve the high level of overall productivity and activities important for the improvement of EU competitiveness and of building comparative advantages (Cedefop 2015).

Figure 1: Knowledge-Intensive Jobs as Percentage of Workforce in Selected Countries (%)

a) Ten best ranked **b) CEE countries**



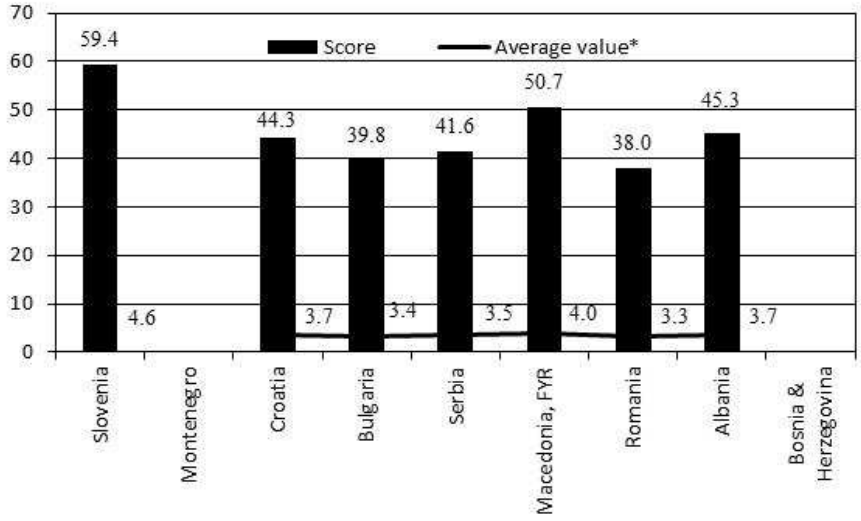
Source: Baller et al. (2016).

However, the difference between the best ranked CEE country Slovenia and the worst ranked economy of Albania is almost one quarter. This implies the existence of significant heterogeneity among the countries in this region. The WEF report does not publish data for Bosnia and Herzegovina. The data for the two first ranked countries show that the share of knowledge-intensive jobs in the economies makes up 41.7 and 37.2 percent of the total, respectively. Serbia's position is in the middle with 29.1 percent, which is 11.4 percentage points above the share for Albania and 12.6 percentage points below the share for Slovenia. On the other hand, the distance between Serbia and the best ranked world's economies is quite large, showing that the share of knowledge-intensive jobs in the Serbian labour market is almost twice lower than in the comparing countries.

Fig. 2 depicts the experts' estimates of how easy is it for the companies to find employees of adequate skills in the local labour markets on the scale from 1 (extremely difficult) to 7 (extremely easy). Based on these estimates, it seems that

the companies in Serbia are indifferent when the availability of skilled workers is considered. However, regarding comparison with other CEE countries, it can be noticed that Romania, Bulgaria and Serbia provide, on average, the lowest scores. Actually, more difficulties to find workers of required skills have reported the companies in these three countries, while, for instance, Slovenian companies experienced fewer difficulties when searching for skilled workers.

Figure 2: Availability of Skilled Employees in Selected SEE Countries



Source: Baller et al. (2016).

Note: There is no data for Bosnia and Herzegovina and Montenegro.

Based on the above argumentation it can be concluded that the Serbian labour market characterizes a shortage of the workforce of adequate skills. Given the existence of a gap between skills supply and demand, issues of sustainability and employability are of crucial importance for both the employers and employees. This will be further elaborated in the following sections.

3. RESULTS AND DISCUSSION

In this section, we use available data sources to analyse workforce skills and competencies, then how the supply matches the demand, and whether the severity of skills and knowledge gap changes in the course of transitional reforms. In particular, the topics that will be studied include workforce ageing, improvements

in educational attainment of labour market participants, employers' skills needs and occupational incidence of skills mismatches.

3.1. Workforce skills and occupations

When the total workforce is observed it can be noticed that medium-skilled labour market participants are the group that prevails among both the employed and unemployed. This group makes up 56.8 and 63.2 percent of employees and jobless persons, respectively. The second largest group are high-skilled labour market participants. This group share in the total employment is almost one quarter, while the share of high-skilled unemployed persons is 22.2 percent. A significant percentage of high-skilled among the unemployed persons is an indicator of obvious mismatch between the actual and the skills needed by the economic sectors. Serbian economy employs 18.4 percent of low-skilled workers, while this group makes up 14.4 percent of the unemployed.

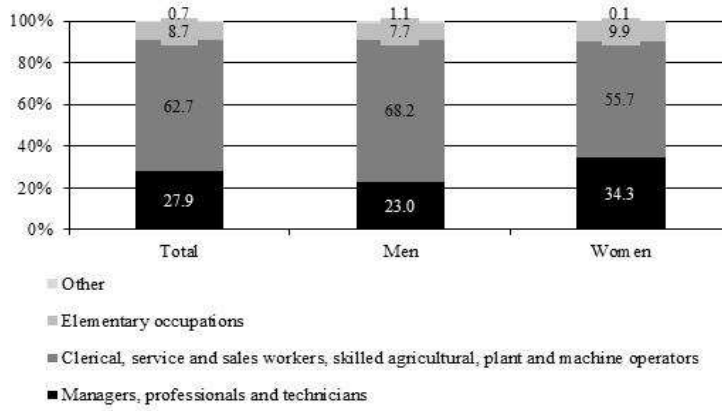
Figure 3: Level of Workforce Skills (%)

Source: RSO, LFS (2016).

Workforce skills differ by gender especially if medium- and high-skilled labour market participants are observed. As an illustration it can be noticed that both employed and unemployed men with medium-level skills make up over 60 percent of the employed and unemployed men, while this group makes up a little above one-half of the employed women. High-skilled men are much less (20.2 percent) represented among the employed than women of the same educational level (30.8

percent). In comparison with men, high-skilled unemployed women form a considerably larger portion among jobless persons.

Figure 4: Occupational Structure of Employees (%)



Source: RSO, LFS (2016).

In line with the previous elaboration is the finding that shows that the share of women in positions of managers, professionals and technicians in the organizations is 34.3 percent in the overall structure of employed women. In comparison with men, this share is more than ten percentage points higher thanks to the engagement of women in the public sector (especially in social services, health and education sectors). Proportionally, men are more represented among the occupations composed of clerical, services and sales workers, skilled agricultural workers, and plant and machine operators and assemblers than women. This is because men, compared with women, are more often employed in the sectors of agriculture, and manufacturing industry and less often among clerical and services workers which compose this broader group of occupations.

The characteristic of the labour market of most countries is the education-job mismatch. It occurs when lower-level jobs are fulfilled with high skilled job applicants due to a shortage of jobs of a required level. Analysing transition and non-transition countries, Kupets (2015) finds that in 19 out of 25 countries each fifth worker is overeducated regarding the qualifications needed for the specific job. This is further associated with the incidence of long-term unemployment and in particular with youth unemployment. Similar findings for the group of the Western Balkan countries confirm that young people who are facing first work experience need additional training in order to have more success in job matching in spite of the attained level of education (Zubović, Pavlović 2016).

3.2. Matching the supply and demand in the labour market

The Serbian labour market is characterized by large structural disparities between the supply and demand of workforce. Obvious reason lies in high unemployment. In spite of a significant drop in unemployment over the previous several years, the unemployment rate is still high and it was 15.3 percent in 2016 (SORS 2016). The unemployment is especially high among certain groups of labour market participants (including youth, women, and minorities) and the main cause is its structural character (Ognjenović 2015). Persistency of structural unemployment is the characteristic of all transition countries due in particular to rapid technological change and unreformed education and training system that cannot adequately respond to the labour market needs and inevitably induce skill mismatches (Bartlett 2013). In line with this are the results provided by Colombano and Krkoska (2009) for CEE countries that confirm that the training conducted at the company level cannot compensate for a weak level of skills in the country induced by the inefficiency of the education system. Their findings suggest that in-company training is highly positively correlated with the country level of skills development. In other words, the companies' intent to train is more pronounced in countries where the workforce has higher level of skills.

Table 1: Occupational and Skill Level of Workforce (%)

Occupational group	Unemployed			Employed		
	Educational attainment			Educational attainment		
	Low-Skilled	Medium-skilled	High-skilled	Low-skilled	Medium-skilled	High-skilled
Managers	0.0	1.6	4.7	0.2	2.2	8.5
Professionals	0.0	0.8	32.5	0.0	2.0	48.4
Technicians and Associate Professionals	0.0	8.6	18.9	0.0	12.2	18.0
Clerical Support Workers	0.0	8.4	12.9	0.9	8.2	7.8
Services and Sales Workers	13.5	33.8	20.3	6.4	21.5	7.6
Skilled Agricultural, Forestry and Fishery Workers	0.0	0.6	0.0	58.2	15.5	3.2
Craft and Related Trade Workers	20.4	18.1	4.2	7.9	16.9	2.6
Plant and Machine Operators, and Assemblers	13.5	10.7	2.0	7.0	12.3	1.9
Elementary Occupations	52.7	17.4	4.4	19.3	8.5	1.2
Armed Forces Occupations	0.0	0.0	0.0	0.0	0.8	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: RSO, LFS (2016).

Note: Occupations for unemployed persons are available only for those who had some work experience during the previous eight years.

When the unemployment is high, lack of occupation-specific skills may leave less choice to job applicants leading them to accept the lower-level jobs as it was previously elaborated. When the educational attainment of the unemployed is compared with the occupational choice, Table 1 shows that besides elementary occupations, low-skilled unemployed persons had previous work experience as services and sales workers, craft and related trade workers and plant and machine operators, and assemblers. Among the participants with the low level of education, the largest gap between the unemployed and employed is revealed in the group of elementary occupations. Likewise, the largest discrepancy in the labour market status of medium-skilled participants is identified among services and sales workers, craft and related trade workers and elementary occupations, while high-skilled unemployed persons experienced more difficulties to find employment if they had previous work experience as clerical support workers and services and sales workers. On the other hand, managers, professionals and technicians and associate professionals compose three quarters of high-skilled employees, while those three occupational groups make up more than a half of the unemployed pointing to the obvious lack of necessary skills.

The general conclusion is that the occupational choice at the workplace does not necessary follow the educational attainment of an individual. This is because someone may accept a job from necessity even if it is of a lower level than expected or because someone may attend the training not necessary certified and acquire some occupation-specific skills that moved him/her to a higher professional level.

3.3. Qualifications, knowledge and skills gaps

In general, low level of investment in training, information gaps and low mobility in the labour market are the factors which may cause skill shortages (Cedefop 2010). But, to what extent the ageing of the workforce influences skill shortages? A Cedefop study shows that the workforce ageing together with skills obsolescence causes skills gaps and skills shortages especially if reorganization or restructuring of the companies and economic sectors leads to the loss of specific skills (Cedefop 2010). Table 2 depicts two different paths of the ageing of the workforce in the Serbian labour market. The share of the young population (15-29 years of age) in the workforce decreased from 23.0 to 18.4 percent in the period 2004-2016, while the share of the prime age population and older workers (30-64 years of age) increased by 4.6 percentage points amounting to 81.6 percent in 2016. Such dynamics induce a drop in these two subpopulations ratio confirming the ageing of the workforce. The ageing also has diverse effects on the employment and unemployment of the two groups of participants showing a declining trend of the

youth share and an upward trend of the prime age and older workers in the respective contingents of the workforce.

Table 2: Ageing of Workforce

Age group	2004			2008			2012			2016		
	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed
Youth (15-29 years), in %	23.0	18.1	43.5	20.5	17.1	40.8	19.2	14.7	33.0	18.4	15.4	34.4
Prime and older (30-64 years), in %	77.0	81.9	56.5	79.5	82.9	59.2	80.8	85.3	67.0	81.6	84.6	65.6
Ratio (15-29) to (30-64)	0.30	0.22	0.77	0.26	0.21	0.69	0.24	0.17	0.49	0.23	0.18	0.52

Source: RSO, LFS (2004, 2008, 2012, 2016).

The ageing of the population and entry of the new cohorts of young people in the labour market changes the educational structure of the workforce. New generations of labour market participants have a better educational background – more graduates enter the labour market each year – but they do not necessarily have a greater chance of finding a job that matches their level of education. A comparison of the workforce education structure in the year 2004 and 2016 shows that individuals with low qualifications exited the labour market faster than those who possessed medium-level qualifications. Based on the analysis of the data in Table 3, it can be concluded that a drop in the share of individuals with low qualifications was gradually replaced by those with high qualifications, whereas the share of medium-skilled labour market participants was stable. However, a significant share of the unemployed – more than one fifth – with tertiary education is a reliable indicator of a skill gap or an individual's choice of non-perspective occupations. Some comparative studies show that individuals with medium-level qualifications are the main source of the workforce surpluses in Serbia and Croatia, whereas the labour markets of Macedonia, FYR and Montenegro suffer from the surplus workforce with low qualifications. When disaggregated educational levels are observed, for instance, data for Croatia revealed that skills shortages are characteristic of individuals with tertiary and secondary technical education. This can be considered as a common feature for most of the CEE countries (Ognjenović, Branković 2013b).

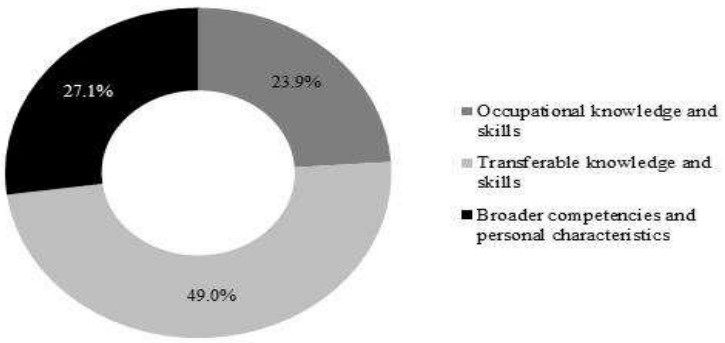
Table 3: Educational Attainment of Workforce by Years (%)

Educational attainment	2004			2008			2012			2016		
	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed	Workforce	Employed	Unemployed
Low-skilled	26.7	27.8	22.0	25.3	26.0	20.3	20.3	20.6	19.1	17.8	18.4	14.5
Medium-skilled	57.0	54.7	67.2	57.3	55.6	68.4	59.1	56.9	66.3	57.8	56.8	63.2
High-skilled	16.3	17.6	10.8	17.4	18.4	11.2	20.6	22.5	14.6	24.4	24.8	22.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: RSO, LFS (2004, 2008, 2012, 2016).

Apprenticeship programmes are especially important for lower and medium-level occupations. In particular, they can support the transition from school to work and help young employees' to gain first work experience. Usually, apprenticeship trainings are organized through on-the-job and/or classroom learning. In the developed countries apprenticeship opportunities are mostly provided by the employers, but also publicly supported programs are available. An analysis conducted for the OECD countries shows that the incidence of apprenticeship programmes varies, covering, for instance, four percent of the workforce in Germany and barely 0.3 percent in the US (Lerman 2017). In Serbia, apprenticeship programs are provided as a part of employment plans at different administrative levels. Certain medium and high level education occupations are eligible for these programs.

Figure 5: Employers' Skills Needs



Source: NES (2016).

In the Serbian labour market, occupation-specific knowledge and skills form less than one quarter of all the skills required by the employers as shown by recent survey data (Fig. 5). Based on the Employers Survey, short-term anticipation of future needs for skills and occupations is collected by the economic sectors and regions. Transferable knowledge and skills are much more needed – the employers opted for these skills in almost 50 percent of cases. Broader competencies and personal characteristics are perceived by the employers as more important than occupation-specific knowledge and skills. These findings are in line with some previous studies that show that the employers in the CEE countries pay more attention to transferable knowledge and skills, where foreign languages and knowledge of information and communication technologies occupy a special place (Ognjenović, Branković 2013b).

Table 4 presents the occupational incidence of skill mismatches. Two groups of occupations are identified with the highest shortages, gaps and the lack of work experience – high-skilled professionals and medium-skilled services and sales workers. The employers perceived plant and machine operators and assemblers as the third ranked occupational group with skill shortages. Likewise, technicians and associate professionals are the occupational group that equally lacks skills or cannot be adequately matched to job vacancies due to working conditions or lack of previous work experience.

Table 4: Incidence of Skill Mismatch by Occupation (%)

Occupational group	Due to		
	Skills shortage	Skills gap	Working conditions, lack of experience and the like
Managers	0.4	1.4	1.3
Professionals	21.5	15.5	16.5
Technicians and Associate Professionals	3.4	6.8	8.6
Clerical Support Workers	1.5	2.9	3.8
Services and Sales Workers	59.9	56.5	49.3
Skilled Agricultural, Forestry and Fishery Workers	0.2	0.0	0.1
Craft and Related Trade Workers	4.7	6.1	7.9
Plant and Machine Operators, and Assemblers	7.0	4.0	4.7
Elementary Occupations	1.5	6.1	7.8
Others	0.0	0.8	0.0
Total	100.0	100.0	100.0

Source: NES (2016).

The level of overall productivity of an economy largely depends on the effectiveness of business climate reforms. In the case of transition and developing countries, Brixiová and Égert (2017) show that the policy reform in this area will affect the creation of sustainable businesses if they are accompanied by the well-functioning education and training system that leads to narrowing skill gaps. This will increase employability prospects of the workforce defined in terms of Hillage and Pollard (1998) as capability to get the first job, maintain employment and move to a new job if necessary. The concept of employability is tightly connected to the legal forms of employment relationships between the employer and employee and it can stipulate continues employment, in particular, if the employers have tools to assess knowledge, skills and abilities of job candidates (Cappelli, Keller 2013). Following this discussion it can be concluded that the instruments for short- and medium-term projections of occupations and skills should be in place in an economy so that policy makers and other relevant stakeholders gain insight into skills needs.

4. CONCLUSION

Particular attention in this paper has been paid to the analysis of employability skills development and how the process of matching the skills available by the workforce and the skills demanded by the employers function in the Serbian labour market. The analysis presented in this paper provides an assessment of skills gaps and skills shortages at the level of education and main occupational groups. In order to analyse the supply of skills and occupations in the Serbian labour market the Labour Force Survey data were used for selected years from 2004 to 2016, whereas an analysis of the demand for skills and occupations was carried out using the Employers Survey for 2016.

The main findings of the analysis can be summarized as follows:

- Regarding international comparison, Serbia fits among those countries of the CEE region with the average share of knowledge-intensive jobs in the overall economy. This implies that no significant improvement in productivity and innovation-led competitiveness can be expected in the short-term.

- Most challenges are related to the imbalances in the supply and demand of the workforce with medium qualifications, implying that skills gaps are mainly identified among transferable knowledge and skills in accordance with job description. Job matching policies of both those who are feeding the supply of skills and those searching for skilled workers should be focused on narrowing these gaps.

When the occupational incidence of a skill mismatch is considered, the analysis revealed that the occupational group that comprises high-skilled professionals and medium-skilled services and sales workers is the group with the highest skills shortages, skills gaps and the lack of work experience of job applicants to adequately respond to job requirements. On the other hand, technicians and associate professionals cannot be adequately matched to job vacancies due to working conditions offered by the employers or the lack of previous work experience.

There is a limited number of studies that analyse skills related issues in the Serbian labour market. The intention of this paper is to feel the existing gap and provide some preliminary findings to support policies associated with the enchantment of labour market participants' employability. Future research should be focused more on a quantitative analysis that would examine to what extent the shortage of skills causes labour market frictions, on the one hand, and what are the potential implications of skills gaps on the social and economic policy, on the other.

ACKNOWLEDGEMENT

This research is financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, research projects no. III-47009 and no. OI-179015.

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