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ECONOMIC SYSTEM OF EUROPEAN UNION AND ACCESSION OF THE BOSNIA & HERZEGOVINA

Research monograph

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INTRODUCTION

The Research monograph is result of broad international cooperation among researchers and professors from thirteen Universities from the EU member states and from a number of other European states. Such broad international research cooperation gives by itself the monograph specific high value and rather interesting exclusivity. The major characteristic of the publication is the broad scientific approach used in the papers published. The research results are focusing on the number of specific evaluations of a wide range of impacts that are created by the process of the EU accession. Specific interest in research and in the published papers often is specifically related to the accession process and to the impacts that are typical for Bosnia and Herzegovina.

The research monograph collects more than 20 research papers written by more than forty authors. The fact that most of the papers collected in the publication present a collective work of two or more authors creates additional quality of the publication. The publication proves that beside a broad international institutional cooperation as well the broad research cooperation was developed among a number of individual researchers who succeeded to formulate the joint research results for publishing.

The accession of the new states to the EU is based on fulfilling the specific EU enlargement criteria accepted by the Copenhagen European Council in 1993 and strengthened by the Madrid European Council in 1995. The accession process creates substantial changes in the economies and societies, including the business sector functioning and its competitive environment. A number of research papers published in the monograph are based on analyzing the impacts of the changes imposed on all mentioned levels through the process of the EU accession. Papers cover topics from more general impacts like adjustment of the banking sector, further some general assessment of the adequate analytical methods to be use for accession impacts evaluation, and further are related to the more specific topics like data protection and privacy rules implementation. Papers are often concerned by impacts and changes in the area of competitiveness, sometimes in connection with the catching up results and potentials of the accessing countries.

The accession process to the EU has two matching sides, which affect substantially each other. On one side is the accessing country with its all necessary changes and adjustments. On the other side is the EU with its accession criteria, and evaluating the candidate countries' progress. And further on that side is the EU with its functioning results more or less effective in the process of coping with its own functioning and performance problems. Often that part is related to the some approaches and reactions which are contained or are developed from the so called "EU enlargement fatigue". Especially some accessing countries in the region of the Western Balkan after many years

of the accession activities sometimes might feel that the actual interest of the EU for the enlargement is rather limited. On the both sides of the accession equitation more and more often people and researcher ask the questions about the actual benefits and disadvantages of the EU membership. Such questions are increasingly asked especially in the period of protruding sovereign debt crisis and in relation with broader financial and economic crisis that is seen in the EU and in the accessing countries. The well-known fact that the distributing of economic benefits created by the economic integration is highly uneven among the EU member states is getting more and more observed and challenged during the not so prosperous EU development in the last few years. In the accessing countries, with their long periods stretching over many years of preparations and adjustments, the evaluation of the levels of the expected membership benefits or disadvantages are getting more and more included into different reasoning and studies. The cases of some European states that are not EU members, but still have close economic relations with the EU, including the benefits of the open access to the EU internal market, might stimulate creation of some new ideas or concepts for the future end result of the present accession activities of the Western Balkan countries. Within such conceptual reasoning about the future relations the final EU membership might develop into not so highly appreciated option for some of the Western Balkan accessing countries. Partially dilemmas about the future reactions in the scope of the accession process final results are to some extend find in specific parts of some published research results.

It is important to mention that this monograph is part of the Project that has been supported in part by the Ministry of Education, Science and Sport, under the project number 081-0811403-140 and 13.02.1.2.03.

In the name of the authors and participating institutions we hope that the research results published in the book will be appreciated and in different aspects useful. The research results published might hopefully be accepted as a positive contribution in developing improved understanding of the accession process together with the strengthening of the relevancy of the future EU membership realization.

Vitez, September 2014

**Vinko Kandžija
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PART I
THEORY AND PRACTICE OF
ECONOMIC INTEGRATION

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BENEFITS AND PROBLEMS OF THE EU AND ITS FUTURE

ABSTRACT

Different Treaties among sovereign states create forms of economic, political and of other cooperation. There are a growing number of such Treaties in the World today. The worldwide increasing number of cooperation treaties shows the strong interests and needs of the member states to induce additional benefits and economic growth by the intensified cooperation based on opening of their economies to the partners' competition. According to the WTO terminology such cooperation Treatise are called Regional Trade Agreements (RTAs). On June 2014 the RTAs worldwide figure reached a number of 379 active treaties, counting goods, services and accessions to the treaties separately. Among some the oldest and most complex RTAs in the World is the European Union (EU). After decades of successful economic and other cooperation among the member states creating benefits and growth within the ever enlarging group, the EU in the last five years or so faces some development and stability difficulties. Part of the reasons for difficulties is among the others related to the inevitable uneven distribution of the integration benefits among the member states of the EU. The article reflects on some specific economic and other efficiency and stability problems that further accent effects of the uneven economic benefits distribution among the integrated states of the EU in the last couple of years. The problems assessments offer background for some new concepts potentially suitable for the future EU's and member states policies changes. Such changes might and should help the EU to regain the past ability of creating benefits and increased economic growth for all societies of the member states and of the EU altogether.

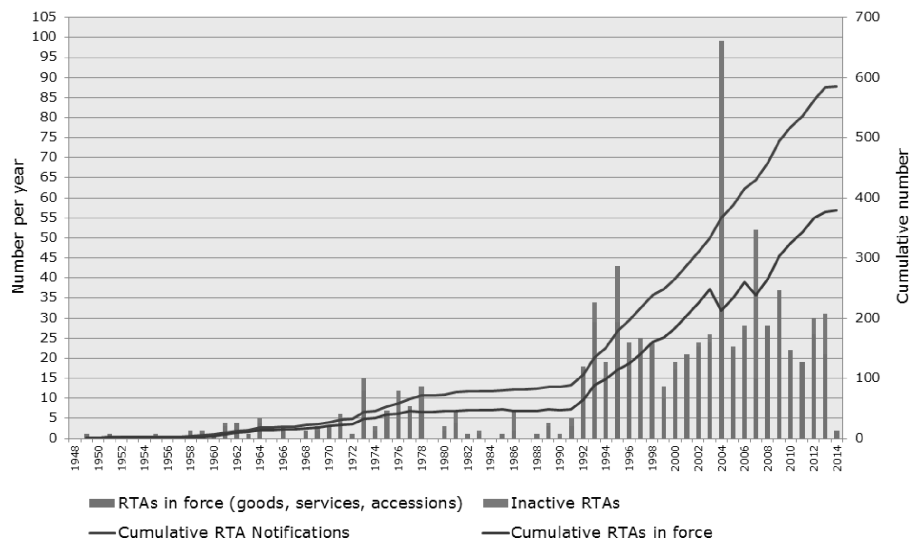
Keywords: *EU, economic benefits, distribution of benefits, economic openness, unemployment, economic growth, competition, investments.*

JEL classification: *A1, O1*

1. INTRODUCTION

The WTO data, which has started to expand especially after the process of economic globalisation, show that increasing number of states seeks chances to create higher levels of economic and other benefits to the societies through signing different forms of interstate Treaties. In general such treaties create higher openness of the external trade and of the national economies to the partners' competition. Technological progress of the last few decades on global level, which of the kind had never before been seen in the human history, created increasing need for large open markets. Such markets can absorb fast and faster all the increasing numbers and quantities of products which are created by new technologies. Investments and production of such products based on new technologies, which include the so called standard products too, could be successful only by unobstructed utilizing of the scale and scope effects. In the theory and in the practice, documented by the WTO data, a good answer to a need of creating more free access to a larger market is offered by states' Treaties introducing different forms of the Regional Trade Agreements (RTAs). (Fig. 1)

Figure 1: Evolution of Regional Trade Agreements in the world, 1948-2014



Source: http://www.wto.org/english/tratop_e/region_e/regfac_e.htm

Note: The Fig.1 shows all RTAs notified to the GATT/WTO (1948-2014), including inactive RTAs, by year of entry into force.

The period from 1990 to today shows amazing growth in the number of RTAs. It supports the idea that RTAs are or were seen as a way to better utilization of the numerous new

production, transport and innovation advantages offered by the broad and fast technology development. The growing number of RTAs influences the countries that are not part of cooperation Treaties negatively. They may react by trying to join existing RTAs – that is seen in case of the EU enlargement. They may try to create new partnerships by concluding new forms of RTA Treaties. RTA Treaties might develop into the forms of cooperation among RTAs themselves too. That is again one of the EU specifics. It is having the RTA agreement with another RTA - with EFTA. Further the EU created specific Treaty of cooperation with a part of EFTA member states by developing integration called European Economic Space. The EU the RTA treaty itself has created a number of bilateral Treaties to open trade. Such RTAs in the form of Free Trade Agreements are in force with a number of states from Mexico, Chile to S. Korea and some Mediterranean states. The mentioned processes help to explain the fast growth in the number of RTAs registered by the WTO. The states in the need for open and larger markets have beside RTAs development policy as well the option to support the multilateral – WTO/GATT based trade and cooperation efforts. Last twenty and more years it seems (Fig.1) that the market opening and enlarging process was more effective and more operational through concluding of the new RTA Treaties as by efforts and agreements based on the WTO multilateral negotiations. Some contemporary economic and business indications seen around the World suggest that the time is coming when just signing of the new Treaties to create new RTAs will no more create proper opportunities to realize additional benefits and accelerated economic growth of the member states by the opening and enlarging the market access. It is somehow understandable that RTAs with their huge present number and with all the overlapping among the member states– Mexico for example is in the two RTAs; Free trade agreement with the EU, and it is the member of the RTA named NAFTA –have started to lose their “normal” potential for benefits and growth creation. The similar decrease in the benefits and of the growth creation based on fast RTA’s expansion and its overlapping with other RTAs, is probably causing at least a part of difficulties which are accompanying the EU functioning in the last number of years. According to some recent WTO studies (http://www.wto.org/english/news_e/news14_e/rese_23apr14_e.htm) the trend of increasing number of the RTAs concluded could be soon reversed. “Current trends towards increased regionalization may be reversed, with multilateral trade relationships gaining in importance. Hypothetical mega-regionals could slow down, but not frustrate the prevalence of multilateralism. Continuing technological progress is likely to have the biggest impact on future economic developments around the globe” (Fontagné Lionel et al; 2014).

Among some the oldest and most complex RTAs in the World is the European Union (EU). The EU functioning is the result of a complex trade, economic and monetary integration Treaties. After decades of successful economic and other cooperation among the member states and the states connected by the EU by specific bilateral RTA Treaties that have been creating benefits and growth within the ever enlarging group, the EU in the last five years or so faces considerable development and stability difficulties. Part of the difficulties that are facing the EU and most of its member states is a reflection of the negative global economic and financial developments of the last years. Additionally the EU difficulties are enhanced by a number of specific internal structural and functional conditions and solutions. The EU internal specifics are related to:

- The existence and continuity of the large economic and other differences between the member states. The process of so called economic “catching up” activity oriented towards reducing economic development imbalances among the member states is slowing down or is stagnant for a number of member states in the last few years,
- The large cultural, historical and ethical differences, among the nations creating the EU integration,
- The specific structure of the EU in political and functional sense including; structure and powers of the EU institution and the rules and processes of accepting and voting for the EU legislation and Treaties’ changes.

External negative impacts, combined with internal EU specifics, affecting growth and benefits creation negatively, are together making the EU less able to create growth and benefits for all member states. The EU’s environment of the high openness of the members’ states economies to each other and even to the global market environment, with additional economic openness in the case of 18 EU members using a single currency, strengthen and enlarge the inevitable processes of increasing differentiation among the member states regarding integration’s benefits distribution.

Expected future reduction in the RTAs attractiveness for member states together with the EU difficulties typical for the developments in the last years, require adjustments in the EU’s and in the member states policies. The expected direction of changes will have to be concentrated on changing the integration’s benefits distribution patterns together with introducing concepts of simplifying and better balancing of the formal EU functioning and decision making solutions.

2. ECONOMIC INTEGRATION AND SPECIFICS OF THE BENEFITS DISTRIBUTION

Specific impacts of fast technological advancement of the last decades and some other impacts, combined with the fact that increasing number of productions turn into the category of the standardized products, created the number expansion of the worldwide RTAs. In the EU the process of RTAs number growth on global level was reflected in its enlargement and deepening processes. The enlargement process was in fact from the RTA's point of view structured into two layers. The first concerns "real" enlargements based on accessions of the new EU members. The second layer of enlargement is based on cooperation Treaties that in the nature present specific forms of RTA Treaties between the EU and countries who are not and will (in the majority of cases) not be members of the EU in the future. Both layers of RTA's Treaties that the EU is signing are similar in the sense of trade and competition opening among the signatures, but in the EU formal terminology the word "enlargement" is reserved only for the Treaties that offer a possibility of the accession into the EU membership.

There are theoretical and practical explanations for the growth of RTAs globally and for the enlargement and deepening of the integration in the EU case. A number of macroeconomic Computable General Equilibrium (CGE) models are used generally and in the EU, where specific model - QUEST III – is used, to assess the RTAs impacts on member states economies, on the sustainability and size of the economic growth. The models analyse similarly the RTAs impacts on the benefits distribution patterns among the member states or regions

(see; <ftp://ftp.zew.de/pub/zew-docs/dp/dp0414.pdf> and http://ec.europa.eu/economy_finance/research/macroeconomic_models_en.htm).

Majority of RTAs including the EU started with opening of trade in goods for the member states. Further the trade started to open among members of the RTAs for services and in some specific groupings further for capital and labour flows. In case of the EU the process was going even further by creating monetary union among a number of the EU members. All these efforts were expectedly creating economic – growth and other specific benefit which could not be realize without RTAs treaties. The fact is that starting from trade in goods and proceeding with other integration elements included into different integration treaties all participating states were gaining additional growth impacts and other benefits. At least that is what theories of trade, from classical, to neo-classical and alternative show as effects of the economic integration (see: Kumar A.; *Mednarodna ekonomika*, 1999 and Krugman Paul R. at all; 2011).

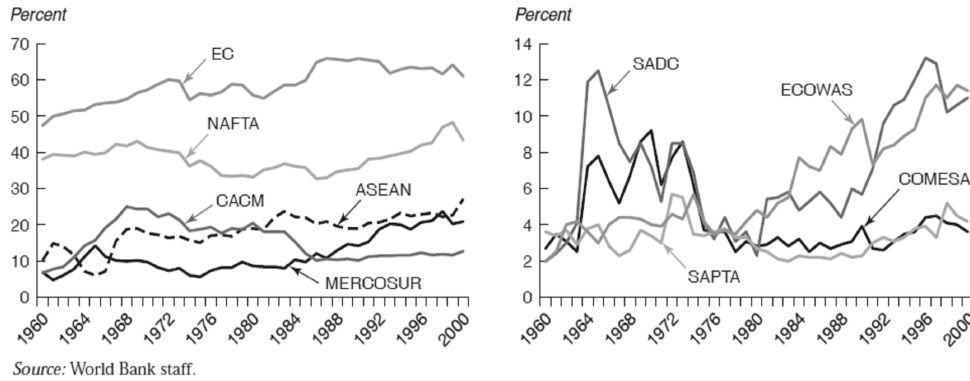
We are not going to present broad theoretical evidences for the benefits created by RTA agreements for member states based on opening of the economies to the integration's partners and supported by the increasing competition in the integration group of countries. Practical impacts and size of the expected benefits offered by different RTAs might be illustrated by the citation and data from the World Bank (WB) study. "For an RTA itself, the most important ingredient for success is low trade barriers with all global partners. Most-favored-nation (MFN; i.e., non-discriminatory) liberalization, which creates more trade, is the fastest and most efficient way to increase intraregional trade. In addition, agreements that minimize excluded products expand the scope for positive net benefits through competition and trade creation" (bolded by AK), (Regional Trade Agreements, 2005, p. 57).

The following chart (Fig. 2) shows that in most cases the trade inside the RTA agreements was growing substantially. According to the WB study in a number of RTAs growth of trade inside the integration was in a great deal induced by changes created by the integration itself (op. cit. Fig. 3.2., p. 59).

Theory and data show further that all members of the RTA could expect and in reality realize different benefits that result from the economic and other changes introduced by the RTA. The expected benefits that go to all RTA's members are;

- benefits created by integration's trade opening (more trade, more diversified trade, chipper products, increased size of the net trade benefits on individual markets and in entire economy, ...),
- benefits caused by changed competition environment (improved access to partner's markets, restructuring of the economy based on competition, potentially more effective allocation of production factors in member states and in the entire RTA group, better possibilities to utilize economics of scale and scope, ...),
- benefits that are not strictly trade or economy based (increased political stability, improved international position of a member state in the international economic and political bodies and institutions, improved safety position,...).

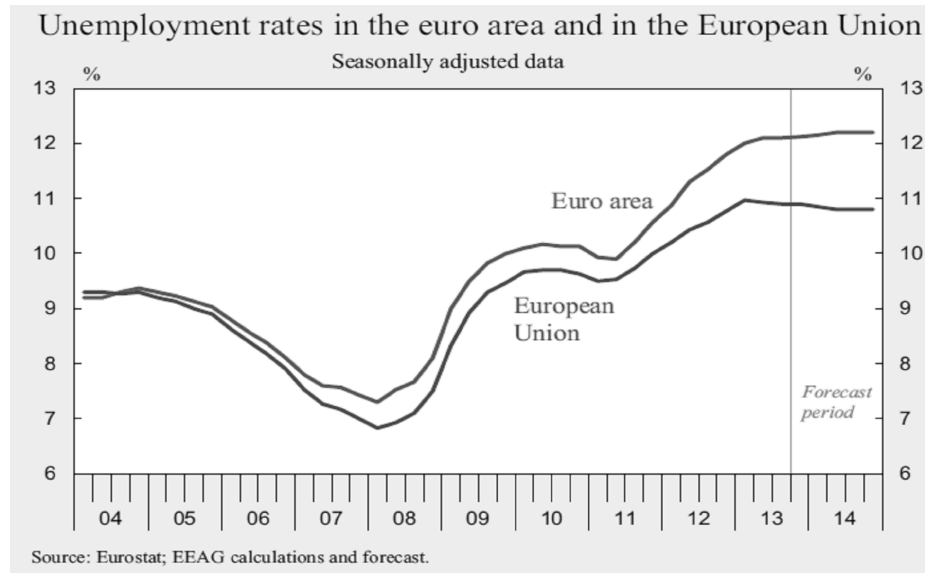
Figure 2 : Evolution of the share of intra-regional imports in total imports 1960-2000



Source; http://siteresources.worldbank.org/INTGEP2005/Resources/GEP107053_Ch03.pdf, p.58

Note; EC- stands for EU, other abbreviations are for other major RTAs around the Globe. The listed RTA's expected benefits are potentially created and distributed among all RTA's member states. The size and scope of benefits which are potentially going to all RTA's members depend on the type of the RTA implemented. The EU agreement forms one of the most complex forms of the RTA globally. It is trade based including goods and services and extended to functioning of the internal market which beside freedom of goods and services movements contains further the free movement of capital and people. For 18 members of 28 beside listed integration specific additional integration element is based on using the single currency - the €. Due to different integration environments of 18 and of the rest of the EU members the benefits (and eventual problems) of the integration agreement are distributed among member in different scope and size. To illustrate differences of the integration's impacts resulting from differences in the context of the integration agreements we can look to the following unemployment data (Fig. 3) for the entire EU and for the EU members with the €.

Figure 3: Different integration's (RTA's) rules create different integration impacts on the member states



The benefits or the problems of the integration are distributed between member states evidently differently (see Fig. 3, similar differences could be shown in the case of the EU by using different other economic indicators) based on specifics applying for the individual member state from the contend of the integration agreement.

3. NEUTRALIZATION OF THE DEVELOPMENT AND BENEFITS DISTRIBUTION DIFFERENCES

The differences in the sizes of benefits and problems distributed among the RTA member states, based on specifics of the integration agreement content are further enhanced by states' specifics and by world economy specifics. Among the generally accepted differences affecting the size of benefits or problems realized by an individual country being a member of the RTA are:

- size of the national markets,
- price and income elasticity of supply and demand on national markets,
- geographic location of a the RTA's member state,
- (dis)similarities of the economy's structure relative to the economy's structure of the other states in the integration that are opening their markets too,
- differences in the economic development levels between the observed state and other RTA's member states,
- some other differences like historic, cultural, ethical, political and other between the a member state and other RTA's member states.

All economic, political, historic, formal agreement based and other differences between the RTA's member states inevitably create different size of the benefits and problems that are potentially available for each integrating member state. In the case of the EU the described uneven distribution of integration impacts and potential dissatisfaction of individual members with the results of the integration process was recognised as early as in the initial Treaty of Rome (see: <http://www.historiasiglo20.org/europe/traroma.htm>). In the preamble, the signatories of the Treaty declare (http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties_eec_en.htm) that:

"- determined to lay the foundations of an ever closer union among the peoples of Europe, resolved to ensure the economic and social progress of their countries by common action to eliminate the barriers which divide Europe, affirming as the essential objective of their efforts the constant improvements of the living and working conditions of their peoples,

- recognizing that the removal of existing obstacles calls for concerted action in order to guarantee steady expansion, balanced trade and fair competition;
- anxious to strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less-favoured regions;
- desiring to contribute, by means of a common commercial policy, to the progressive abolition of restrictions on international trade;
- intending to confirm the solidarity which binds Europe and the overseas countries and desiring to ensure the development of their prosperity, in accordance with the principles of the Charter of the United Nations;

- resolved by thus pooling their resources to preserve and strengthen peace and liberty, and calling upon the other peoples of Europe who share their ideal to join in their efforts..."

During the EU development a number of policies and instruments were developed and implemented to help backward and less-favored regions. The EEC objectives evidently might be realized only if the distribution of economic benefits among member states and their regions wouldn't be too polarized. The EEC made two solutions to manage the potential threats based on existing or new economic and other differences among member countries:

- Certain common policies were formally enshrined in the Treaty; common agricultural policy (Articles 38 to 47), common trade policy (Articles 110 to 116) and transport policy (Articles 74 to 84), to compensate for economic differences and to secure the integration sustainable functioning,
- The Treaty promises securing the member states balanced economic development; The Article 2 among principles of the EEC states that 'through the Community, the equal, balanced and sustainable development of economy is improved...'.

The Preamble to the Treaty goes even further saying 'reduction of existing regional disproportionalities' is required (Development of regional policy).

Apart from recognizing of the development levels and benefits of integration distribution differences, in the EEC Treaty not much was said about the instruments necessary to harmonize and balance the member states development.

EU structural (regional or cohesion) policy using EU Funds to compensate for development and benefits differences, (started by formation of the EIB, European Social Fund – ESF and European Agricultural Guidance and Guarantees Fund – EAGGF in 1958), has rather limited success. The limited success can be evidenced on the fact that a number of regions are lagging behind EU averages from its beginning to today – the cases are: Greece, S. of Italy, parts of Spain, Portugal, and from 2004 most of the new members and some others. (Maps-Regional statistics).

Lacking of the effective EU instruments to deal with the different development levels and different benefits distribution within the integration of the EU was enhanced by the EU enlargements especially of 2004 and after and by the 2008 global financial & economic crisis.

4. SELECTED PERFORMANCE DIFFERENCES AMONG THE EU MEMBER STATES RELATED TO THE BENEFITS DISTRIBUTION IMPACTS

According to integration development concept stipulated in the Treaty of Rome, the Treaty should have helped the member states and their regions “**to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less-favoured regions**” (op. cit.). As could be seen from data (Maps-regional statistics) the development differences are changing but are still big and in a number of cases locational stable. That suggest that that uneven benefits distribution was not compensated enough to help in the process of reducing the development differences for many regions and after 2004 for a number of new EU member states. A number of reforms of so called regional or cohesion policy implemented by the EU Commission from nineties of last century to recently suggest that the EU still today lacs the effective instruments to deal successfully with both groups of problems creating different sizes of benefits and problems that are distribution among member states and their regions. The unbalanced economic positions and integration achievements among the member states of the EU, lead to potential dissatisfaction among the EU peoples. Part of growing dissatisfaction with the EU achievements was seen in the past through political parties changing support to the EU integration activities (Fig. 4). Recently the European parliament elections by electing a considerable number of Eurosceptic MPs, additionally show the growing concerns of member states’ population about the EU future.

Figure 4: Mean partisan positions/support towards European integration by country in 2002 and 2010



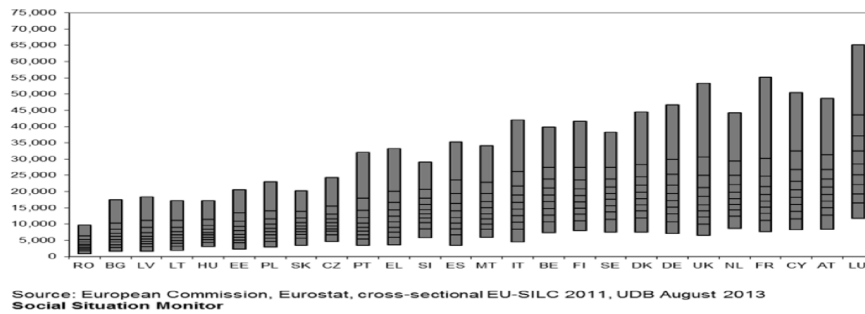
Note: Each map shows a representation of the mean partisan positions toward European integration in each country. The darker the shade of red, the more supportive of European integration parties were in each country. White means that there was no information for that country. The intensity of the red (from light to dark) corresponds to four different intervals of support: specifically the quantiles of the distribution of the mean partisan support for EU. Source: Chapel Hill Expert Survey

Source: <http://blogs.lse.ac.uk/euoppblog/2014/04/28/economic-factors-play-an-important-role-in-determining-political-parties-support-for-european-integration/>

Differences among member states including the uneven sizes of benefits distributed induce political changes in the support of the integration. They are reflected in different economic

indicators which by its different levels and structure suggest that positive impacts and eventual problems of the EU functioning in fact have not been distributed successfully among the member states. The distribution of incomes for example (Fig. 5 and 6) shows huge differences of the income levels and additionally strong variety of member states' internal income distribution. Evidently the situation is far from the concept of the balanced economic development accepted as the conceptual integration background already in the Treaty of Rome.

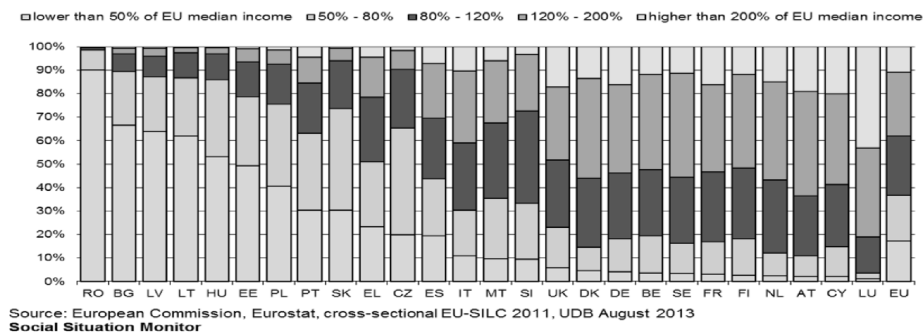
Figure 5: Distribution of incomes in the EU countries in € at PPS; income year 2010



Source; <http://ec.europa.eu/social/main.jsp?catId=1050&intPageId=1926&langId=en>

The large income distribution variety within the individual EU States and income differences between them (shown by relative height of the bars - Fig.5) show at list that idea of balanced economic development is not successfully implemented. The bars are ordered by the average equalized household income, which is lowest in the post-communist countries. The differences are in fact not reducing by the years passing.

Figure 6: The distribution of income relative to median income in the EU (EUR 14,516 in PPS) 2013; source; as for the Fig. 1

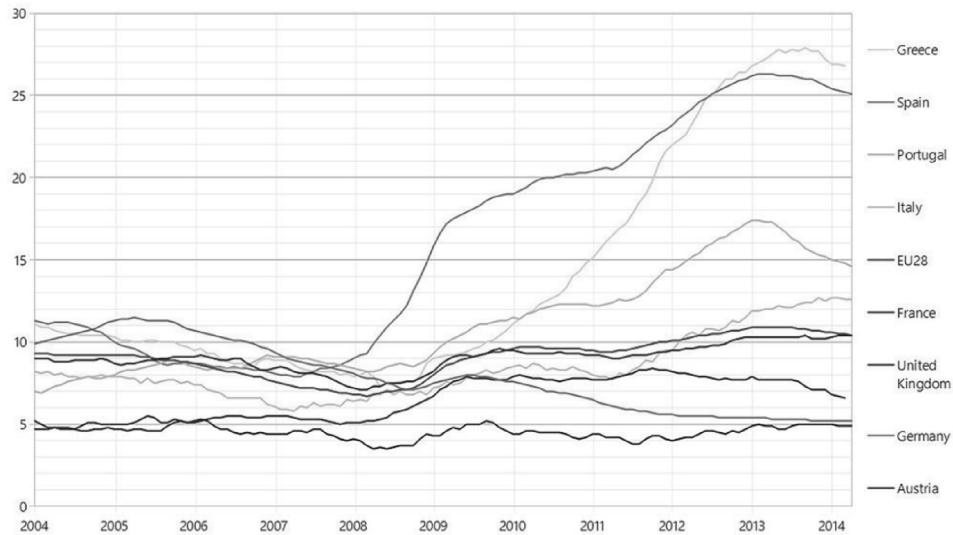


Source; <http://ec.europa.eu/social/main.jsp?catId=1050&intPageId=1926&langId=en>

Uneven incomes distribution reflects difference in the starting economic positions of individual member states together with the uneven benefits distribution; The 6 member countries have over 50% of their population below the EU average income. The 12 member countries are below EU 50% average median income. Strong differences in income levels and in the income distribution create highly differentiated national potential for consumption and growth.

Among the problems of the EU which is unevenly distributed among the member states is unemployment. It is a long standing problem formally broader analysed already by the white paper of the Commission (Growth, Competitiveness, Employment, 1993) in the period of introducing the internal market of the EU. The problem of unemployment especially in some member states was aggravated after 2008 (Fig. 7). Large differences in unemployment rates and the longevity of the problem show that for some member states the positive effects of growing competition and production factors mobility created by the EU Treaty are not in fact producing an environment that would support the effective reduction of the unemployment problem.

Figure 7: Unemployment rates in the selected EU countries and in the EU28; from 01/2004 to 04/2014



Source: http://en.wikipedia.org/wiki/Economy_of_the_European_Union

The problem of different levels of unemployment between the EU member states is just one side of the problem facing the EU for decades. The EU and especially the members of the € area are comparatively less effective in combating unemployment as some of their major partners and competitors on the global markets (Fig. 8).

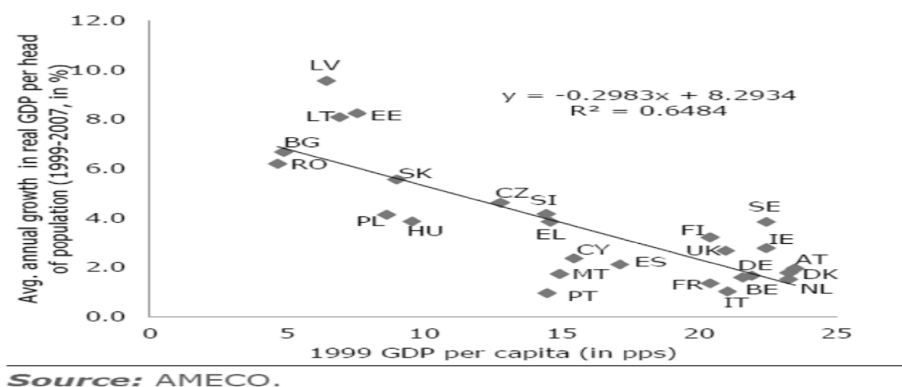
**Figure 8: Comparing the EU-Euro area unemployment rates with global partners;
2004 to 2013**



Source; 2014 EEAG Report on the European Economy, p. 20; http://www.cesifo-group.de/ifoHome/policy/EEAG-Report/Archive/EEAG_Report_2014/eeag_2014_report.html

Differences in incomes and unemployment levels are reflected further in the rates of economic growth, where some member countries are evidently not absorbing the generally expected positive impacts that should be created by the EU integration. The problem is even more obvious in the case of a number of states that are members of the euro area (Fig. 9)

Figure 9: GDP per capita levels and growth for the EU countries (1999-2007)



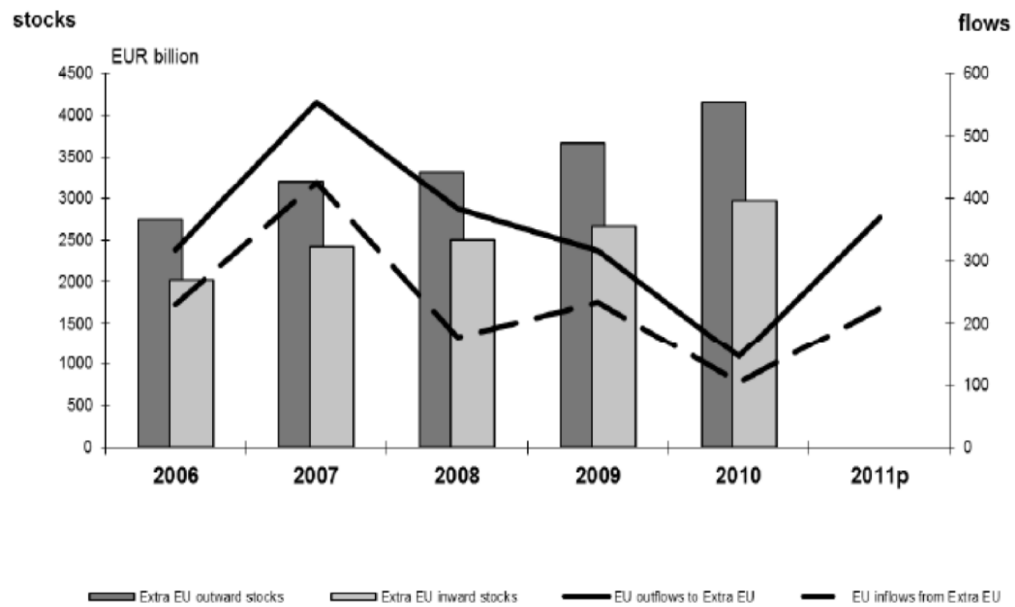
Source: AMECO.

Source;

http://ec.europa.eu/economy_finance/publications/qr_euro_area/2013/pdf/qreal_focus_en.pdf

Data in the Fig. 9 display a strong negative correlation between the level of GDP/capita at the launch of the euro (horizontal axis) and GDP growth over years 1999-2007 across EU Members. This corresponds to the beta convergence equation in the economic growth literature: countries with lower GDP/capita are expected to grow faster than others. This expectation is not always confirmed in the practice especially not in the case of a number of less developed EU member countries. Data suggest that several euro area catching-up countries grew less rapidly than their GDP per capita level in 1999 would have suggested. Such situation is related to the already mentioned fact that the sizes of expected benefits from integration are highly differently distributed among states. Low growth levels in some EU member countries, unemployment problems and problems of highly differentiated levels of the incomes might be gradually reduced or eliminated provided that free movement of capital in the EU could actually create sufficient level of the investments. More successful member states –their businesses - are having a net capital savings, which could be invested in those countries where unemployment is extremely high. Unfortunately trends in the EU show that EU is net exporters of capital, meaning that internal free capital mobility cannot reasonable support the necessary production restrictions in a number of integration member states.

Figure 10: The EU export and import of capital – the EU is for years a net capital exporter



Source: <https://www.tcd.ie/iiis/emerging-multinationals/assets/documents/Luxembourg-UnitG4-Global%20Transactions.pdf>

Net capital exports from the EU might suggest that the EU integration environment is not any more reasonably attractive and safe as used to be in the past. Net capital export to the USA is often the case which is mostly accentuated in the case of Germany. Due to size of the economic, due to its geographic position Germany was and is potentially receiving among the largest part of the integration benefits. In spite of such position Germany is one of the largest net capital exporters in the EU and further some economists predict that German economy is not so well positioned and structured as is generally proclaimed. If the signs of potential weaknesses of the German economy would be confirmed than many member states of the EU could expect increase of the income and growth problems. "The German locomotive has become Europe's liability" suggested German economist Marcel Fratzscher. He observes; „The main problem is not weak export demand or the reluctance of consumers to spend money but the fact that companies are unwilling to invest in new productive assets. Investment now accounts for a smaller portion of output in Germany than in most other industrialized countries. Company managers have long blamed the high uncertainty in the business environment as the main reason for low investment." In fact the reasons for low investment in Germany or in other EU member states are mostly based on relative limited profitability of the investments in the EU compared by the USA, China or some other countries. Professor Fratzscher thus suggests: „The most urgent challenge for German and European policy makers is to generate more investment – which would create jobs and enhance productivity, leading the way to permanent increases in household incomes. Governments should also use whatever fiscal leeway they have to boost employment, for example by cutting payroll taxes. And Europe should create a financing vehicle to give smaller companies better access to credit. Germany's public investment in transport infrastructure and education has long been among the lowest in Europe. This needs to change. The country should also use its political clout to convince its partners and Brussels to implement a European reform agenda that targets investment and growth. „ (Source; <http://www.ft.com/intl/cms/s/0/97be9fbc-2d4e-11e4-8105-00144feabdc0.html#axzz3D6Dpjilv>).

Evidently potential benefits of the EU integration are not creating attractive environment for investments. Based on that fact the unemployment problem and others are not on the way to reduction. Even more the German Economy with all strength and expected large size of the integration benefits accumulation is not any more able to attract enough of new investments. Part of the problem is in huge differences among member states where formal unity of internal market in practice creates different markets with different levels of consumption potential, different levels of productivity and different average cost levels. The presumed advantage of the large internal market is losing attractiveness and impact based on the increasingly large differences among member states including the large differences in the integration benefits distribution.

5. CONCLUSION

The studies including those based on computable general equilibrium (CGE) macroeconomic models, different theoretical explanations together with the data presented in the paper, suggest that in reality the distribution of benefits in the EU or in any RTA is and has to be strongly diversified. The EU as one of the most complex and among the oldest RTAs globally experiences the differences in the integration benefits distribution from its beginning. In the EU case an interest was paid to the impacts of the integration to assure a generally balanced economic development of the member states including their regions. Unfortunately after 57 years of functioning of the EU some region and peripheral states have continuous problem of catching up with the average economic progress of the EU. Some regions which are part of the original member states of the European Economic Community – the EU today - are unfortunately still lagging behind the general progress of the EU. They are accompanied by increased number of regions that belong to a number of the newer member states. The problems of the differentiated development and of different benefits distribution with regard to expected balanced economic development in the EU were aggravated especially after the large enlargement of 2004 and later, together with the negative impacts of the financial and economic global crisis after 2008.

The EU was from its beginning aware that balanced economic growth and more equal benefits distribution are highly important for the realization of the basic economic and political integration objectives. Unfortunately from its beginning to today EU misses effective instruments to cope with the problems of uneven economic development and of too diversified integration benefits distribution. The EU instruments to help to compensate for development and benefits distribution differences in the integration (the „structural Funds “and other instruments, including some common policies) are proven to be especially not effective enough after 2004 enlargements and after impacts of the 2008 global crisis. The impacts of uneven benefits distribution, which are reflected in the unbalanced economic and catching up processes, are seen from remaining huge income differences, high general EU unemployment rates but which are especially high in less successful or less beneficial EU member states. Free labour and capital mobility, available in the EU, have not yet created effective economic restructuring to reduce the mentioned problems which endanger the RTA stability. Even more, the problems of unbalanced development and of high economic difficulties in a number of the EU member states are further aggravated by the net export of FDI from the EU in last few years. Lack of investments in the EU is not the case just in the less prosperous member states but it is becoming more and more a problem as well in the EU leading economies, among them in Germany too. Long lasting unbalanced development achievements of certain EU member states’ regions and general set back of some member states especially after 2008 imposed increasing changes in the levels of the political support to the EU integration process. There always was changing political parties’ enthusiasm about the EU in the individual member states, but the developments of the last few years strengthen those political forces which are sceptic about the EU integration. The level of political scepticism was indicated by the EU Parliament elections this year.

The relative high number of the MPs who are against or who are highly sceptical about the EU was one of the surprises of the 2014 EU Parliamentary elections.

Unbalanced development among the EU member states and increasing differences in the benefits distribution among them is calling for new policies and new instruments to deal with these problems which in fact more and more endanger the EU future stability and efficiency. The instruments and policies used up to now have to be radically reformed based on the evidence that for long time were not effective enough. Beside such reforms, which are to be more substantial as the reforms already used in the past, further solutions should be related to a new environment for investments in the EU generally and specifically in member states. The EU will eventually have to allow differentiated subsidies and other supporting instruments approaches in the less successful member countries and in their regions to boost investments and growth together with increased employment. The member states with growth, income and employment problems will have to do more to create stable and transparent national economic and political environments. Such environments have to become attractive for the investor from the EU and from outside of the EU. The reformed EU instruments and policies will have to support such national efforts and will have to offer a reasonable flexibility and responsiveness to the needs and efforts of the member states and of their regions to create higher economic growth and improved employment results in the future.

REFERENCES

Development of regional policy in the European Union; source: <http://narr.gov.rs/index.php/narr-en/layout/set/print/About-regional-development/The-EU-regional-development-policy/Development-of-regional-policy-in-the-European-Union>

EEAG Report on the European Economy, 2014, p. 20, source http://www.cesifo-group.de/ifoHome/policy/EEAG-Report/Archive/EEAG_Report_2014/eeag_2014_report.html

Fontagné Lionel, Fouré Jean and Keck Alexander; *SIMULATING WORLD TRADE IN THE DECADES AHEAD: DRIVING FORCES AND POLICY IMPLICATIONS*; WTO Working Paper ERSD-2014-05)

Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century”, December 1993 (COM(93) 700)

Kumar A.; *Mednarodna ekonomika*, EF, 1999,

Krugman Paul R., Obstfeld Maurice, Melitz Marc; *International Economics: Theory and Policy*, 9th Edition, January 10, 2011, ISBN-13: 978-0132146654)

Maps-Regional statistics; source: http://ec.europa.eu/regional_policy/information/maps/index_en.cfm

Regional Trade Agreements: Effects on Trade, 2005, source: http://siteresources.worldbank.org/INTGEP2005/Resources/GEP107053_Ch03.pdf

http://www.wto.org/english/tratop_e/region_e/regfac_e.htm

http://www.wto.org/english/news_e/news14_e/rese_23apr14_e.htm

<ftp://ftp.zew.de/pub/zew-docs/dp/dp0414.pdf>,

<http://home.uchicago.edu/nstokey/papers/DGE%20Intro%20JET%202009>

http://ec.europa.eu/economy_finance/research/macroeconomic_models_en.htm

http://siteresources.worldbank.org/INTGEP2005/Resources/GEP107053_Ch03.pdf

<http://www.historiasiglo20.org/europe/traroma.htm>

http://europa.eu/legislation_summaries/institutional_affairs/treaties/treaties_eec_en.htm

<http://blogs.lse.ac.uk/eurompblog/2014/04/28/economic-factors-play-an-important-role-in-determining-political-parties-support-for-european-integration/>

<http://ec.europa.eu/social/main.jsp?catId=1050&intPageId=1926&langId=en>

http://en.wikipedia.org/wiki/Economy_of_the_European_Union

<https://www.tcd.ie/iiis/emerging-multinationals/assets/documents/Luxembourg-UnitG4-Global%20Transactions.pdf>

<http://www.ft.com/intl/cms/s/0/97be9fbc-2d4e-11e4-8105-00144feabdc0.html#axzz3D6DpjiIv>

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GEOGRAPHICAL ASYMMETRIES IN EU (*SHARED*) TRADING: PROSPECTIVE TOWARDS A TWIN GRUBEL-LLOYD ANALYSIS

ABSTRACT

Since more than half-a-century, the debate on trade growth crosses a copious literature from various schools of thought, sometimes with a flair of conflicting insights. From the very initial focus on issues of comparative advantages and the trade balance (whether or not including the whole current account), the HO theorem added trade specialization as a complementary item. Afterwards, the postwar decades (say 1950-2000) experienced a world trade growth about thrice as fast as industrial production, which launched intra-industry trade as a corollary for further research. The logic of the Grubel-Lloyd index (GL) corrects the HO exercise, by raising rational causalities such as the impact of scale, price competition versus product differentiation or locational factors, including lean logistics, industrial concentration, vicinity and clustering. At the same time, the GL exercise fueled a discussion on the relevant statistical base, including the optimal product detail within the wider industrial setting of 'shared production' in the logistical trading trails. Eventually, globalization asks for a value-chain approach for which the WTO recently launched a new statistical data base.

This paper addresses the GL index in extra-EU trade by adding a geographical context (GLT) to the traditional setting related to trade baskets only. This introduction of a twin spatial application combines both indexes in a kind of banana effect, which classifies EU trade partners according to their product and spatial asymmetry and allows a detailed follow up by sharing industries as well. An exercise on the EU trade with Croatia (over the last year as an external EU-trade partner) clarifies the concepts used in this prospective study, and compares the GL discussion over a selection of EU external trade partners.

Key words: trade theory, EU foreign trade, spatial analysis

JEL classification: F11, F13, F15 & F43

1. TRADE-RELATED PLAYING FIELDS

The great ‘Trade Debate’ is linked to economic growth in a variety of ways. A recent overview by GKAGKA & ZAROTIADIS (2011) addresses four main leads and lags:

- **Export led growth.** This entry follows traditional trade theories that exports add scale to home production, lower prices on the home market, technological improvement by openness, FDI and innovation, and entrepreneurial activities;
- **Import led growth.** This causal theme hinges upon the standard import/export thesis but adds the intermediate sector, such as embodied services and value-added logistics. This discussion can be eventually expanded into the fields of ‘shared production’ (ARNDT) and the tradition of I/O-related growth models;
- **Growth led exports.** When export follows from local growth, the whole comes down to the correct estimation of leads and lags, related to production scale, the insufficiency of local markets and the needs for a regional or global span;
- **Growth led imports.** Similarly, imports may follow the sourcing needs of the home production by a kind of ‘activity elasticity’, which may differ by industry.

Others assessed these topics differently, such as the substitution between trade (cover-ratio) and FDI (CLAESSENS & NAUWELAERTS, 2001) or the recent notion of ‘shared production’ (ARNDT (2004) and LESLIE SKLAIR (2002) , pp. 132-5), and most recently the value-added issue in WTO-statistics (LAMY, 2013). We also refer to these sources for further overview of the earlier literature. Especially, the latter WTO based approach combines explicitly imports and exports in a debate which come close to the notions of inter-industry and intra-industry trade, the latter being known as **iiT**.

2. THE GL DEBATE AND EU INTEGRATION

Textbooks on European Integration include the intra-industry trade (**iiT**) as a crux item. Some US-based publications (BALDWIN & WYPLOSZ, 2012, p. 330-390) fail to do so but they stress in turn the product variety among EU trading partners, especially on the import side. Others describe similar macro-economic conditions, pointing at the absence of comparative advantages (LANCASTER, 1996). In a more theoretical EU approach, PELKMANS (2006) confines the **iiT** discussion to industrial organization (*viz. imperfect competition*), but summarizes the main items on measuring as well as interpretation in the literature by two revealing footnotes (*op. cit. p. 111*) .

The more informative discursive style of Susan Senior NELLO (2005 & 2012) focusses on product differentiation within the **iiT** setting, offering a large diversification, at the same

time each plant specializing in a few varieties (*op. cit.* 2005, pp. 67-68, & 83 and 2012, pp. 75-76). Also, the pre-acclaim of the EU open market by Cecchini's 'cost of non-Europe', suggested that intra-EU flows should be primarily intra-industry flows, leading to lower prices by intra-EU competition (*op. cit.* 2005, p. 113 & 172).

At this point of the discussion, the initial concerns, related to scale (KRUGMAN, 1979) and (monopolistic) competition go together with the basic principles of a genuine EU-type of 'unified' common market. As such, **iiT** plays an important role in the dynamic economics of integration, i.e. that that increased competition leads to reduced costs and prices, economic growth and a restructuring of industry, including optimized location by virtue of spatial specialization, technological progress and improved bargaining power at the international level. In spite of the convincing theory, empirical investigations remain a tedious exercise. On the one hand, there is a need for disaggregation since the finest detail still hides differentiated products or quality differences. On the other hand, too rough an analysis rather describes **inter** rather than **intra** industry (*in French **inter** versus **intra**-branches*). To a certain extent, this antithesis may be a bit overdone since the intra-industry flow analysis has witnessed an excessive emphasis on final products, in lieu of parts and accessories. This line of thought launched the notion of *shared production* (ARNDT, 2001, p. 237) with often a more geographical emphasis on location factors and other comparative advantages which may follow from the **iiT** thesis as well. Therefore, a suggestion may be raised to combine the two aspects in, on the one hand, the traditional GL (*hereafter called **GLP***) which calculates product imbalances summing up to a total for the EU and its member states, and, on the other hand, a geographical oriented **GLT**, focusing on the EU-gates of external trade, and their intra-EU distribution or value-added transit.

This paper is confined to the presentation of this 'geographical GLT' as a twin to the traditional GL setting (*hereafter called **GLP***) which calculates the trading asymmetries between two trading partners across the product classification of their bilateral trade. The term 'bilateral' is confined to the EU-27 as a whole, related to a selection of external trade partners, i.e. without the traffic on the internal market. As such, some crux related issues are not yet developed in this presentation, such as the level of aggregation in the analysis and the transit status within the EU, i.e. goods entering the Union by one '**gateway-member**' and leaving it for another one with or without technical or commercial transformations. The latter involves indeed a quite elaborate discussion on '**embodied services**' as well, including the technical debates related to inward or outward processing (**IP/OP**) or the '**transfer pricing**' administration (OECD).

3. A SIMPLIFIED BI-DIMENSIONAL ANALYSIS (GATE VERSUS ANNE INDEX)

Let us first simplify the GL by taking the M & X weights of 3 typical products:

Table 1: Simplified scheme of trade-basket asymmetry in a neutral position

Nomenclature (k)	Imports (M)	Exports (X)	Balance=Bal= (X-M)
Raw materials	50 %	0 %	50 %
Half-finished pr.	50 %	50 %	0 %
Finished products	0 %	50 %	- 50 %
$\sum (k)$	100 %	100 %	$\sum(bal)=0 ; \sum bal =100$

This neutral example produces a GL of $0.5 = 1 - \sum [|X-M| \div (X+M)]$, i.e. in between the bi-directional flow (with a GL=1) of half-finished products and the two specialized flows (both with a GL=0). In the simplified version of the table, the (absolute value) balances sum up to 100, which is in-between the minimum of 0 (full iiT or GL=1) and the maximum of 200 for full specialization (or GL=0). This simplified index ($\sum |bal|$) is called ANNE (from Asymmetric Nomenclature of National Exchanges) and relates to the GL as $Anne \leq 200(1 - GL)$ as is shown in annex 1. Most countries follow this line, and the aberrations are countries with many zero observations and/or excessive trade-imbalances.

The Anne index, and the GL equivalent, are calculated across the product-trade classification, for each EU reporting country and for the EU as a whole. Mostly the members produce higher indexes than the EU, though this is not a must. The pure iiT should be calculated at the finest scale (say the CN-8) but rougher ways are possible, provided the results are handled with care, e.g. cars (8703) and components (8708) which suggest a stronger iiT at the 2-digit (HS-2 or 87).

This simplified analysis may construct a geographical equivalent, called GATE (Geographic Asymmetry of Trading Europe) which follows a similar logic. Table 2 portrays a trade union with four members only. The example on the left-hand side shows that the GATE with the smaller deviations (ABCD) sums up to 40, whereas the more asymmetrical right-hand side (AABBCCDD) reaches a gate index of 80 on the 0-200 scale. Though the 'neutral' value is 100, such as in the case of product asymmetry, the later analysis (cf. infra, annex 2) will make clear that a Gate bracket of 40-80 covers most of the aggregate observations.

Table 2: two key examples of inbound EU- trading asymmetry with 4 ‘gates’.

occasional trading asymmetry				main items		structural trading asymmetry			
A	B	C	D	Σ	DOT	AA	BB	CC	DD
10	20	30	40	100 %	iMp	10	20	30	40
20	10	40	30	100 %	eXp	40	30	20	10
-10	10	-10	10	0	M-X	-30	-10	10	30
10	10	10	10	<40= GATE =80>		30	10	10	30

Note also that the GATE index (and its GL equivalent GLT) is calculated across the EU reporting countries, such that there is a GATE for each product and for the EU-27. Especially the latter total seems actually pinched within the 40-80 bracket. The individual scores for the product categories span a much wider variety, marking a wide geographical imbalance of the EU trading gateways.

Since there is an ANNE index for each reporting EU member and a GATE for each product category, the indexes can only be correlated for the EU as a whole. This produces a scatter such as in annex 2, which suggests, with some fantasy, a banana shape (annex 2b). The scatter confirms that most EU trading partners obtain a GATE within the 40-80 bracket, and that the ANNE marks a clear split around the 100 value. This application of the EU-15, before the main enlargements, distinguishes three groups:

- First, the bottom left groups some candidates before the enlargements of 2004, 2007 and 2013, except the Baltic (especially LV). The three land-locked Visegrad members (HU, SK and CZ) mark a very low GATE which reflects their unique cross-border transport geography. On top of them, the Nafta partners and some ASEAN NICs show similar iiT brackets;
- Second, at the top right side are the very distant (viz. exotic) partners, such as the Pacific island states Vanuatu, Kiribatu and West-Samoa. Note that only Iraq (IQ) features a pure asymmetric trade (an Anne index of 200 or GL=0) as a consequence of the UN-based ‘oil for food program’;
- Finally, the bottom right list countries with a specialized trade (low GL or high Anne) but doing there bi-directional trade within the same EU-gates (viz. member states of first entry) as if it were a post-colonial setting;
- Apparently, there seems no logic for top-left corner partners unless by small moves to more geographical asymmetry, yet by improving iiT.

4. AN APPLICATION TO CROATIA AND SELECTED ASEAN NICS

This introductory exercise compares the GL-tables for Croatia for the last year as an external EU trade partner and three ASEAN NICs which produce a relevant bracket of alternative, though more distant, trade volumes.

Table 3 : Trading asymmetry of Croatia, compared to some ASEAN NICs

Croatia	2011 (in €)	2012 (in €)	2011:volume	2012:volume
GLP (ANNE)	62.74 (29.69)	60.93 (39.14)	74.06 (51.63)	78.97 (44.06)
GLT (GATE)	35.68 (38.02)	34.73 (41.10)	37.58 (58.87)	37.46 (63.27)
Singapore				
GLP (ANNE)	63.62 (59.76)	58.66 (70.92)	55.08 (36.66)	38.56 (25.49)
GLT (GATE)	23.58 (55.23)	22.54 (52.05)	20.37 (85.34)	18.18 (71.73)
Indonesia				
GLP (ANNE)	44.15 (111.58)	43.96 (109.85)	17.24 (142.51)	15.86 (140.14)
GLT (GATE)	24.48 (52.28)	23.63 (56.59)	17.53 (118.13)	16.44 (114.60)
Philippines				
GLP (ANNE)	49.45 (85.29)	59.40 (79.15)	38.51 (117.94)	38.41 (118.46)
GLG (GATE)	24.79 (70.32)	26.86 (57.77)	21.40 (60.81)	21.31 (72.42)

Source Eurostat data ; GL-calculation in numbers; Anne & Gate equivalents between brackets

The Croatian trade-asymmetry rises both geographically as in terms of product baskets. In volume terms the product trade becomes a bit more symmetric in product composition but NOT in geographical terms. The latter may point at the so-called **dominant leg** issue; i.e. that traffic imbalances (*i.e. insufficient backloads*) necessitate empty backhauls per mode of transport, unless cargo shipments are organized by asymmetric routing, e.g. by fostering transit flows through the Adriatic ports up to the land-locked CEEC (*including cross-haulage*).

5. RECENT 2012 APPLICATIONS (ANNEXES 3 & 4)

The exercise on the EU-15 conditions is now repeated for 2012, i.e. the last year of the EU-27 with Croatia as an external partner. In this application, the new EU members of both the 2004 and 2007 enlargements are not taken as an external partner anymore since they joined the 'new' EU-27.

In annex 3, the application with Gate and Anne indexes loses the banana shape of the 1999 scatter because later EU-enlargements incorporated most external partners in the bottom-left group of annex 2. At the opposite, the pure GL-application (with GLP for product-baskets and GLT for EU-import entry gates) now follows a quite linear scatter with a remarkably good fit (R^2 of 0.85):

$$(1\text{-GLT}) = 5.84 + 0.38 (1\text{-GLP})$$

The constant of $(1\text{-GLT}) = 5.84$ indicates a small basic geographical asymmetry, to which the significant gradient of 0.38 suggests that the product-basket asymmetry at the EU external border acts through the internal market as well but with spatial and product asymmetry building up simultaneously. In terms of trade logistics, external partners with a higher product asymmetry tend to use import and export 'gates' in different EU countries, though the product baskets tend to be more asymmetrical than the handling ports and airports. The volume applications in annex 4 do not produce the same goodness-of-fit as the previous applications in trade value, but now, the scatter comes closer to a zero constant. Both value and volume applications need further detail on the product basket in order to check eventual rationality in terms of transport logistics, economic causality or administrative procedures (e.g. transfer pricing and other tax effects, see OECD 2006 & 2007).

6. CRITICAL EVALUATION AND CONCLUSIONS

The issue of intra-industry trade keeps its momentum within the EU-28. This contribution was confined to extra-EU trade. The ultimate combination of extra-EU trade with intra-EU traffic is even more important though a bit more complex too, since the recent enlargements incorporated most of the vicinity.

The traditional GL setting relates integration and trade growth to factors of scale AND competition, instead of scale OR competition. The traditional GL index applied to product asymmetry (GLP) seems more sensitive than the GLT.

The geographical GL version (here GLT) points at locational factors, which are implicitly included in the GL discussion, i.e. geographical asymmetry on the internal market. The wider debate indeed includes dynamic factors of the iiT discussion, such as plant location and business migration. The combination of both GLP and GLT allows changes over time with four alternatives, each with a specific interpretation. On the one hand, congruent changes (i.e. both GLP and GLT up or down) means that both product and geographical

symmetry or asymmetry are reinforcing each other. On the other hand, opposite moves may indicate a typical locational factor, such as different entry and exit ‘gates’ within the same industry chain, or product trading asymmetry by the same EU member.

Above all, the iiT debate asks for considerate statements. On the one hand, the intra-notion requests the finest product classification (say SITC-5 or HS-6/CN-8) to keep its ‘intra’ status. In annexes 5 and 6 the iiT drops according to the trade detail from product section to HS-2 chapters, and then to HS-4, HS-6 and CN-8. This is especially true for chemical products (annex 5), whereas aircraft seems more iiT oriented until the finest scale of passenger planes above 15 tons (say Boeing versus Airbus). On the other hand, the geographical GLT may point at inter-industry flows with value-added logistics or embodied services which may ‘jump’ across the finer product detail and other sections too. This kind of ‘vertical approach’ in the iiT debate is not included in this paper.

The twin indexes can only be compared for the EU as a whole. The scatter shows more variation for the standard GL (viz. GLP) than for the ‘new’ geographical GLT. Nevertheless, the GLT is available for the EU as a whole and for each product category as the GLP is available for the EU and the individual member states. Now, the GLT tends to vary more across product categories than the GLP moves across the EU member states. As such, both the GLP and the GLT may be complementary for both for intra- and inter-industry flows, especially in detecting the causes of changes over sequential periods of time. This paper remained at an aggregate level but invites to trace a ‘value-added trail’ at a finer product detail within the EU internal market. In the end, to this purpose, calculations may measure the effective EU integration in comparison to the real visible trade patterns with the outside (i.e. extra-EU) world.

REFERENCES:

Sven, W., ARNDT (2004) Trade diversion and production Sharing, *The journal of economic asymmetries*, Vol.1., n° 1, pp. 19-32

Sven, W., ARNDT (2002) Production sharing and regional integration, in Th. Georgakopoulos, Ch. C. Paraskevopoulos & J. Smithin (editors) ‘Globalization and economic Growth’, The Athenian Policy forum, APF Press, Toronto, pp. 97-110

Sven, W. ARNDT (2001) Preference areas and intra-product specialization, in ‘Globalization and the Political Economy of Trade Policy’, Ch. C. Paraskevopoulos, A. A. Kintis & A. J. Kondonassis (editors) The Athenian Policy Forum, APF Press, Toronto

Richard BALDWIN & Charles WYPLOSZ (2012) *The Economics of European Integration*, fourth edition, Mc Graw Hill

Evrard CLAESSENS & Ysabel NAUWELAERTS (2001) Substitution versus Complementarity between Trade and Foreign Direct Investments: a cover-ratio analysis, in C. Paraskevopoulos, Th. Georgakopoulos & L. Michelis ‘The Asymmetric Global Economy’, APF Press, Toronto, Canada , pp. 111-131

Evrard CLAESSENS, Carlos OCAMPO y Vilas & Ysabel NAUWELAERTS (2002) in Th. Georgakopoulos, Ch. C. Paraskevopoulos & J. Smithin (editors) 'Globalization and economic Growth', The Athenian Policy forum, APF Press, Toronto, Canada, pp. 183-197

Evrard CLAESSENS (2007) European Integration: global trade and transportation, Antwerp, Universitas

Evrard CLAESSENS & Walter GOESENS (1994) Marktaandeel snapshots in de internationale handel, in R. Martens & K. Vandenbempt, 'Strategisch Bekeken', Mys & Breesch, Gent, pp. 35-47

Evrard CLAESSENS & Annemie COOLS (1996) Turning tides on the North Atlantic, in C. Paraskevopoulos, R. Grinspun & G. Eaton, 'Economic Integration in the Americas', Elgar, pp. 156-165

Evrard Claessens & Toby Jansen (2010) the Horseshoe-syndrome of extra-EU trade, in Vinko Kandzija & Andrej Kumar (editors) Economic Integrations, competition and cooperation, research monograph, university of Rijeka, ISBN 978-953-648-93-6, pp. 234-245

Allan V. DEARDORFF (1984) Testing Trade theories, in R.W. Jones and P.B. Kenen (ed.) Handbook of international trade, chapter 10, Part 1, pp. 467-508, North Holland

Aristea GKAGKA & Grigoris ZAROTIADIS (2011) Growth and EU trade Relations: a case study, South-Eastern Europe Journal of Economics, Vol. 9, n°1, pp. 1-12

Elhanan HELPMAN (1984) Increasing returns, imperfect markets and trade theory, in R.W. Jones and P.B. Kenen (ed.) Handbook of international trade, chapter 7, Part 1, pp. 325-365

R.J. Jones & J.P. Neary (1984) The positive theory of international Trade, in R.W. Jones and P.B. Kenen (ed.) Handbook of international trade, chapter 1, Part 1, pp. 49-52; o.c.

Pascal LAMY (2013) Trade data is not what it seems to be (the *Made in the World Initiative*), China Daily & European Weekly, January 25-31, 2013, p.11, and later WTO sites and entries

Kelvin LANCASTER (1996) Trade, Markets and Welfare, chapter 2 on intra-industry trade (pp. 7-29) & chapter 6 on the Heckscher-Ohlin trade model (pp.86-106), Edward Elgar

Paul R. KRUGMAN (1979) Increasing Returns, monopolistic competition and international trade, *International Economics*, vol. 9, pp. 469-479

Paul R. KRUGMAN (1995) Increasing Returns, imperfect competition and the positive theory of international trade, in G.M. Grossman and K. Rogoff (ed.) Handbook of international Economics, Volume 3, chapter 24, pp. 1248-1258, o.c.

OECD (2006) Transfer pricing guidelines for Multinational Enterprises & Tax Administrations

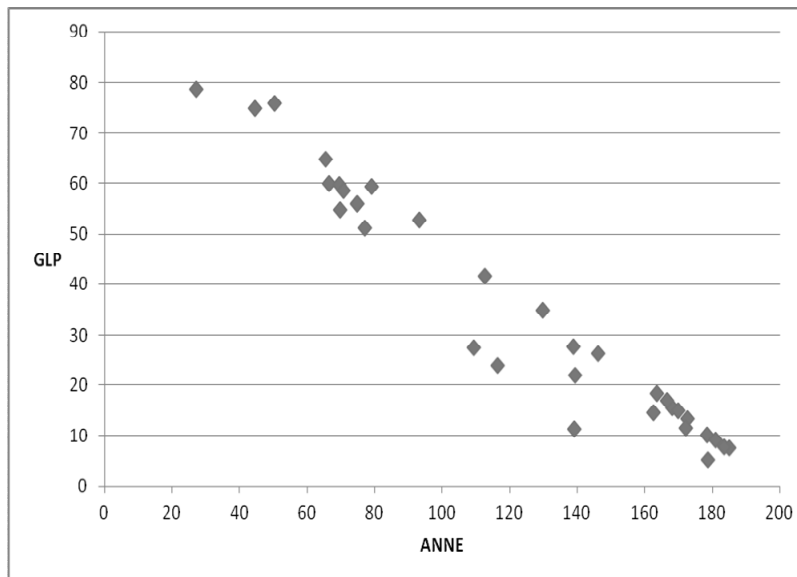
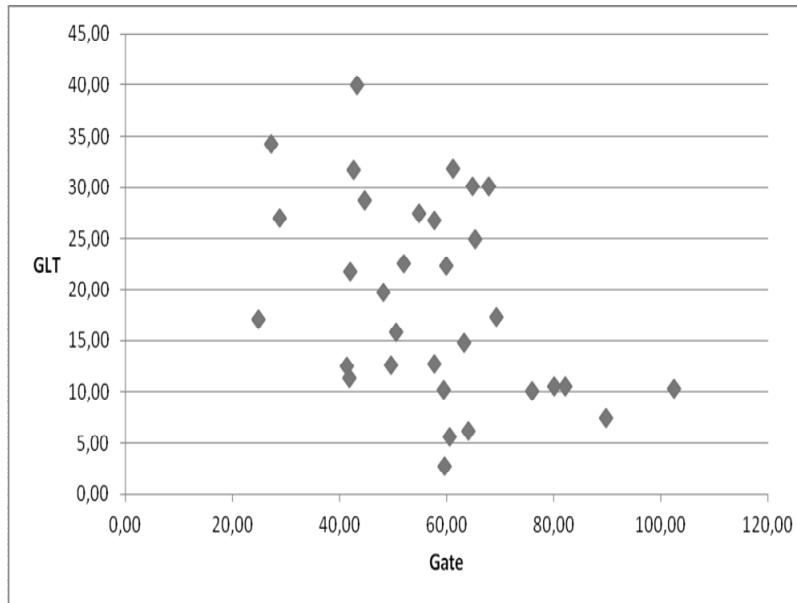
OECD (2007) Tax Effects on Foreign Direct Investment, OECD, Policy Studies, N° 17

Susan Senior NELLO (2005 & 2012) The European Union, Economics, Policies & History, McGraw Hill, 2nd edition (pp.67-83, 113 & 172) and 3rd edition (pp.75-76)

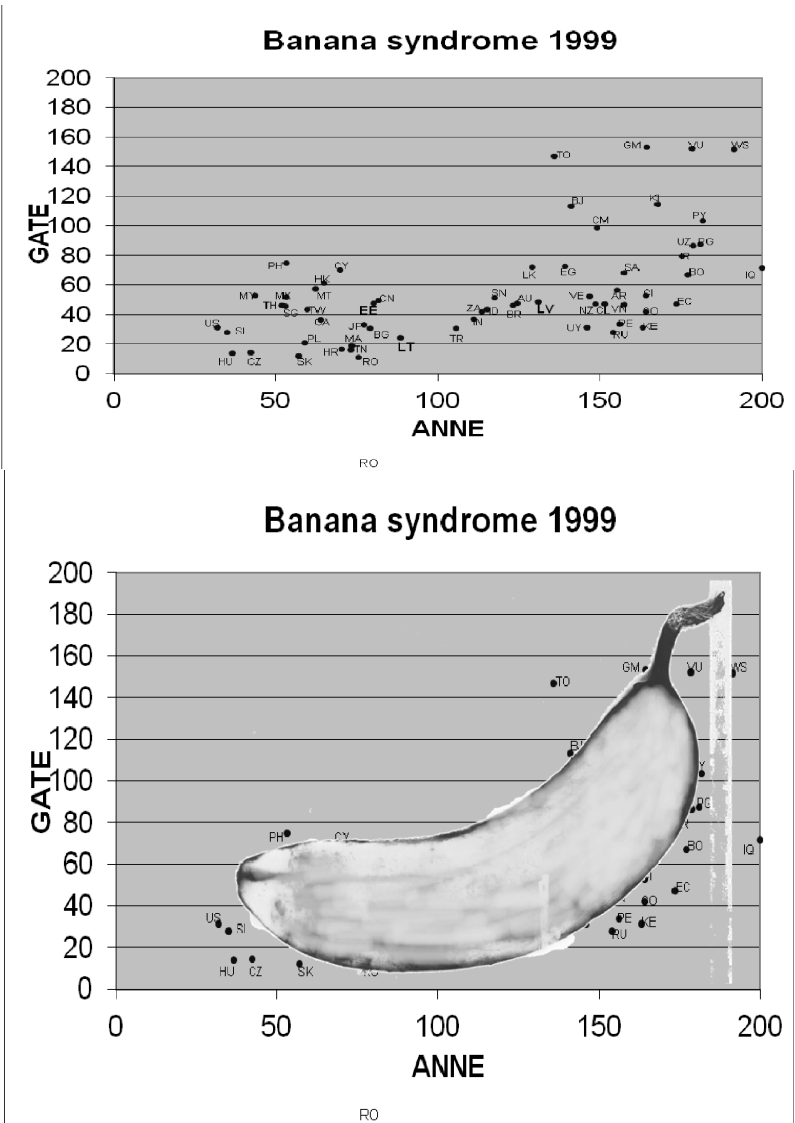
Jacques PELCKMANS (2006) European Integration: Methods and Economic Analysis, 3rd ed., Prentice Hall, pp. 100-124, and linking to the wider discussion on p. 111, footnotes 13 & 14

Leslie SKLAIR (2002) with production-sharing under the transnational pressures of TNC, Oxford University Press, pp. 132-135.

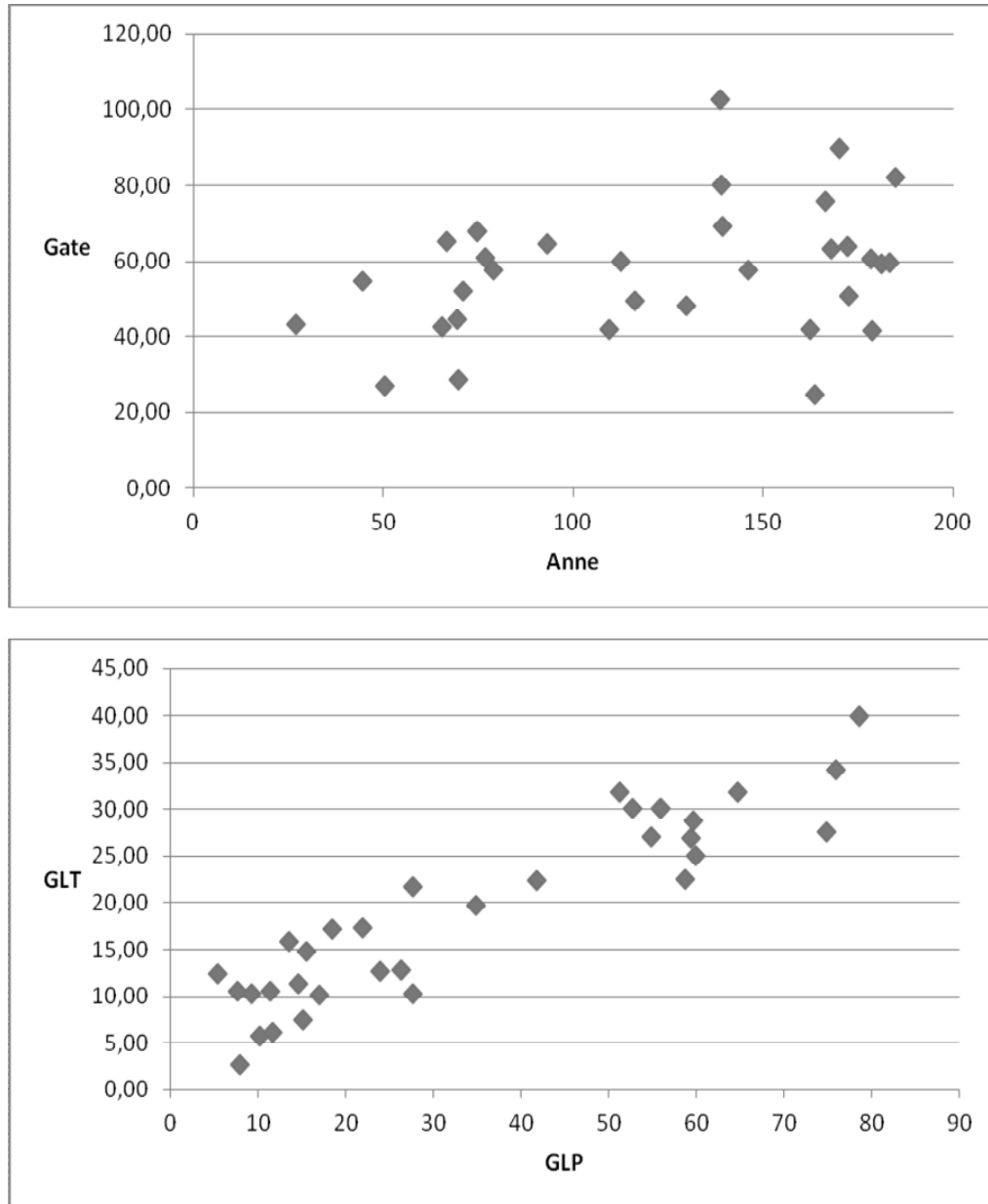
Annex 1: relation between GLT ⇔ ‘Gate’ and GLP ⇔ “Anne” (EU-27 in 2012)



Annex 2/2b: geographic and product-basket asymmetry for the ‘old’ EU-15

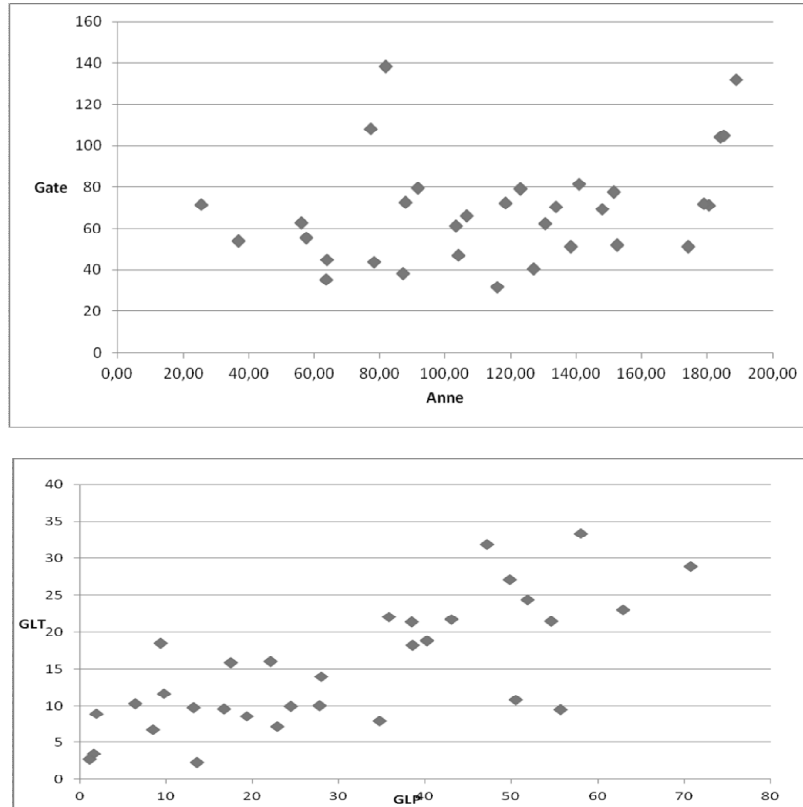


Annex 3: geographic and product asymmetry for €-trade (EU-27; 2012)



The here-used GLT & GLP are only taking the ratio $|X-M|/(X+M)$ instead of $1-\{|X-M|/(X+M)\}$

Annex 4: geographic and product asymmetry for volume trade (EU-27; 2012)



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THE BALKAN CORRIDOR-ISSUE IN AN EU-28+ PERSPECTIVE

ABSTRACT

This contribution points at possibilities of the new Eurostat-28 edition of trade related statistics and their fitting into understating the 'Balkan problem' i.e. the mix between members and 'candidates', with or without an official status. In a number of previous conferences, the issue was raised that Balkan trade scored lower than 'expected'. This not only applies to the West-Balkan; also the mouth of the Danube still seems too peripheral to cope with standard. One way to assess this problem is to conduct a standard geographical technique, such as the basic gravity model; it then becomes a striking antithesis that the 'goodness-of-fit' statistics perform much better in a EU-25 context than with EU-27.

Key words: trade theory, EU foreign trade, spatial analysis

JEL classification: F11, F13, F15 & F43

1. HANSEATIC GATEWAYS

In order to understand the 'inaccessibility' of the Balkan, it is good to assess the trade volumes in the Hanseatic rim, often defined as the Hamburg-Le Havre port range. In terms of port throughput (Figure 1) , the regional statistics make clear that port expansion from the 'golden sixties' still favours this N.W. corner of the EU. In terms of international trade it is sufficient to compare the extra-EU trade relations of the relevant countries with their intra-EU traffic in order to understand their different positioning. A typical example of visible exports is the German twin positive trade balance, i.e. both on the extra-EU trade balance as to a lesser extent on the internal traffic. Yet, these two balances sum up to a

‘dividend’ of almost 200 billion Euro, or almost € 2400 per (*German*) inhabitant. At the North Sea coast, the per capita dividend of the Netherlands exceeds € 2,900 in spite of a massive import deficit of 121 billion, more than the visible trade deficit of the whole EU (*which is € 112 billion against a positive current account balance of € 36 billion*).

Figure 1 : The EU-27 coast with port traffic by NUTS-2 region (provinces etc.)



Source: Eurostat, port traffic by NUTS-2 region; right=unloadings, left=loadings

This Dutch inward-trade deficit is compensated by an intra-EU distribution surplus of € 190 billion. Apart from the so-called ‘*distribution centres*’, it rather seems that most of the Dutch economy qualifies for this type of inbound dominance through so-called ‘gateways’, i.e. mainports and airport ‘cities’. A benchmarking example is the recent expansion of the port of Rotterdam-Europoort where the Yangtze dock (Figure 2) in the *Maasvlakte* was expanded by 12 km of quays (including 10 km of roads and railtracks) with a rated annual throughput capacity of another 15 million TEU (*20 ft. equivalent units*), or sixty daily trains. This is more than the container traffic of all Adriatic ports together!

Figure 2 : second 'maasvlakte' extension in the port of Rotterdam



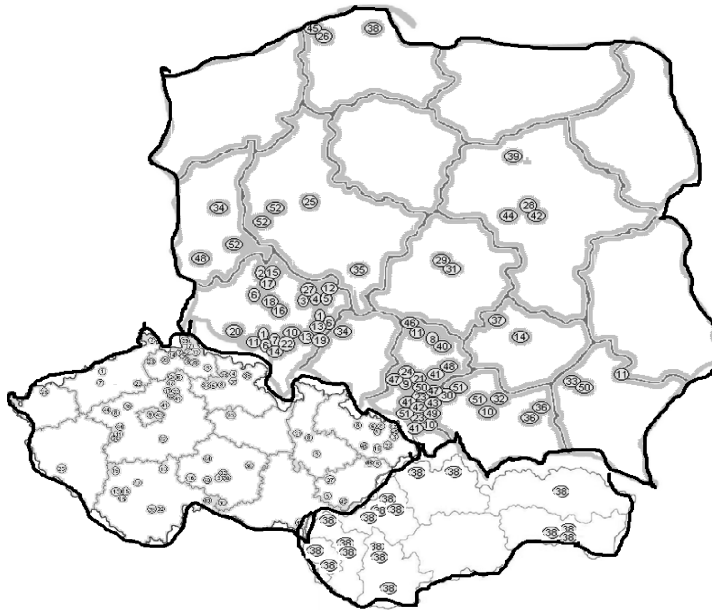
In nearby Belgium, the volume flows are one tenth, but especially inbound and outbound legs of both extra-EU trade and intra-EU traffic are more balanced, hence reducing the leg-dominance and the dividend. Most other countries mark also a better balance, especially on the Scandinavian-Baltic coasts. A remarkably situation is Poland. Though situated at the sea coast, the internal traffic more than doubles the extra-EU trade. This may be explained by the special geography of the Visegrad region. Though the region is accessible through the Baltic ports, the lower draft capacity of this seaways pushes much external cargo through mainports, among which rival Hamburg and Rotterdam fight for this type of transshipment cargo, either coastal or by landbridges.

Table 1: EU-28 trade values (billion €) compared to intra-EU traffic

Extra-EU trade			EU – dividend		Intra-EU traffic		
iMport	eXport	Balance	member	dividend	Arrivals	expedit.	Balance
332	471	139	Germany	196	573	650	57
172	181	10	France	-77	349	261	-87
251	181	-97	UK	-150	236	183	-53
231	110	-121	NL	49	119	370	170
107	95	-12	Belgium	7	228	246	19
21	30	9	Denmark	12	48	53	5
42	58	16	Sweden	4	87	75	-12
22	26	4	Finland	-1	37	32	-5
50	34	-16	Poland	-16	106	106	0

A simple geographical clarifying mapping is portrayed in Figure 2 “ for the automotive industry of the northern Visegrad countries. Which shows that overseas connection are often better served by the Atlantic main-ports through land-bridges than the smaller seaports of the Baltic. Moreover, it is quite difficult to conduct the above analysis for the CEEC landlocked countries. Indeed most trade of them is trans-shipped through the surrounding seaports and then enters those inland regions, together with the ‘genuine’ intra-EU traffic. Even if the whole Balkan enters the EU, this problem will not change.

Figure 3: Location of automotive industry in Northern Visegrad (PL, CZ & SK)



2. CAN THE WEST-BALKAN COPY THE HANSEATIC?

In order to understand the ‘inaccessibility’ of the Balkan, the grand totals show a striking fact, which was previously revealed in this series of conferences, under the direction of editors Vinko Kandzija and Andrej Kumar.

First of all, there are the striking totals. Croatia and the six West-Balkan neighbours hardly reach the trade volumes of the quite distant Finland. Second, the trade deficit in the West Balkan of about € 10 billion is about that of pre-entry Poland; now Poland is on par for intra-EU traffic. In the West-Balkan, half these deficits are related to the VIM-entry of the FDI-product classification (*i.e. Vehicles, Instruments and machinery*). This means that the deficit trade is fueled by FDI and other investment-related flows, and that soon, a counter flow may be activated as it did in the mentioned *Visegrad* countries. These flows are either intra-industry (*meaning competition within the same industry*) or inter-industry (*meaning value-chains within the same production system, such as subcontracting and other forms of ‘shared’ production*). Third, most Balkan countries portray volume traffic with an opposite balance. This means that the EU imports relatively more volume from Balkan which looks for backloads. Though this ‘might’ be temporary, it brings the attention to the changing iiT weights which conclude with a fourth overview in Table 2.

Table 2: EU-28 trade values (billion €) and intra-industry measures

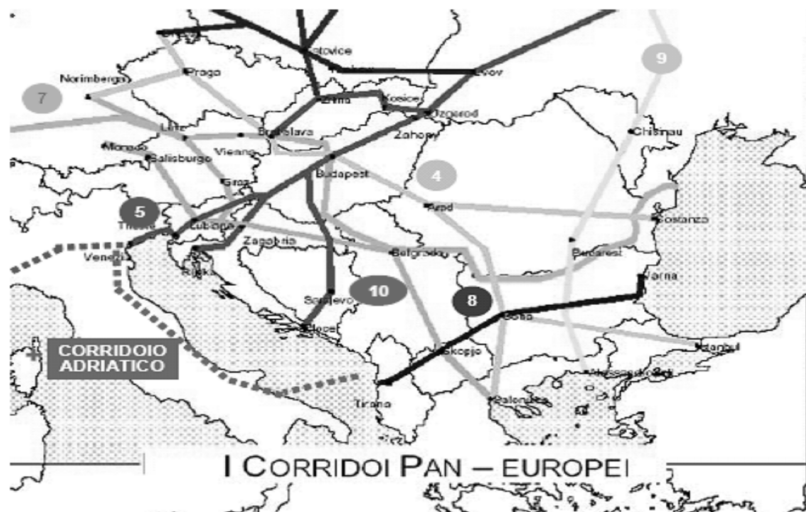
countries	Period	EU imports	EU exports	Balance	GLP/iiT	GLT/icT
Croatia	2008	4.9	14.2	9.3	51	50
	2012	5.5	11.1	5.6	61	54
Serbia	2008	4.3	9.5	5.2	54	56
	2012	5.0	9.6	4.6	62	57
B I H	2008	2.5	5.2	2.7	52	56
	2012	3.0	4.8	1.8	55	52
FyroM	2008	1.9	2.6	0.7	57	52
	2012	1.6	2.4	0.7	63	48
Albania	2008	0.7	2.2	1.5	41	55
	2012	1.1	2.4	1.3	54	51
Montenegro	2008	0.3	1.1	0.8	15	29
	2012	0.3	0.9	0.6	24	27
Kosovo	2008	0.1	0.5	0.4	16	30
	2012	0.1	0.7	0.6	19	17
West-Balkan	2008	9.7	21.1	11.4	54	58
	2012	11.7	21.8	10.1	63	59

On the one hand, there seems to be a size dependency for intra-industry trade in the traditional iiT setting of the GL index. On the other hand, our GLT index, measuring the intra-country traffic (products traded with the same specific EU member) is relatively higher but recently dropped. This may indicate that trade was initially organized in a relatively pairwise manner but now heads for a wider geographical scope among EU members.

3. THE CORRIDOR ISSUE

The TNT-T program has limited concerns for Balkan crossings. On the one hand, there are the ancient trails of the Orient Express (*now the corridors numbers 4 and 10*) as well as the ‘blue Danube’ (*now corridor 7*). The new corridor nr. 8 seems to constitute a new long-term adventure in order to open landlocked areas between Varna on the Black Sea, Durres on the Adriatic and a ferry link to the Italian coast at Bari with the ‘*corridoio adriatico*’. Nevertheless, in view of the backlogs in trade growth, it seems important to foster the two side lines of the fifth corridor (Kiev-Budapest-Milan-Madrid-Lisbon) to the Croatian ports of Rijeka and Ploce; especially the latter is a due symbol of linking the Bosnian federation both towards internal economic cohesion as well as giving the landlocked CEEC countries flexible links to the maritime coast of the Union.

Figure 4 : Map of TEN-T corridors between Danube and Adriatic



3. SUGGESTIONS FOR FURTHER RESEARCH

In most of the previous conferences in Rijeka and Vitez, the low loads of Balkan traffic, including backlogging growth potential, were related to major issues in the recent past. Besides the rather technical trading issues, related to the dismemberment of ex-Yugoslavia, there still remains the total volume of Danube traffic and maritime throughput at Adriatic ports which are still below previous historical peaks. These peaks and later dips had more to do with the trends of industrial restructuring than with political events. Therefore, the main course of history is to reverse these trends by re-engineering transport.

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MACRO AND MICRO - ECONOMICS DIVERGING IN THE GLOBAL MARKET – IDEAS VERSUS VESTED INTERESTS

ABSTRACT

The Asian surfacing economies, after the monetary disorder following the Camp David panicking weekend dollar's debasement, 15th August 1971 (FERGUSON, 2008), may be considered as one of the fallout effects among which:

- the oil embargo and the surge of its price within the OPEC alliance;*
- the Islamic demise of the socialist ideology during the '70s, leading to the Jihad, and related Afghanistan and Islamic wars;*
- within the Commonwealth of Independent States (CIS), and globally accepted general shift towards a single market economy, have upturned the World basic order which has emerged since the Yalta Pact 1945, when the Western American revolution seemed to be definitely prevailing;*
- the huge financial slumps and markets' disorder and corruption on a global basis, which are the final unavoidable consequence.*

At the end of the cold war, the supremacy of the USA was undisputable. The stagflation, during the '70s, started to contradict the Keynesian models and promoted thereafter a new restrictive monetary policy during the '80s, in order to fight the inflation, which became the primary economic policy target.

The consequent first 1987 equities market bubble and the Greenspan looser monetary policies choice in the following years ignited the roaring nineties. The financial deregulation, which promoted the rise and fall of World Com, Enron, Drexel Burnham Lambert Baring, Long Term Capital Management Hedge Fund and most of the investment banks as well as most of all other remaining hedge funds are also direct fallouts.

Emerging vested interests, and prevailing monetary easing policies, assumed an everlasting Keynesian pattern, until the Japanese case firstly and the unusual Paulson TARP (Troubled assets recovery plan) banks' funding programs later, temporarily altered the banking activity towards a social accounting clearing system, under the protection of the FED chairmen, with final tax-payers fiscal support. No new macro-economic ideas seem to satisfy present vested researchers, pressed by short-term horizons in a tough political contest.

At same time, the weak control over an ever-complex worldwide-interlinked financial intermediaries network was not successful in controlling the pursue of profit, or capital efficiency, as reworded by Keynes, exploiting special free zones all over Asia, replicating the British Hong Kong model in: China, Taiwan, Korea, the Philippines and so forth. The new financial deregulation permitted new toxic instruments, in such projects, more realistic and profitable profit goals, most of the Western industrial and financial entities have been seduced

The declining economic activities in the welfare Western States, relocated by taxation, under stringent formalities towards the East, have outlined the evidence that the real Wealth of Nations' source is now labor, creativity and synergy, in spite of natural resource or other natural or artificial privileges. The political establishment with Central Banks have ruled the fiscal and monetary policies, stemming from econometric models, in a global market, where not all the variable were considered, especially the provenience of merchandise and the actual goals of the producing units. "We used to think," James Callaghan told the Labour party conference since 1976, "you could spend your way out of a recession and increase employment by cutting taxes and boosting spending. I tell you in all candour that this option no longer exists.....". History gave its advice and some kind of compromise must be found between macroeconomic policies, stemming from exclusive political goals - vested interests - and "most urgent microeconomic entrepreneurs' considerations.

Key words: monetary, fiscal policy, efficacy, recession, crisis.

JEL classification Code G210

1. INTRODUCTION

The recurring financial and generally economic crisis: a slow-down activity or a negative GDP growth, lasting two or more quarters, called *recession*, an especially prolonged or severe recession called *depression*, finally a long period of slow but not necessarily negative growth called economic stagnation, have always attracted most of economic research and became the focus of most economic literature.

While most of the prevailing historic models have evolved towards some final scientific definition, most of discussions and articles are actually very long time dated. Bernardino Davanzati, John Law, even Isaac Newton has explained the “Irrational Exuberance” as outlined by (SHILLER) and recalled by Alan Greenspan. The left paths remain the neutrality of money supply as depicted by Friedman and Anna Schwartz at the beginning of the sixties in the twentieth Century and the Keynesian fiscal and monetary policies ideology, surviving both its creators and history obsolescence as successful promoter of deficit spending, keep standing firm at the base of a new vested interests coalition.

When at Stanford University in 1992 Francis Fukujama, predicted *the end of history and the last man*, after the demise of the cold war, the world was at the dawn of a new great depression recollecting the first *Depression Economics* (KRUGMAN) in the most uncertain and confused conflicting old economic policies in the new global worldwide single market. After the October 1987 first Exchange bubble bursting in the dot.com collapse in 2001, the subprime 2007 crash and the 2008 derivatives melt down, led the world community and Economy Clubs to test the new inefficiency of old models, economic welfare mechanisms. New world trade patterns, modern financial markets regulations and instruments ideas should be found to extrapolate a way out towards a new economic world order.

2. 1979, THE ORIGIN OF THE 21ST CENTURY'S NEW ERA.

The shah of Iran Reza Pahlavi, after 37 years of ruling, left Teheran on 16 January 1979 for never return because of millions of protesters everywhere in the Iranian cities, forming one of the biggest humankind crowd. Never appeared before, in a State, usually addressed as a miracle of modernization and economic reforms, controlling one of the biggest army as well as an effective secret police such a revolution. The crowd was ready to die for a scholar living in exile in Paris, Ruhollah Mustafa Khomeini an elder Shiite scholar, a revolution leader who was not aiming to a secular modernization. His only desire was an Islamic revolution, which actually succeeded in disrupting the Communist rule in Central Europe and spread to the rest of the Arab world, a holy war called jihad, displacing most of the socialist principles.

On 3 May 1979, the Conservative Party, led by Margaret Thatcher ousted the incumbent labor government of James Callaghan with a parliamentary majority of 44 seats. The election was the first of four consecutive election victories for the Conservative Party, and Thatcher became the United Kingdom's - and Europe's - first female iron lady head of government.

John Paul II, born Karol Josef Wojtyła, also known as Saint John Paul the Great, became pope of the Catholic Church on the 16th October 1978 and, a few months later, in June 1979, it is to his Poland that he makes his first of so many trips during his pontificate. A huge crowd came to listen to him in Warsaw's Freedom square and it is precisely at that moment that the Polish people realized how considerable his power was. Worker's strikes multiplied, leading to a destabilization of the Polish communist regime. At the end of 1981, when the government, running out of arguments, adopted the martial law, Solidarnost had 10 million members and was carried on by a deep social wave. For the first time since 1968 in Czechoslovakia, a communist regime was seriously shaken.

Christmas 1979 was the Russian first day of invasion of Afghanistan, the first Nation to recognize the October revolution in 1917. The Soviet war in Afghanistan lasted nine years since December 1979 to February 1989. As a part of Cold War, it was powerfully fought between Soviet led Afghan forces against multi-national insurgent groups called the Mujahedin, mainly composed of two alliances: the Peshawar Seven and the Tehran Eight. The Peshawar Seven insurgents received military training in neighboring Pakistan and China, as well as weapons and billions of dollars from the United States, United Kingdom, Saudi Arabia, and other countries. The Shia groups of the Tehran fight alliance received support from the Islamic Republic of Iran. Early in the rule of the PDPA government, the Maoist Afghanistan Liberation Organization also played a significant role in opposition, but its major force was defeated by late 1979, prior to the Soviet intervention. The decade-long war resulted in millions of Afghans fleeing their country, mostly to Pakistan and Iran. Hundreds of thousands of Afghan civilians were killed in addition to the rebels in the war.

The initial Soviet deployment of the 40th Army in Afghanistan began on December 24, 1979, under Soviet leader Leonid Brezhnev. The final troop withdrawal started on May 15, 1988, and ended on February 15, 1989, under the last Soviet leader, Mikhail Gorbachev. Due to the interminable nature of the war, the conflict in Afghanistan has sometimes been referred to as the "Soviet Union's Vietnam War" or the "Bear Trap".

At the end of 1978, the septuagenarian Chinese, Communist Party leader Deng Xiaoping, after stabilizing the relations with the US, "*The United States of America and the People's Republic of China have agreed to recognize each other and establish diplomatic relations as from January 1, 1979.*" (EZRA F. VOGLEI, 2011, 333) heaved himself to the top job introducing a series of economic reforms that ultimately changed the country beyond all recognition. Emulating closer reforms, he applied the successful free or special zones regimes of Singapore, Hong Kong, Taiwan and similar Special Economic Zones, to mainland and continental China. Adopting the Wealth of Nations' principles, he opened the Country, out of the extirpated Cultural Revolution and the little red book doctrine of Lin Biao, in a borderless free capitalistic enterprise regime. He finally attracted most of the industrial activities and capitals out of the expensive ruled welfare Western democracies, starting a new economic era for the Far East region and its escalating financial centers.

At same time, he and his colleagues planned the dissolution of the collective farms set up by Mao Zedong and permitted the peasantry to return to their old system of private family farming. These five figures, not correlated but performing their task in different areas in an already global economy, were the artificers in that year 1979 of an epochal social remodeling, marking the end of the great socialist utopia that had dominated so much of the twentieth century.

The huge literature about the demise of socialism, include even liberals bound to the prevailing welfare State theory reinforced after the American '60s movements started in Berkley, at Joan Baez notes. "...economics inevitably takes place in a political context, and one cannot understand the world as it appeared a few years ago without considering the fundamental political fact of the 1990s: the collapse of socialism, not merely as a ruling ideology, but as an idea with the power to move men's minds." (PAUL KRUGMAN, 2009, 10)

In this way, at the end of the eight decade of the twentieth century, the twin forces, markets and religion, discounted for so long after the enlightenment, came back vigorously on the world stage.

3. UNRESOLVED MONETARY ISSUES

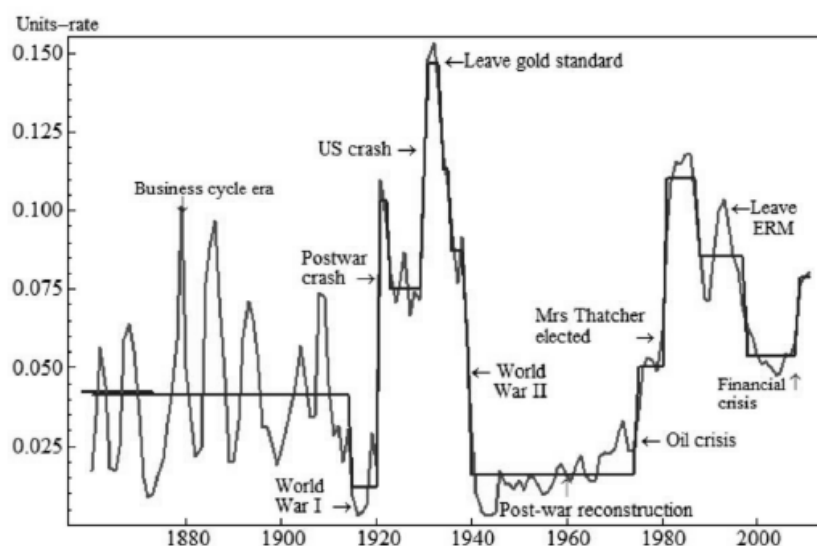
“The outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes. The bearing of the foregoing theory on the first of these is obvious. But there are also two important respects in which it is relevant to the second. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back. I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas. Not, indeed, immediately, but after a certain interval; for in the field of economic and political philosophy there are not many who are influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But, soon or late, it is ideas, not vested interests, which are dangerous for good or evil”. (KEYNES, p. 383)

“Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back”, considering the present fiscal and monetary policies enacted worldwide in the developed World. Nothing more correct may be said, in order to explain the waste deficit spending and free money let available to keep surviving large banks, too large to fail and out of racks industrial activities under Keynesian schemes under a huge sovereign debt structure.

Many central banks rely on dynamic stochastic general equilibrium models – known as DSGEs to cognoscenti. This model – which as usual is more technical and formal than conceptual – argues that the models’ mathematical basis fails when crises shift the underlying distributions of shocks. Specifically, the prerequisite ‘law of iterated expectations’ fails, so economic analyses involving conditional expectations and intertemporal derivations also fail. After the fiat money debasement, all the monetary models started to stagger and not to respond to expected evolving paths. In the first gold standard rejection, after the First World War, the unemployment rate rapidly grew reflecting the great depression, after the gold-standard commitment rejection, the unemployment rate fell reflecting the loose consequent monetary policy in the roaring twenties and the strict consequent Hoover measures. Two different patterns as presented by (HENDRY) and explained as law of iterated expectations’ failures, in the seventies and eighties, after the external gold constraint was removed, all the public spending started to rapidly grow piling up an unbearable progressive public debt.

Thomas J. Sargent, Nobel 2011 has tried to explain the uncertain outcome of monetary policies as inflationary or on the contrary ineffective from a Keynesian point of view as uncoordinated iterative paths according to related economic policies behavior. It is strictly and coherently visible, after forty years of tested quantitative easing and negative interest rates that the economic activity is following different geo political trends reflecting the two centuries old explanations in Adam Smith Wealth of Nations and in most classic theories of general equilibrium.

Figure 1 Location shifts over 1860–2011 in UK unemployment, with major historical events



Source: < <http://pragcap.com/why-standard-macro-models-fail-in-times-of-crisis> >

The 1987 – 2008 crisis are slowly developing along the fiat money new era, where some of the basic monetary functions have been lost. The Keynesian – monetarist models are not able to explain anymore the unexpected market behaviors in the stagflation decade of '70, the October 1987 bubble burst, the roaring years ninety and the final derivative general world wide crisis. It was Congress's view — and it was certainly St. Germain view - that the S. & L. industry was vital to the American dream of homeownership. Indeed, back then, the only loans the industry allowed were mortgages. Thus, in 1982, Congress passed the Garn-St. Germain Depository Institutions Act — which St Germain wrote with Edwin "Jake" Garn, the Republican senator from Utah - that essentially deregulated the industry, allowing S. & L.'s not only to pay market interest rates, but to make loans far afield from home mortgages.

The idea was that S. & L's needed to be able to make more profitable loans since they were going to be paying much higher interest rates to gain deposits. What nobody seemed to realize was that financial deregulation was bound to have unintended consequences. S. & L.'s went from being the most cautious of financial institutions to the most heedless. S. & L.'s operators dove into all kinds of exotic areas. By the late 1980s, it had all come a cropper; ultimately more than 1,000 S. & L.'s - one out of every three still operating in 1988 - went under. The industry's collapse cost the taxpayers nearly \$125 billion.

"When Her Majesty Queen Elizabeth II asked the economists at the London School of Economics in November 2008 how come they had not seen the current crisis coming (a question which was surely on everyone's lips but which only a feudal monarch could so simply pose and expect some answer), the economists had no ready response. Assembled together under the aegis of the British Academy, they could only confess in a collective letter to Her Majesty, after six months of study, rumination and deep consultation with key policy makers, that they had somehow lost sight of what they called 'systemic risks', like everyone else. Had been lost in a 'politics of denial'. But what was in that they were denying?" Same uncertainties arise from the econometric centers of both IMF and FED, which supplied positive comments during the beginning of 2008 not foreseeing any financial cloud in their model skies. The FED chairman Bernanke himself, after refusing the offer of his rented house in the year 2002, when he joined the FED Board relocating from Princeton to Washington, bought it in the year 2004 at a price double of the previous one. It happened at the eve of the real estate collapse in the subprime crash; he also had a full access to both the IMF and the FED econometric centers.

"The only surprise about the economic crisis of 2008 was that it came as a surprise to so many. For a few observer, a textbook case that was not only predictable but also predicted. A deregulated market awash in liquidity and low interest rates, a global estate bubble, and skyrocketing subprime lending were a toxic combination." (STIGLITZ, 2009) Actually, the 2008 crisis is a clear and unavoidable consequence of the macroeconomic deregulation of the Western economies, without any consideration of two economic issues present on the 21st century World markets. First, the huge reservoir of cheap labor in Asia, out of the planned economy cage, and the consequent foreseeable concurrence, second the cheap updated telecommunication and transport logistics, that produced an easily understandable convenient reallocation of the world industrial production and research activities towards the East.

The final invisible Smith hand were reallocating the goods and services production progressively after the Deng revolution to Asia, while the financial Western deregulation was producing as an alternative to a wide deleveraging of financial quantities and financial intermediaries critical masses, the new financial innovation with all its risks and consequences. Unfortunately, the new potential market was the financial structured and derivatives markets, the hedge funds and the new subprime huge latent credit demand.

During the stagflation decade in the '70, the Keynesian framework was not explaining the then idle economy growth, when price were rising with as well as the unemployment rate.

During those years, Hayek and Friedman, both monetarists won the Nobel prize for Economics, while in the eighties the monetarist theory, at the base of the first 1987 bubble doesn't give an explanation either. The surging of the stock market indexes coexist with stable CPI trends in the commodities and services markets, showing the first wide diverging paths of growing financial instrument value without general inflation fallouts. The expanding monetary base, due to the new fiat money experience, and the steady CPI are the new coexistence model.

4. THE CONFLICTING ECONOMIC ALTERNATIVES

“Macroeconomics was born as a distinct field in the 1940's, as a part of the intellectual response to the Great Depression. The term then referred to the body of knowledge and expertise that we hoped would prevent the recurrence of that economic disaster”(LUCAS). All researches in those periods concern segmented markets, with different barriers and entrance barriers, like transportation and communication costs, customs duties and protecting lists. Nowadays, in the global interdependent single market, the cost structures and technology incorporated in single products affect the global demand and supply, which seem to affect the economic activity more than any other macroeconomic variable. In this new lookout it is likely to see “.....western democracies were increasingly circumventing the spirit of liberal constitutionalism by passing coercitive legislation, typically under the guise of achieving social justice, but in reality serving well-organized coalitions of special interests” (HAYEK).

The shift towards macroeconomic models to regulate both the employment level and the intrinsic value of money enters in conflict with the microeconomic principles of management in a market economy. Considering the marginal capital efficiency, as Keynes used to call the profit all the surviving firms pursue the offset of all the costs by mean of sufficient revenues, to satisfy both their financial and the economic dynamic structures.

The macroeconomic models mostly support public functions as a solution to the instable social equilibrium conditions, which seem not to predict the full employment of all the available resources. The public function, spread over a vast territory, imply scores of public officers and public structures to support non-profitable economic activities during recessions and depression cycles when vast potential unemployment affects the economic infrastructure and sectors.

Apart the thirty golden years running from the end of the Second World War up to the dollar debasement, the anti-depression New Deal instruments and the deficit spending theory seems to have attracted a vast conglomerate of Governments engaging a rally on the financial markets to close the gap between general economy goals and available national

resources. The sovereign debt therefore has arose generally over the boundaries of national resources to service its falling terms and revenues from personal taxation and public tariffs. Since 1970, the fiat money condition has allowed the issuance of uncovered paper money promises, instead of title representing actual goods. For the first time in the year 2008, on the 16 September, the FED took advantage of the Section 13/3 of the FED Reserve Act allowing the emission of unlimited paper money, without any need of justification or specific ground. This time the case was the 23 Bill loan to J.P. Morgan, in order to acquire the falling Bear & Sterns a 1923 investment Bank, starting a tremendous growth of the monetary base that, according to plane monetarism and to Keynesian models, should stimulate the economy for the latter and produce a rundown hyperinflation, which indeed not appeared.

What really happened, according to some contradicting readings, after enough analysis and readings about the issue, is a huge liquidity trap, according to Keynesian perspectives, an unlimited financial bubble over most of the World trading markets meanwhile the CPI remained steady by a general substitution of Western production by Eastern, and Asian lower labor costs industrial productions. The new monetarism from a macro economic point of view seems split about an apparent grow of financial instruments prices in a deflationary framework.

The two contradicting developments may coexist since the beginning of the '80s as a side effect of the economic interdependence, arousing from what named in some NY Times articles "globalization", or global village, or straight forward used as an article title. The economic interdependence come out of the 1979 actual end of history, when Khomeini, Margaret Thatcher, Pope John Paul II, formerly Karol J. Wojtyla and especially Deng Xiaoping, turned the world upside down. That was the end of the cold war on one side and, as a side effect, through the jihad revolution, a new religion wave, that surfaced from the post enlightenment world as a violent wave of violence and rebellion.

When the Islamic world turned its back to the Soviet Block, starting with the removal of the Karaki government in Kabul perpetrated by Amin to release the Muslim ideology from Marxism, as was happening all over the Islamic world. The event led to the Afghanistan invasion by the Russian troops on Christmas day 1979. Started then a ten years war, which led the Soviet block after the general upraise in Poland and the Chinese turnaround about the Cultural Revolution, to the fall of the Berlin wall and the give up of socialist perspectives of a State run Economy.

The follow up of these events actually was consequence of the debasement of the dollar and of the linked inflationary '70. The confused stagflation and recession, with an impressive inflation in no way was in line with the Keynesian model stemming from the General Theory (Keynes 1936), neither were explicable from a strict monetarism point of view, which was not possible in an inflating monetary expansion.

At Camp David, after excited and confused long discussion on the second weekend of August 1971, the undersecretary John Conally and President Richard Nixon took a panic decision. The 4 percent drop in the dollar against the German mark since the Bundesbank allowed the rate to float since May, the spike in gold to over forty-two dollars an ounce and a list of custom duties on imported goods, a fiscal contribution to US made product. However, the president wanted to wait until Congress returned after Labor Day before implementing the plan. He had heard about the risks about suspension from Federal Reserve chairman Arthur Burns, and worried that closing the gold window could cause a panic” (WILLIAM L. SILBER 2014,83) the Diocletian edict was pronounced and the 21st century begun. There is, actually already mountains of evidence that support the quantitative theory of money implication for money growth, inflation and interest rates. What is new in this post gold exchange standard stage is the concurring inflation and unemployment, which seems to contradict all the Keynesian explanation and has a common definition as stagflation, and reflects the markets behavior during last century’s ’70s.

After the ’80, the monetary base growth reflects the fiat money huge increase in a sudden debasement of the legal tender payment instrument, under the exploitation of the deficit spending as a bridge to further general fiscal policies in order to pursue some comfortable political infrastructure. “ ungefähr 70 prozent der Forscher arbeiteten nicht in Interesse der Allgemeinheit. Sie hatten massive Eigeninteressen. Sie saßen in Verwaltungsräten von Finanzfirmen, arbeiteten als Consultants oder hatten gar eigene Unternehmen“ (Weik, Friedrich, 2014, 143).

The prevailing Keynesian perspective seems linked to some vested interests, deriving from the usual mobility of researcher and economists that commonly divide their professional life among Universities, are member of the board in Financial firms and work as partners in large consulting firms. Generally, they publish on oriented press, or take advantage of nominated scholarships and private funds in research and teaching programs. (WEIK, FREDRICH, 143).

Figure 2 Monetary base since the '85

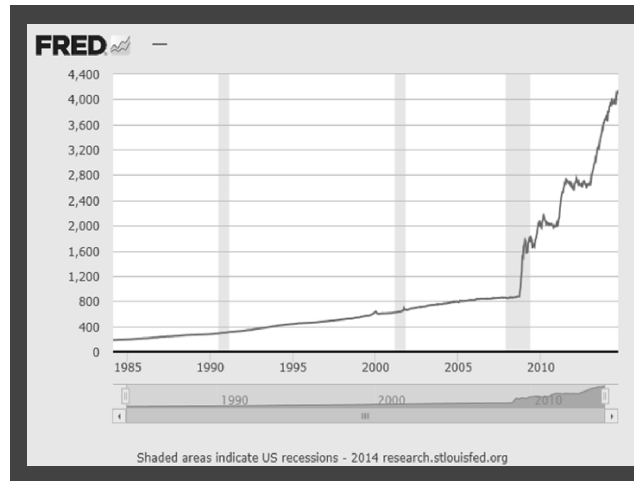


Figure 3: Inflation during the third century of the roman coinage, silver debasement.

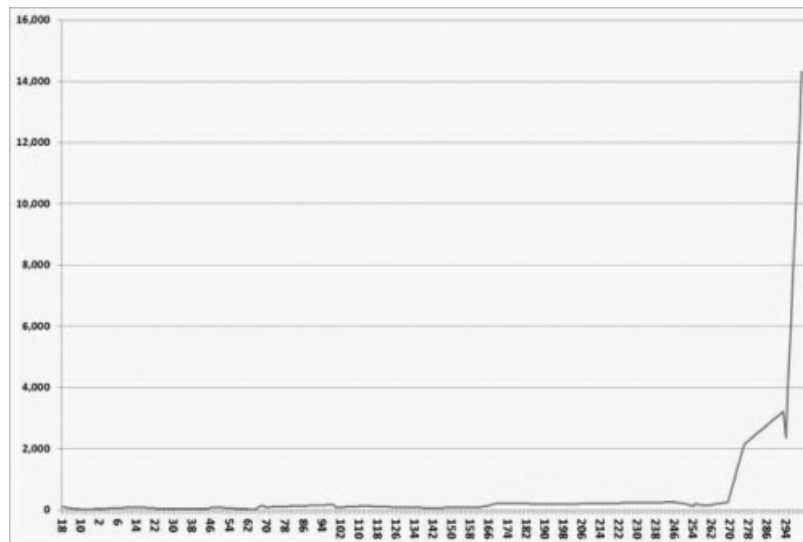
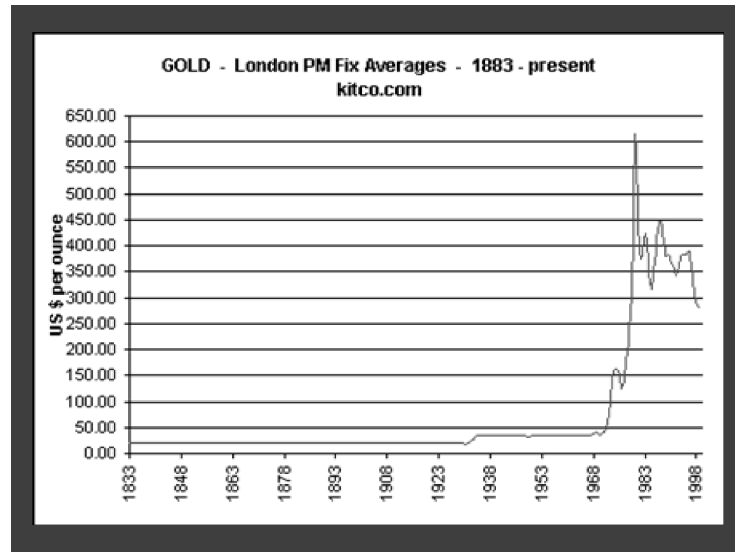


Figure 4: Dollar debasement in term of gold.



Darrell Duffie, economist at Stanford has been sitting on the board of Moody's, Martin Feldstein, Harvard economic advisor of President Ronald Reagan, promoter of deep banking deregulation, was member of the board of AIG. Glenn Hubbard President of Columbia Business School Uris Hall, was sitting on the board of Capmark, and MetLife, Richard Robb as well with a tenure at Columbia, is founder of Kristofferson Robb & Company, as well manager with Hedgefonds CRC, which assume a relevant risk position in the CBO market. Larry Summers, professor at Harvard, chief economist at WB, appointed by President Clinton, is a major deregulator. Manager of the hedgefund D.E. Sjaw, after appointment by Obama as member of the Presidential economic committee. Same in Germany where Hans Werner Sinn was advising member of the board with the Hypovereinsbank, Burt Rürup founded and managed the Rürup Rente, financial Institute for retirement pension plans, with Carten Maschmezer, founder of MaschmezerRürup AG, Walter Riester, liberal according to the European standard, was sitting on the boards of Bosch, Daimler Chrsler, Thyssen, Audi, Rheinmetall, Heidelberger Druckmaschinen WMF. A long list of vested interests operate at same time on the public sector, or as private entity managers, or scientific researcher and pursue personal greatly rewarded position in the new deregulated era.

At the end of the wide effects in encroaching of deregulation and financial risky frameworks, what rests, at the Dodd Frank effort to reestablish financial market credibility, is expressed by Elizabeth Warren with her theory of consumer protection: "... banks did not and could not make money on loans that consumers had no hope of repaying. In any

case, federal laws do not prohibit greed or even excessive optimism or even excessive risk taking.” (GEITHNER, 2014, 504)

5. THE WAY OUT

Only way out and solution to such a confused scenery, seems to be an acceptance of the fiat money as a temporary monetary solution, “... the work for which I have received the Nobel Prize was part of an effort to understand how changes in the conduct of monetary policy can influence inflation, employment, and production” (LUCAS, 1996)

Problem not yet solved and still under great scrutiny all over the Academy, not to discontinue the market necessary transactions forming the GDP, but temporarily reducing all the merchant banks, too big to fail, to administrative clearing function. Such frame is recalling the social accountancy centers in previous planned Comecon economies, without any regard of the intrinsic money value, leveling off, therefore, their potential utilization as vehicle for deferring consumption and thwarting the total amount of saving in the economy necessary to economic growth and innovations.

In this case, the stabilization funds and all the Central Bank’s facilities like the Tltro (Targeted long Term Refinancing Operation), without regard of any intrinsic money value, might keep alive the left monetary function of medium of exchange.

Whenever banks operate as social accounting centers, just enduring the operations of existing firms and related activities and employment, the most relevant market function, the efficiency assessing mechanism ceases to exist. Without the bankruptcy clearing off inefficient units, if too big to fail, the risk becomes the adding up unrequested mass of merchandise, to stock in warehouses without specific final demand, as long as consumers will be free to choose. (FRIEDMAN, ROSE FRIEDMAN).

Our modern models adjust the Rational expectations and Theory of Price Movements (LUCAS, 1996) econometric models with the Irrational Exuberance of unpredictable bubbles progression in a stable price scenery as seen by (GREENSPAN, 2013), by after an empirical experience of unforeseen slumps by both the FED and the IMF econometric refined complex models. In other words: “The aftermath of a financial crisis is always brutal, and this was an exceptionally brutal crisis. Americans had emerged with less wealth, less disposable income, and less confidence about the future” (GEITHNER, 440). From a different perspective, the author bought a splendid house in Washington for a double price request two years before just a few months before the subprime slump: “.... the Fed’s response was very much in keeping with the historic role of central banks, which is to provide lender of last resort facilities in order to calm a panic.” (BERNANKE, 97) Was this a panic choice as the Camp David 14 August 1971 when Nixon and his advisers, as narrated by Arthur Laffer, the microeconomics supply side prophet in his Return to Prosperity, took a panic decision to debase the dollar from gold starting the longest deepest monetary confusion ever.

Other likely solution pursuable might be a slow general market adjustment of cost of labour, which could slowly level off local asymmetries and under a general productivity and technological progress, leave the previous higher nominal levels with lower medium values with a higher purchasing power as a result of market forces readjusting the production on a geographical basis.

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CATCHING-UP AND INTEGRATION IN NEW AND FUTURE EU MEMBER STATES THROUGH FDI

ABSTRACT

Economic transformation of former socialist economies which has taken place with the fall of the Berlin Wall has been a long and difficult process among these economies which had to adjust to the new market environment, change the control and the organisation of their economies, find out new specializations in order to compete and sustain competition coming from developed market economies, particularly from the EU-15. Desintegration of former economic links, changes in property, institutional and social relations, not to speak of the impact of the inter-ethnic wars (for the ex Yugoslavia States) have deeply effected their recovery and competitiveness. The pace of transformation has been uneven, depending of the speed and the range of economic changes, the willingness of political leadership to go ahead in the transformation. Lack of capital, technological resources has hampered the process. « Late comers » and countries on the waiting list to integrate the EU can reflect on the many difficulties encountered by their predecessors.

In this context, Foreign Direct Investments (FDI), besides other measures, are considered as an important tool both to develop, modernize and integrate local companies by linking them to major firms operating in the EU-15 and elsewhere. Governments, through institutional reforms set up attractive policies in order to welcome foreign investments. Through FDI, local companies have access to capital, markets, know how. They develop their skill and contribute, to some extent, to the regional value chain.

The aim of the paper would like to address some important points dealing with attractiveness and localisation of FDI in the region, assess linkage effects and the way companies from the region contribute effectively to networks. It would also raise the question of appropriation of know how by receiving companies.

Key words: integration, foreign direct investment

JEL classification code: F36

1. INTRODUCTION

The experience of the recent enlargement within the European Union is unique if we consider both the number of countries, the population, the level of economic development, the systemic characteristics of most of these countries, the speed and the cost. Those countries have supported in less than twenty years, three major shocks: a systemic shock with the implosion of the socialist system, an economic shock with the adjustment to the new market environment, an institutional shock with the membership to the European Union (EU) for those who have applied to become members. A fourth shock, for some last comers and further EU members has been the violent disintegration of the Former Yugoslavia, which has delayed and hampered negotiations for future membership of the former Republics involved in the conflict (Croatia, Serbia...)

The EU enlargement to 12 new members, of which 10 were communist economies under the control of the Soviet Union, took place in 2004 (10) and in 2007 (2), it has been the outcome of a long transformation process which started right after the fall of the Berlin wall in 1989.

During this process, the leaders of those economies had to handle and manage to reach two main objectives: the transition from a socialist economy to a market economy, on the one hand and the upgrading of these economies in order to allow them to become future members of the EU on the other hand.

Following the June 2003 EU summit in Thessaloniki other candidates are crowding in at the door, all, except Turkey, from the Western Balkans (ex-Yugoslavia States, Albania), some being very close to the requirement to become a member (Croatia will officially join in January 2013), other have been admitted as “accession States” and are discussing with the European Commission the fulfilment of conditions and the timing to become officially members.

The round of new membership had strong impact on the functioning of the European economy, both in terms of regulation, distribution of resources, place of economic and regional development, catching up policies (converging policies). The structural and regional imbalance among « old » and « new » member states, the need to re-industrialize many regions in order to create new jobs and wealth are real issues. Regional GDP per head among the 271 EU regions (NUTS 2) displays a very high disparity with the poorest region in eastern Bulgaria scoring 27% against 332% for Inner London. In the same time, as it can be witnessed in some regions of Central and Eastern Europe (The Bratislava region, Western Hungary, Warsaw region and Southern Poland), there are strong movements of industrial development, relocation of new industries, even in countries and regions which didn't have specific advantages in this field under the socialist system (see the car industry in Slovakia).

This goes along with an important flow of foreign capital pouring in the region where the

rate of domestic accumulation is still very low and would never match investment requirements to develop a strong industrial base. This raises the question of the development of “a capitalist economy without capitalists” which has been underlined earlier at the beginning of the transition. On the other hand, it highlights the fact that industrial recovery and economic growth are fuelled by foreign investments in the region. FDI has contributed to create a new industrial landscape in the region, it has also created a new economic dependency of these countries: most of them are today the host of big transnational corporations which have a strong impact on domestic industrial structure, specialization, ownership, developing strong links with Western European economies.

Today Eastern European economies appear to be a backyard for Western Economies which, taking advantage of proximity, low costs, qualified labour, have relocated businesses which account, in some countries, for the main parts of fixed capital, added value, exports. These investments have contributed to create strong linkages between western Multinational corporations and their regional subsidiaries. On the one hand, they have taken advantage of existing competencies inherited from the former socialist system (Radosevic, 2004). On the other hand, their presence has contributed to the catching up, the development of new specialisations.

In this contribution, our aim is to highlight the transformation of these economies with their linkage through their new specialization, control to EU-15 economies through the strong presence of Western Multinational Corporation (MNC).

Section 1 presents the main components of transforming policies conducted in the region; section 2 assesses the role of FDI in the region has a driver of sectoral adjustment and catching up. Even for Balkan ‘late comers’ countries that have lately adjusted, Section 3 concentrates on the development of a new industrial area illustrating the impact of FDI and the linkage strategy with Western companies which has resulted.

2. A WIDE ENLARGEMENT STRATEGY

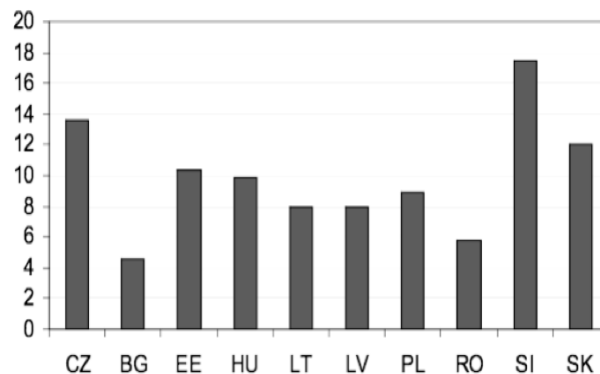
2.1 A Difficult Adjustment

Considering the size, the population, history, level of development, the last wave of enlargement, which has taken place in 2004 and 2007, is exceptional if we consider the history of the EU expansion since the foundation of the Common market in the late fifties.

The number of new members entering in one row: up to now, earlier enlargements consisted of the entry of up to three countries, generally of same economic level which had no difficulty to adjust to the new institutional and economic environment as they were already developed market economies (with the notable exception of Spain, Portugal and Greece).

Difference in living standard and income distribution. All the new members, even the most economically advanced (Slovenia, Czech Republic) are still far behind the mean level in the EU-15. With the exception of Cyprus and Malta, the 10 countries from Central and Eastern European countries have a mean GDP per head which is 50% compared to EU-15. The collapse of the former socialist industries has created strong regional inequalities and a high level of unemployment.

Figure 1: GDP per head (1000 €), 2010



70%-80% of EMU average: Slovenia, Czech Republic, Slovakia
 50%-60% of EMU average: Estonia, Hungary, Poland, Lithuania, Latvia,
 Around 40% of EMU average: Bulgaria, Romania

Source: Eurostat

A systemic dimension. It is the first time that the EU integrates former socialist countries with noticeable differences among them: 3 countries (the Baltic States) were part of the Former Soviet Union, one in the former pro-market Yugoslavia (Slovenia), other belonged the COMECON and had partly specialized their economies in order to serve the Soviet economy and developed an autarkic economies with low specialization and limited exchanges with the world economy. In all cases, those countries had to develop market mechanisms, and then adjust to the standards of the EU to be able to support the competitiveness from the other members' states as stipulated by the EU regulations.

A new geopolitical environment. With this new wave of enlargements, the frontiers of the EU are moving eastward and southward raising new questions: security, political and economic cooperation. The European Commission and the EU leaders have set up a new neighbourhood policy which has to match different aims: assure the integration of the new members without deepening the gap with countries that are not yet members and that will join the EU one day (West Balkans countries), set up specific mechanisms to develop economic cooperation with other countries (especially from the South of Europe, Middle East and North Africa countries), fill up the strategic partnership with Russia, securing

peaceful development in the region. The opening of official discussions with Turkey illustrates a sharp question discussed in the EU concerning where up to close the frontier of Eastern border of the EU.

2.2. *Managing the transition*

Integrating the EU is the last step of the long process of transformation. A precedent step has been the transition from non-market to a market economy. This has required from policy makers a set of tools and policies in order to speed up and deepen the process of transformation. Consensus, among decision-makers with the population, has been reached in some countries on the different objectives to match; in other countries, dispenses prevailed and have limited both the scope and the pace of reforms.

In spite of these differences, all former socialist countries shared among them common characteristics concerning the industrial organisation, the control of firms, their financing, their level of technology, their specialisation in basic industries (military, heavy industries), their poor records in intermediary and consumer goods, the total absence of a financial industry, the under-development of services industries. This has shaped what we could call a “bad industrialisation” if we refer to the mode of allocation of resources among sectors in market economies, to the low rate of innovation, to the under-capitalisation of firms, and, finally to the rigidity of the whole economic system. A socialist company has never been considered has an autonomous centre of decision-making, managing its material, and human and financial assets, following a strategy among competitors. On the contrary, the system had low or even inexistent incentives, the State had a paternalist attitude towards companies, providing finance, capital goods, parts, creating a permanent shortage situation, leading large parts of the population either to “live on the beast” or to enter in illegal (but often tolerated) activities of the unofficial economy. Finally, the autarkic organisation of foreign trade, at the level of the former COMECON, has contributed to develop many comparative disadvantages among the economies of the region.

Transition is not a *tabula rasa*, although that many industries have been difficult to turn around and to adjust and that many “industrial cemeteries” filled up the landscape in countries which had concentrated their industrial development in sector finally difficult or impossible to adjust.

2.3. *The Great Transformation*

How to go to the market? How to adjust and restructure such economies, how to change the behaviour of workers and consumers confronted with a new environment such as unemployment, strong inequalities, insecurity concerning the future of important fractions of the population? How to create, often from scrape, a market economy? Did privatisations and the right to create new businesses are sufficient to promote entrepreneurship? Is it possible to jump from an administrated economy towards an institutional capitalism,

economising on entrepreneurial capitalism which has played a crucial role in the early step of capitalist development in shaping the industry through the growth of big industrial groups? What kind of institutional compromise can be reached in order to control efficiently new private companies? Does a strong financial system is preferable to monopolies, *chaebols* or *keretsu* types of organisation in order to foster growth, fill the technological gap with western developed economies?

The post-socialist transition has focused around four set of policies, each set having specific aims to reach on the one hand, the four set being interlinked, on the other. Concretely, this means that government which have committed themselves, let say only on two sets leaving apart or paying less attention to the two others (which is the reason in the delay of some countries to join the EU) have failed to adjust rapidly their economies and to create the new market environment necessary to support competition in an open economy.

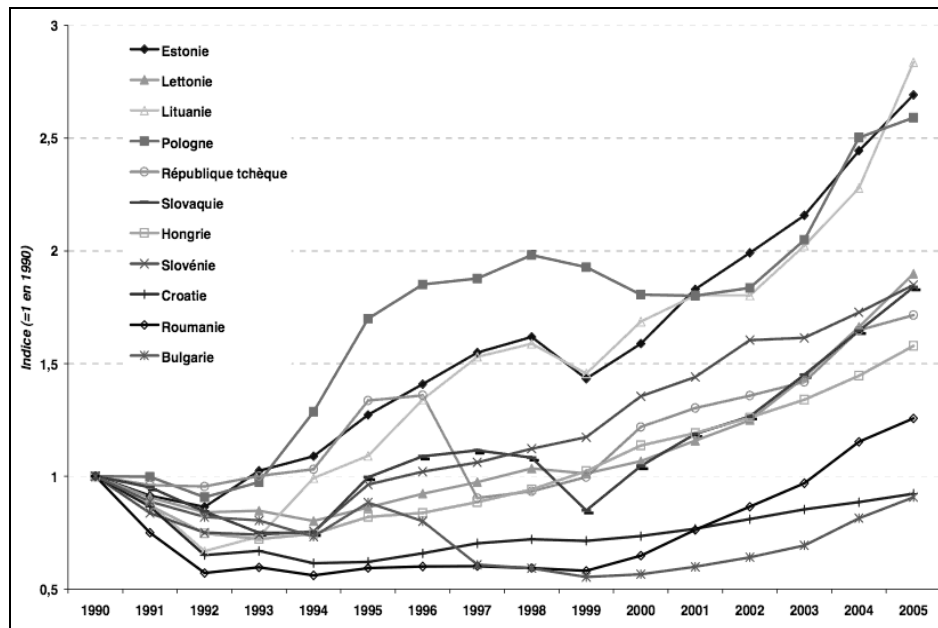
a) Macro stabilisation for containing deficits and curbing inflation by reducing subsidies, increasing interest rates, introducing competition through liberalisation of foreign trade. Partial convertibility (before total liberalisation) has created a strong incentive to adjust, to relocate resources in more productive sectors with export prospects. Almost all governments have followed strict macro-policies.

b) Implementation of market institutions and adoption of new regulation assuming property right and protection of private investments, establishment, economic laws on companies, for competition, for labour; creation of financial markets, of a two tier banking system.

c) Re-entering into the world economy, lowering tariffs and other entry barriers, promoting the development of new specialisations: in few years, all countries will have switched their exports towards Western markets, benefiting of price advantage but also of specialization of their exports on higher added value segment in part thanks to re-exporting strategies of MNC towards Western markets.

d) Privatisation and restructuring former state-owned enterprises in order to de-monopolise big industrial groups by breaking them down through direct selling or through mass privatisation (free distribution to the population or to workers of the units concerned).

Figure 2: Changes of the manufacturing production in CEES (1990-2005)



Another dimension of the privatisations strategy, privatisations “from below”, has been the right to new entrepreneurs to enter the market and to establish their businesses (SME), it has also facilitated the entry of foreign enterprises on these new markets through majority acquisition (through privatisations), new investments (Greenfield investments) or joint-ventures following opportunities, risks, legal environment.

In all cases, new owners (external, former managers and workers, depending on how privatisation has been implemented) had to reshape very quickly their businesses by investing in order to avoid the loss of value of their new assets or to be stuck by strong insiders opposing the necessary restructuring. Corporate governance has become an important issue in the region, along with the development of competition policies and of financial markets.

2.4. Transition and integration

Besides the building up of a new institutional environment, privatisation, the search of new competitive advantage concentrating on industries and services which could compete with EU-15 has been the main economic policy objective. The task has been made difficult as there were no more central bodies to promote and finance industrial policies at sectoral levels, there were any managing competencies available, the financial and economic environment was not clear. In the same times, the former specialisations of Central European economies have disappeared with the collapse of the Former Soviet Union as exports destinations shrank.

Price competition, in the first step has played an import role in re-switching exchanges towards Western markets, then, quality effect has taken the lead, mostly thank to the role of FDI in the region which have been attracted by market prospects, low labour cost and high quality of human resources, quality of human resources. Restructuring has pushed non-performing companies to leave the market. Market opportunities have attracted foreign companies, leading to a strong connection with EU-15 economies both in inter and intra trade, the latter showing the level of integration with EU economies (Table 1).

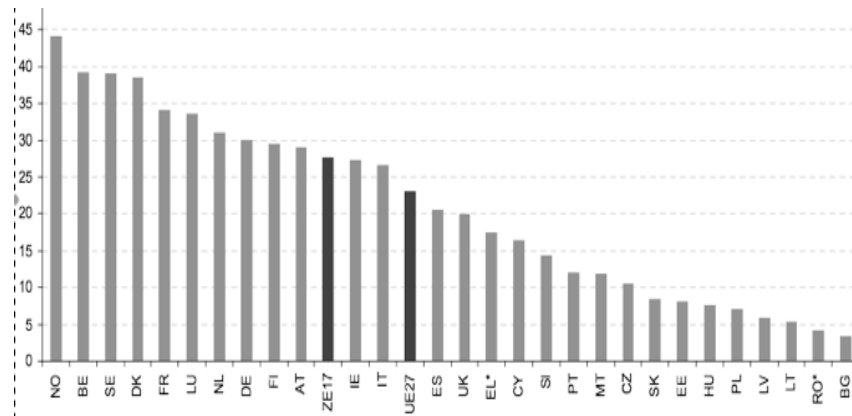
Table 1: Foreign trade structure with the EU according to the nature of the specialization, early years of the transition (in %)

	Intra-Industries Trade			Inter industrial
	Horizontal	Vertical	Total	
Poland (1998)	6.3	25.5	31.8	68.2
Hungary (1998)	7.4	39.1	46.5	53.5
Czech Rep. (1998)	10.9	47.0	57.9	42.1
Slovakia (1996)	5.7	19.7	25.4	74.6
Spain (1995)	19.5	34.2	53.7	46.3
Portugal (1995)	10.5	22.1	32.6	67.4
Greece (1995)	4.6	9.0	13.6	86.4
EU (1995)	19.2	42.3	61.5	38.5

Source: Conjoncture, BNP, September 2004, n° 8

Concerning labour, new member countries have relied on two advantages: the low cost of labour compared to EU and other developed market economies, on the one hand (figure 3), and the quality of the work force on the other, which, both have played a major role in attracting foreign investment in the region.

Figure 3: Estimated Work Force Hourly Cost in manufacturing in the EU

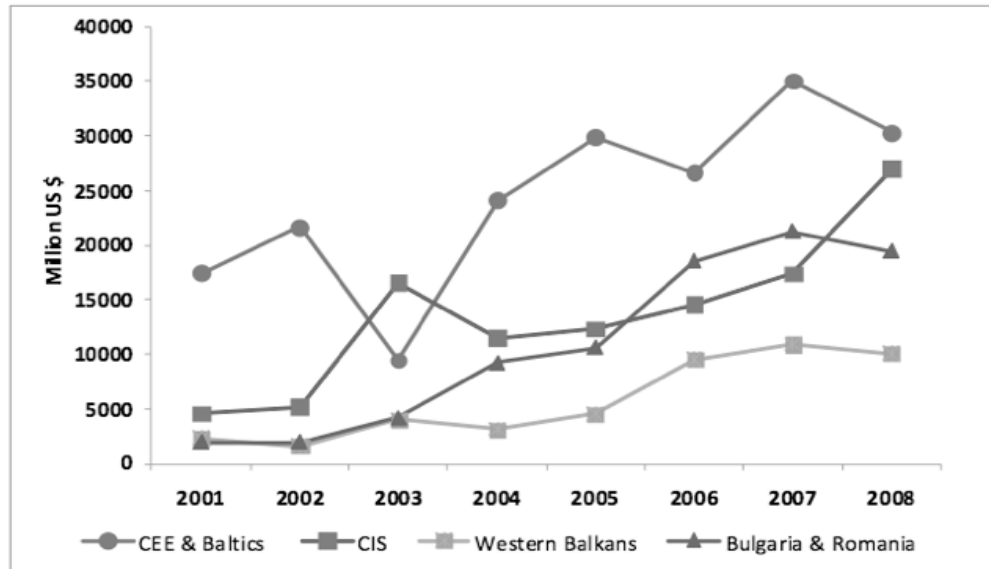


Source: Eurostat

3. FDI, AN ENGINE FOR ECONOMIC GROWTH AND REGIONAL SPECIALISATION

The combination of the different measures implemented during the 90s (stabilisation, institutions building, opening to the world economy, privatisation/restructuring of enterprises) has led to a new competitive environment in the region which shows higher rate of growth than in the EU-15

Figure 4: FDI in Transition countries



Source: EBRD

Besides these measures, FDI has played the role of a real growth engine; bringing in capital, markets access, management know-how; it has also contributed largely to the spreading of new businesses in the region, often upstream, downstream and around the businesses that has been acquired or created through greenfield investments.

Although the level of FDI is not so important compared to other destinations (around 6% of total world FDI), nonetheless it accounts for a non neglectable share of GDP, of exports in some countries. Completing the transformation has began to attract big amount of foreign capital in countries which had been reluctant at the beginning of the transition to welcome foreign investment (Czech Republic, Poland). Countries which had been left behind and had not been able to join the first wave of new membership are getting substantial share of FDI, both Bulgaria and Romania, but also West Balkan countries (Figure 4).

3.1. Attractivity policies: size, proximity, commitment

Among the different reasons which explain attractivity of countries to FDI (market access, factor costs, there are specific reasons concerning this particular region.

a) Proximity: most FDI outflows come from EU-15 companies (European or affiliates of US companies), quite few directly from overseas countries (Japan, South Korea).

b) Regional integration and division of labour. The proximity factor reduces risks and entry costs, facilitates the development of regional strategies (“linkage”) among invested companies in the region. For instance, Skoda-VW, in the Czech Republic assembles its cars and exports parts and components to other assembling units of the group. In the same time, it integrates parts and components produced in Germany or else where among the group’s partners. Another impact of the presence of Western companies is to push suppliers (first and second tier) to invest near the new facilities in host countries in order to produce bigger volumes by reducing cost (economies of scale), take advantage of the new markets. Almost all suppliers of big car assemblers have invested near the newly acquired and invested firms in the region. Thus FDI create positives externalities by upgrading existing companies with strong impacts upstream and downstream the business, creating many spill over through the economy.

c) Labour cost and qualifications: The low cost of labour plays an important role in attracting FDI especially in manufacturing industries which requires a qualified manpower. With equivalent training and productivity, the gross cost of the work force in the region was around one/fifth of labour cost in Germany at the start of the transformation. Costs are rising but convergence with Western wages level could take a very long time. Taxation is another issue: the flat tax policy applied by many countries in the region makes a big differential with taxation in the EU raising the accusation of a taxation dumping and retaliation measures from the EU commission.

Finally, mixing proximity, labour cost, workforce qualification and productivity, institutional reform and attractivity policies, country size, the distribution of FDI within the region as favoured both “early reformers” countries (Hungary), biggest countries, even last comers (Romania). Very small countries (Estonia) have taken advantage of powerful neighbourhood (Sweden, Finland) to turn around their economies.

Besides wage costs, high qualification in some manufacturing sectors require very qualified workers, technicians and engineers. Some member States are attracting investments requiring high tech manufacturing (electronics), in high added-value sectors. Big companies relocates some of there research facilities in the region. Nokia and Ericsson have R&D facilities in Hungary, Japanese, Korean and Indian companies are investing in clusters in the Czech Republic. As a result, the content of added-value products in export is increasing.

In less than 15 years Central and East European Economies (CEEE) have deeply changed their economic structure, specialisation and have matched the condition to join, for the majority of them, the EU. They have become fully fledged market economies, able to sustain competition among European economies. Some of them have been able to enter the EMU (EU-17) and adopt the euro as their national currency.

In this adjustment process, socially and economically costly, FDI has played an import role, as a kind of “uninvited guest”. Some Western companies have acted as first mover and

made a strategic move in future markets with growth potential linked to the former specialization. Other has taken advantage of ‘discount prices’ of assets in the privatisation.

Table 2: Growth of Inward Stock and Flow of FDI, 2002-2012

Countries	Inward FDI Stock, (€ Millions)		Inward FDI Stock per capita, €		Inward FDI stock as % of GDP, (%)		FDI inflow as % of Gross Fixed Capital Formation (%)	
	2002	2010	2002	2010	2002	2010	2002	2010
Bulgaria	3927	35901	500	4784	23,1	99,6	31,5	19,4
C. Republic	36884	97191	3615	9238	46,1	67,0	41,0	16,8
Estonia	4035							
Hungary	34575	12269	2975	9156	51,9	84,6	13,3	44,3
Latvia	2676							
Lithuania	3818	68522	3409	6856	48,8	69,6	19,5	6,4
Poland	46139							
Romania	7482	8250	1148	3713	27,0	45,9	11,4	8,2
Slovakia	8563							
Slovenia	3948	10166	1103	3134	25,4	37,1	25,3	10,8
NMS-10	152046							
		138000	1207	3600	22,0	39,0	11,1	10,0
		52396	344	2442	15,4	43,0	11,7	9,7
		37000	1592	6800	33,0	56,1	61,9	3,0
		11242	1979	5492	16,1	31,2	30,4	7,8
		470938	1480	4610	29,8	51,4	23,5	11,0
Albania	-	3600	-	1100	-	39,5	7,9	28,5
B&H Croatia								
Macedonia	799	5700	209	1500	11,3	45,2	-	1,6
Montenegro								
Serbia	5794	25725	1304	5800	20,6	56,0	19,1	4,4
SEE	1161	3300	574	1600	29,0	47,9	16,9	16,2
	81	4060	131	6429	6,0	135,3	38,4	70,6
	776	15780	104	2164	4,8	54,1	26,3	14,3
	8610	58065	400	2700	14,0	54,5	21,5	12,4

Source: WIIW Database on 2011 Foreign Direct Investment in Central, East and Southeast Europe

Programmes across the region. Other, finally, waited for a more safer institutional environment to invest in more secure markets. First movers have been able to negotiate good deal, holiday taxes, even subsidies to control partially or totally strategic assets. Thus they get a strategic advantage, buying market shares, building (temporary) barriers to entry against followers.

Privatization foreign investments have been a hot issue in some countries (Hungary). In both cases, as market mechanisms were not implemented, foreign companies have generally realized good deals fuelling, in some countries, a national resentment against the process of privatisation (selling the crown jewels..)

Table 3: Investments Entry and Risk Assessment

Action	Strategy	Examples
First Mover	Entry before the setting of reliable market institutions	VW in the Czech Republic
Opportunistic	Privatisation foreign invested firms	Sanofi, Suez, Hungary
Secured	In the framework of a well established institutional market environment	Tesco, Carrefour, all countries

Levels of risk have been linked to the progress of the economic transformation, to the opening up, to the institutional measures, which have been implemented.

Among the main factors that have accelerated or hampered the entry of FDI, the pace of macro-stabilisation and institutional reforms has played the major role. Except Hungary, all the other countries, at different degrees and for different reasons have hindered policies encouraging FDI entry either frightened by the control of the industry by foreign companies, or willing to keep direct or indirect control on state assets either between the hands of the States, or for possible private appropriation. Countries which have postponed FDI entry have delayed their adjustment but have not closed the door to entry: Bulgaria, Romania, Western Balkan countries are also recipients of FDI which contribute to the upgrading of their economies and to their integration in the new European industrial network. Countries which have the first opened their economies to FDI have benefited of a rapid adjustment and regional integration.

Obviously, there is a strong correlation between institutional changes and the growth of FDI in the region as shown in Table 2 some countries taking the lion's share as they have advanced in their adjustment but also benefited of their size (Poland, Romania) of their proximity (Czech Republic, Hungary, Slovakia).

The sectorial distribution of FDI illustrates both the weakness of some industrial sectors under the former socialist system and their growth potential in the framework of a market economy. Most of sectorial FDI among NMS-10 have been directed towards specific sectors: manufacturing (28.8%), trade (13.1%), financial intermediaries (18.8%), real estate, business activities (19.4%) followed by electricity, gas, water (5.8%), transport, communication (6.8%). This distribution can be explained both by the 'competitive advantage' (cost, work force qualifications) inherited from the former socialist system which was an asset for investors and by the weak development of other sectors essential for the normal functioning of market economy (trade, finance, transport). FDI distribution among 'late comers' confirms the privileged destination of foreign investors.

Finally, FDI sectoral distribution in the region highlights two interesting points:

- FDI is allocated towards sectors following restructuring or Greenfield investments, are supporting adjustment and up-grading to Western standards to beneficiary companies in order to allow them to integrate industrial networks.
- FDI brings in the flow of capital necessary to develop under-developed or non-existent sectors (trade, consumer, finance).

Proximity is another dimension of the specificity of CEES attractiveness to FDI. Most FDI in the region originate from EU-15 countries with three major countries: Austria, Germany, and Netherlands¹. Some countries (Italy, France) have a strong presence thanks to big investment in one sector (car industry) or in the financial sector (Austria). Proximity effect can be seen from the case of Austria massively present in neighbour countries as Sweden, or Germany. Major investments in specific industries (car, real estate, trade) result in the development of new industrial rings (Western Hungary, Bratislava region, Warsaw, Southern Poland) with cluster effects and strong spin off.

3.2. Attractivity of late comers: FDI in Western Balkans

In the Western Balkans countries, FDI are well known from the early 1990's. The first beneficiaries of foreign investment in the region were Croatia and Albania, respectively since 1992. Over the years, as recipients of FDI, there will be other countries: Serbia, Montenegro and Bosnia and Herzegovina. All analysis (especially from World Investment Report, 2010) show that these new CEFTA member countries over the period since 2001-2009 attracted 59.9 billion US dollars. In fact, the largest FDI inflows realized in Croatia (24.6 billion US dollars, so 41.1%), followed by Serbia (19.5 billion US dollars, so 32.5%), Bosnia and Herzegovina (6.5 billion US dollars, so 10.8%), Albania (4.1 billion US dollars, so 6.8%), Macedonia (3.0 billion US dollars, so 5.1%), Montenegro (2.3 US dollars, so 3.7%). Analysing the inflow of FDI per capita, there are many important disparities

¹ Netherlands is a special case: many European headquarters are located in the Netherlands for taxation purpose

between countries. The largest inflows generated Croatia, or 5,527 US dollars per habitant. This is 2.7 times more than the average for the region (2,059 US dollars per habitant). The lowest flow recorded Albania (1,134 US dollars per habitant), while in Bosnia and Herzegovina has level of 1,630 US dollars per habitant, which is actually at the level of 79% of the average for the region.

With regard to capital flows from the Western Balkan countries, they are compared to the much smaller inflows. For a period 2001-2009, the total equity investment was 6.6 billion US dollars, which represents only 11% of the amount of the inflow. The most developed region in Western Balkan was the Republic of Croatia, which participates even with 70.3% of the total outflow of capital. The participation of Serbia is relatively high and reaches 24.0%. Other countries from the Western Balkan region, participating in the total outflow, have only participation of 5.7%.

The evolving demand increases GDP, generates foreign exchange effects, accelerating the overall development, encourage the development of new services and products, and overcome the inconsistency in the countries in development process. Regional structure of foreign trade in goods shows that the Western Balkans countries, in export, are predominantly oriented to the countries of the European Union. Some recent data show that 55.7% of exports (the cumulative period of 2005-2009.) were implemented in the EU.

Some recent economic research analysis, for the period since 1998-2008, point to the continued presence of the deficit in the balance of export and import flows of the Western Balkan countries, a new member of CEFTA. Specifically, during the period (until the conclusion of a multilateral agreement CEFTA) deficit was recorded at the level of 8.3 billion US dollars to 24.4 billion US dollars. The period of membership in CEFTA rose from 34.5 billion US dollars to 38.7 billion US dollars. The total trade deficit in goods trade in these countries, for the period 1998-2008, reached the level of 207.8 billion US dollars. In the coming period is to be expected accession of the Western Balkans to the EU (as is the case of the Republic of Croatia who will join the EU in July 2013), their economic and political strengthening, and therefore higher and more favourable economic level of economic cooperation.

4. DELOCALISATION, SPECIALIZATION AND CONTROL: CENTRAL AND EASTERN EUROPEAN ECONOMIES AS THE BACKYARD OF WESTERN ECONOMIES?

4.1. Up-grading and the role of foreign companies

Proximity, as it has been under lined has been a factor which has accelerated the pace of FDI entry in the region. Once institutional barriers have been remove and that transition has neared its completion, FDI has spread in different sectors of host economies even among late EU comers and even, now, the last applicants to become members. Institutional

reforms have paved the way and broaden attractiveness to foreign companies to invest. Investments, as we have pointed out, have been directed in two directions: sectors where they were an obvious need to fill up the gap with the requirements of a standard market economy, particularly to supply new needs (consumer, financial services), to up-grade underdeveloped infrastructures (communication, trade).

Besides, FDI have been directed towards sectors which presented potential competitive advantages linked to proximity, to a growing domestic demand, to the qualification and the low cost of the domestic work force. It has been quiet easy for Western managers, once they have taken the control of former socialists companies to turn them around and make them work rapidly on the same standards than in the West.

Case studies have shown that adjustment of those companies have been realized very quickly, often in less than one year, often at a high cost when Western companies have been obliged to post numerous managers in the new facilities to build up the management and organisational system, both inside and outside de firm (networking building). 'Friendly policies' towards foreign investors have helped ("holiday taxes", weak protection of labour. Growth potential of domestic markets, on the one hand, economic stagnation and high wages in Western economies, on the other have contributed to the rapid development of FDI and fuelled, in some countries, relocation of capital in these economies².

² In the reality the frontier is not always clear between new investments and relocation: in the first case, there is a net investment when it doesn't have impact on local jobs (country origin).

Table 5: Largest foreign investors in CE – 2010

Company	Sector	Origine
1 Volkswagen	Car	Germany
2 E.ON	Energy	Germany
3 Metro	Distribution	Germany
4 RWE	Energy, Water	Germany
5 OMV	Energy	Austria
6 Samsung Electronics	Electronics	South Korea
7 Lukoil	Oil and Gas	Russia
8 Tesco	Distribution	UK
9 Deutsche Telekom	Communication	Germany
10 Arcelor Mittal	Steel	UK-Luxemburg
11 Foxconn	Communication	Taiwan
12 Nokia	Telecommunication	Finland
13 France Telecom	Telecommunication	France
14 Renault	Car	France
15 Fiat	Car	Italy
16 REWE	Distribution	Germany
17 Kaufland	Distribution	Germany
18 BP	Oil	UK
19 British American Tobacco	Tobacco	UK
20 Philips	Electronics	Netherland
21 Eni	Oil	Italy
22 Shell	Oil	UK-Netherland
23 U.S. Steel	Steel	US
24 Carrefour	Distribution	France
25 Lidl	Distribution	Germany

Source: Deloitte, 2011

Another driver for the development of FDI in the region has been opportunity for Western MNC to realise both horizontal and vertical investments. Horizontal, through the investment in new facilities to gain market shares (answering local and regional demand), vertical (vertically disintegrated) by transferring the value chain of the process in different location in the area. As a consequence, the whole productive organization at the European level has been deeply modified with some positive impacts (job creation in host countries) and negative (job losses in original countries).

The outcome of these strategies by European MNC has been the reshaping of the industrial landscape by realizing huge investments in some industries consuming capital and labour (automobile). Table 5 shows the relocation movement in the region. The bulk of FDI comes from Western Europe (81%°, the remaining parts from North America and Asia (Japan, South Korea). Three sub areas have come up from this movement of relocation: a first one in the Baltic with FDI from Nordic States, the biggest one eastward of Germany with Poland, the Czech Republic, Hungary, a third one with Balkan countries.

Figure 5: Stocks of foreign investments in million USD (1990-2007)



The reshaping of the Central and East European economies in the framework of enlargement policies had three consequences: a linkage effect, a hierarchical effect and domination effect.

4.2. A Linkage effect

The linkage effect is highlighted by the car industry. Almost inexistent under the former socialist system (only Czechoslovakia had an original and historic car industry; East Germany tried to develop an ersatz of the historic VW, the Trabant), other countries (with the exception of Bulgaria and Hungary barred from the URSS to develop their own industry) mainly Romania and Poland have relied of industrial cooperation and FDI (Fiat, Renault) in to develop cars which never matched the standards both in production (quality, volumes) of Western makers. Hungary was specialized in assembling buses; Slovakia has no car industry at all.

In few years, almost all the biggest European car makers have entered the market, either through acquisition, revamping all facilities (Skoda) either by Greenfield, often both, with the exceptionally growth of the sector (figure..). General Motors came in through its German partner Opel; Asian countries (Japan, South Korea) have also invested in the

framework of a larger strategy encompassing other countries (Russia, Central Asia countries).

Western producers have linked these new facilities to parent companies in different way, by designating specific functions, or specializing specific tasks. For instance, Renault develops its low cost car in Romania, where different functions, even R&D have been relocated. It's from the Romanian headquarter that the regional strategy is set up, to enter new markets, to monitor new investments. The Clio car made in Slovenia by Renault is distributed in Southern Europe, Italy, and the South of France. VW has set up a regional division of labour with some companies producing and assembling whole cars (Skoda), other making motors (Győr, in Hungary), gearboxes (Slovakia), develop jointly a new product (PSA and Toyota making light trucks in the Czech Republic). Skoda produces components for the other group's facilities, in the same time, the company has access to other companies' products. Thus complementarities and economy of scales are two dimensions to the integration with the group. In the same time, first and second tier component suppliers (almost 15 by car makers have located in the area) have set up around the new facilities in order to supply local assembly companies by reducing cost. R&D facilities are developing locally or regionally. Component makers produce for all assemblers in the region. Finally, competition among enlarged car maker group lead to develop best practices. As a result, better equipped, better managed, many of these companies show a better efficiency and competitiveness.

Table 6: Largest Foreign car maker's investors in CE

Rank	Top 500 Rank	Company name	Country
1	4	Skoda	Czech Republic
2	7	Fiat	Poland
3	14	Audi Hungaria	Hungary
4	28	Volkswagen Slovakia	Slovakia
5	48	Automobile Dacia	Romania
6	55	Toyota Peugeot Citroën Automobile Czech	Czech Republic
7	59	PCA Slovakia	Slovakia
8	62	Volkswagen	Poland
9	71	Kia Motors Slovakia	Slovakia
10	82	Magyar Suzuki	Hungary

Source: Deloitte, 2011

Today, according to the latest data, the production in the region of light vehicle (including Russia, the biggest market) account for 576352 units, nearly half of Western European (12 179938) itself equals to the US (12280019), but far behind Asia (34210699). Almost from scratch, FDI has contributed to the development of the automobile industry in the region. There are fears, of course that the present economic crisis will have negative impact on the growth of the sector. Competition from Russian (a much bigger market for which Western

maker show a big appetite) and Asia are real and could lead to a durable stagnation even a decline of this sector.

4.3. A Hierarchical Effect and domination effect

All governments, international institutions support the role of FDI as a tool for modernizing, catching up and linking backward economies. Removing barriers, setting up attractivity policies have been set up and have contributed to the adjustment of Central and Eastern economies. The presence of FDI, with the benefits of integration, has contributed to sustain economic growth in the region. Even late comers countries (Bulgaria, Romania) have benefited from entry of FDI, showing that there was still room, and opportunities in the region to welcome foreign capital.

Although it is not a frequent question, an issue with the massive presence of FDI in the region concerns the hierarchical and domination effect. In other words, CE economies have moved from a domestic accumulation of capital strategy (under the socialist system) to a model of international control of domestic assets by foreign investors. Opening up policies and privatizing public assets had to consequence in terms of control of domestic assets. First, big domestic monopolies (energy production and distribution, telecommunication network, some insurance and banking) have been kept under the hand of local governments. In other sectors (car, distribution, telecommunication, technology), big foreign companies have a dominant position (ranking, market shares) with the exception of former national monopolies (telecommunication, energy distribution) which were not offered for sale during the round of privatization of State property.

Hierarchy control can be considered from two views point. First, through the linkage effect which analysed above Western companies have both a strategic and organizational advantage (OLI) which is not eroded over the time. Does local companies, either by their initial level of technology, by the learning curve, by the relocation of R&D facilities, can become equal players with Western MNC and compete with them? Secondly, through the control effect (capital control, property rights, protection of intellectual property rights) do host country companies further autonomy appear difficult to get. Case studies in different countries of the region (Stephan, 2012) have concluded to interesting conclusions: embedness of technologies in acquired companies, the supply of qualified workforce (intermediate level, university graduates) in certain sectors are source of local technology diffusion and autonomy and constitute a comparative advantage..

Table 7: Foreign companies, by Country among the 500 First companies in Central Europe

Status 2010	Non private sector	CE private sector	State owned	Total
Bosnia and Herzegovina	/	/	1	1
Bulgaria	11	1	2	14
Croatia	3	7	7	17
Czech Republic	48	14	11	73
Estonia	5	/	1	6
Hungary	50	8	5	63
Latvia	4	2	/	6
Lithuania	1	6	2	9
Poland	97	42	41	180
Republic of Macedonia	1	/	/	1
Romania	26	1	5	32
Serbia	6	2	4	12
Slovakia	17	5	7	29
Slovenia	5	11	2	18
Ukraine	12	19	8	39
Total	285	116	96	500

Source: Deloitte (2011)

Finally, there is a wide consensus on the positive role of FDI in the region both in terms of growth, of catching up, integration. But the question which remains is to which extent the positive externalities created by the presence of FDI can expand? How local companies, subcontractors, SME can benefit of the positive impact of FDI in the region?

Table 8: Sectorial breakdown by ownership

Status 2010	Non private sector	CE private sector	State owned	Total
Consumer Business and Transportation	91	46	20	157
Energy and Resources	63	31	54	149
Life Sciences and Health Care	15	9	-	23
Manufacturing	79	28	10	116
Public Sector	-	-	5	5
Real Estate	9	2	-	11
Technology, Media and Telecommunications	30	4	5	39
Total	287	119	97	500

Source: Deloitte (2011)

4. CONCLUSION

In this paper we have discussed three important points which make CEECs integration and upgrading a particular case.

First, the magnitude of the last rounds of enlargement and integration to which the EU has faced and the importance of the institutional shocks to which new comers have been confronted. Speed (less than 15 years for the most advanced countries) and deepness of changes that have occurred (economic adjustment, opening up, development of market mechanisms) at a relatively low cost (for the EU budget) have been the main characteristics of this round of enlargement.

The process of enlargement and integration has been almost continuous with further integration of 'late comers' (Bulgaria, Romania), and further acceding countries from Western Balkans.

The role of FDI has played an important role in the region to transform, adjust, specialized industries, creating jobs, increase exports of higher added value products, and reconstruct an industrial network linking industries of the region with Western companies and markets.

Mostly, the driver to enter these countries has been opportunities for market growth, for competitive advantages (getting good and cheap domestic assets). It has been also an opportunity to deeply reshaping the European industry, introducing a new division of labour through specialisation along the regional value chain.

Entry of Western Balkan still has a positive impact on regional growth both in term of economic adjustment of new specialization. Although the linkage factor is less evident, FDI is pouring in the region, and, at a lesser pace, contribute to the economic transformation of the region.

REFERENCE

Boillot J.J. (2003): *L'Union européenne élargie. Un défi économique pour tous*, Les études de la Documentation française

Brunat E & X. Richet (2001): "Asset specificity, restructuring and industrial policy in transforming economies: The Russian experience", in D. Giannias, L. Maroudas, Y. Rizopoulos (eds.): *European Integration & Economies in Transition*, East-West Conference Proceedings, East-West, University of Crete, CD-ROM

Deutsch Bank Research: "Offshoring to New Shores. Nearshoring to Central and Eastern Europe", *Economics* 58, August 14, 2006

Deutsch Bank Research: "Offshoring to New Shores. Nearshoring to Central and Eastern Europe", *Economics* 58, August 14, 2006

- Drouet M. et X. Richet (eds.) (2007): *Vers l'élargissement de l'Union européenne à l'Europe de l'Est*, PUR, Rennes
- Dyker D (ed.) (1998): *The Technology of Transition. Science and Technology Policies for Transition Countries*, CIE, Budapest,
- EBRD: *Transition Report 2007*, EBRD, London,
- EBRD: *Transition Report 2009*, EBRD, London
- Ernst & Young (2005, 2006): *European Investment Monitor 2005 Report*
- Estrin S, X. Richet and Josef C. Brada (2000): *Foreign Direct Investment in Central Eastern Europe : Case Studies of Firms in Transition (Microeconomics of Transition Economies)* N.Y, M.E.Sharp
- Financial Times (2005): "Special report: Reinventing outsourcing", June 2, 2005
- Guerraoui D. and X. Richet (1997): *Les investissements directs étrangers. Facteurs d'attractivité*, Les Editions Toubkal, Casablanca and l' Harmattan, Paris
- Guerraoui D. and X. Richet (2001): *Economies émergentes: politiques de promotion de la PME. Expériences comparées*, L'Harmattan, Paris
- Guerraoui D. and X. Richet (2005): *Intelligence économique et veille stratégique - Défis et stratégies pour les économies émergentes*, 2005, L'Harmattan
- Henriot A. (2004): "L'investissement direct dans une Europe élargie", *Centre d'Observation Economique*, CCIP
- Huchet J.F. and X. Richet (2005): *Gouvernance, coopération et stratégie des firmes chinoises*, L'Harmattan, Paris
- Huchet J-F, X. Richet, J. Ruet (eds.) (2007): *Globalisation in China, India and Russia. Emergence of National Groups and Global Strategies of Firms*, Academic Foundation, New Delhi
- Hunya Gabor (2009): *FDI in the CEES under the Impact of Global Crisis: Sharp Decline*, WIIW, Vienna
- Kaminski B. (2004): "Production Fragmentation and Trade Integration in Enlarged Europe: How MNCs have Succeeded Where CMEA Had Failed?", *Discussion Paper*, University of Maryland
- McKinsey (2006): "The overlooked potential for outsourcing in Eastern Europe", *Research in Brief*
- Meyer K. (1998): "International Production Networks and Enterprise Transformation in Central Europe", *Comparative Economic Studies*, XLII, n° 1, p. 135-150
- Meyer K. & S. Estrin (2000): "Brownfield Entry in Emerging Markets", *Copenhagen Business School, mimeo*, 12 p.
- Meyer K. and S.Estrin (2007): *Acquisition Strategies in European Emerging Markets*, Houndmills, Palgrave
- Michalet C.A. (1999): *La séduction des nations où comment attirer les investissements*, Economica, Paris
- Michalet C.A. (2004): *Qu'est-ce la mondialisation?*, La Découverte
- Michalet C.A. (2007): *Mondialisation, la grande rupture*, La Découverte

- Mollet M. and X. Richet (2003): "Transformations économiques et stratégies de rattrapage en Europe de l'Est. Quelles leçons de l'expérience hongroise pour les économies balkaniques?", *Région et Développement*, n° 2003-18
- Mouhoud El Mouhoub (2006): *Mondialisation et délocalisation des entreprises*, La Découverte, col. Repères
- Neffati H. and X. Richet (2004): "L'attractivité comparée des investissements directs étrangers de la Tunisie et de la Hongrie", *Revue Région et Développement*, n° 19 – 2004
- Redzepagic S. (2007): „The future of the European Economy“, *Economic Analysis*, Volume 40; Issue 3-4, Autumn 2007; EA 40(3-4) 1-110 (2007), Institute of economic sciences, Belgrade, 2007, p. 58-67
- Redzepagic, S., Djukic M. (2011): „Serbian place in the process of globalization toward the European integration“, in: „Contemporary issues in the integration processes of Western Balkan countries in the European Union“, Ljubljana: International Center for Promotion of Enterprises, 2011
- Redzepagic S., Richet X. (2008): „The attractiveness of the Western Balkans for the FDI“, *Economic Analysis*, Volume 40; Issue 1-2, Spring 2008; UDC: 327.39:061.1 JEL: E22, 018; EA 40(3-4) 1-110 (2008), Institute of economic sciences, Belgrade, 2008, p. 48-58
- Richet X. (1997): "Firm Adjustment and Barriers to Restructuring in Transition Economies" (with P. Hare), *Cuadernos del Este*, n° 20, p. 155-164
- Richet X. (1998): "L'IDE dans les PECO et leur impact sur le comportement des entreprises", in D. Guerraoui et X. Richet (eds.)
- Richet X. (2001): *Les investissements étrangers dans les PECO*, DREE Revue Elargissement, Spécial IDE
- Richet X. (2004): "Transforming Economies, Technology Transfer and Multinational Corporations Strategies", *Zagreb International Review of Economics and Business*, n° 1, 2004
- Richet X. (2005): "Redes internacionales de producción y nuevas economías de mercado: estrategias de los fabricantes de automóviles en los PECO", *Información comercial española*, n° 818, October-November
- Richet X. and J. Ruet (2006): "The Chinese and Indian Automobile Industry in Perspective. Technology Appropriation, Catching up, and Development", *mimeo*, 30 p.
- Sachwald F (2005): "La localisation de la production en Europe : impact de l'élargissement et de la mondialisation", *IFRI*
- SESSI (2006): *L'industrie en France et la mondialisation*, SESSI, Ministère de l'Economie, Paris
- Stephan J. (2012): *The Technological Role of Inward Manufacturing Foreign Direct Investment in Central East Europe – An Investigation into the Condition of Technology Transfer and Diffusion*, Habilitationsschrift, T.U. Bergakademie, Freiberg, 240 p.
- Stosic I., Redzepagic, S. Brnjac Z. (2012): „Privatization, restructuring and unemployment: The case of Serbia“, in: New challenges in changing labour markets. Belgrade: Institute of Economic Sciences, 2012, p.355-372.
- The Economist (2005): "Outsourcing in Eastern Europe: the rise of nearshoring", Dec. 3
- UNCTAD, *World Investment Report, 2005*, UN, Geneva
- Uvalic M. (2011): "Serbia's transition flaws: why has export-led growth not been achieved?", in Michael Ehrke (ed), *Export-led Growth. Central European Experiences – Magic Formula for the Western Balkans?*, Belgrade: Friedrich Ebert Foundation, pp. 77-90 (ISBN: 978-86-83767-32-8).
- Wolf M. (2004): *Why Globalization Works*, Yale University Press

PART II

**INTERNATIONAL BUSINESS
AND COMPETITIVENESS IN
CHANGING GLOBAL
ENVIRONMENT**

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ACCESSION OF BOSNIA & HERZEGOVINA AT ECONOMIC SYSTEM OF EUROPEAN UNION: IMPACTS ON THE STRUCTURE OF INTEREST RATES, ON COMPETITIVENESS AND GROWTH PROSPECTS OF GDP

ABSTRACT

The economic and financial characteristic of Bosnia & Herzegovina (BiH), shows that competitiveness is also represented by the trend in interest rates, because the Country is classified as a "bank-centric system", where the access to sources of financing for business comes from the level of accessibility and cost of bank credit.

The banking sector operates in a stable macroeconomic environment with low inflation and exchange rate risk equalized to the Euro.

This framework was favorable to the development of bank loans, which total, in May 2012, have reached an amount of 15.67 billion KM.

The weighted average interest rates in 2012, was 6.73% on short-term loans, and 7.72% on long-term credits. This remarkable structure of interest rates is a weakness in access to credit and therefore weak in competitiveness of the Country.

Through a regression analysis on the evolution of credit default swaps in the Peripheral Countries of the Euro Area, which would be attributable BiH, we estimated in 240 basis point the theoretical spread over German bunds; currently this value for BiH is estimated at about 510 basis points. The hypothesis of access of the Country in the economic system of the EU could lead to a potential reduction in the interest rates of the credit lines of 270 basis points, with positive effects on the competitiveness of the economic system of BiH, estimated in a lower interest payments on bank loans potentially around 420 million KM.

The phenomenon of reduced interest rates applied to bank loans, has a positive effect on the credit capacity of the economic system of the Country. The application of the discounted cash flow model to the cash flows of the economic system, conservatively assuming a scenario of no growth, a time horizon conventionally defined in 7 years and discounted at a interest rate, reduced by 270 basis points to incorporate the 'hypothesized effect of reduction in interest rates related to accession of the Country into the economic

system of the EU, generating an increase in the credit capacity of the economic system of BiH by 9.86%, amounting potentially to 1.55 billion KM, of further credit that could be granted by the banking system, maintaining the current risk credit profile, with, therefore, a favorable return on the prospects for economic growth of the Country.

This impact can be measured using a metric that considers the phenomenon of the GDP multiplier of bank loans; assuming conservatively that the multiplier is equal to 3.32, the impact on GDP of BiH, by the reduction in interest rates, would be 5.1 billion KM, representing a potential growth in GDP of 14%.

In summary, the analysis shows that the access of BiH to the economic system of EU could generate a positive effect on the competitiveness of the economic system of the Country, through a reduction of 270 basis points of financial interest rates applied in bank loans, with a positive impact on the GDP of the Country estimated in a potential growth of 14%.

Key words: credit capacity, multiplier bank loans, discounted cash flow model

JEL classification: G21

1. INTRODUCTION

The purpose of the research presented aims, through an analysis of the economic and financial system of Bosnia and Herzegovina (BiH), to analyze the current structure of interest rates applied by the Country's banking system in the development of the credit function, comparing it with the rate curve of credit referred to the Peripheral Countries of the Euro and determining, prospectively, what benefits may accrue for the Country's economic system in the case of a structural reduction the interest rate curve on bank loans, resulting from the entrance of BiH in the economic system of the European Union.

Through regression analysis it was estimated the benefit derives to BiH - assuming its entry into the economic system of the European Union - in terms of reduction in interest rates of bank loans which would apply to the economic system of the Country.

But the appearance of a phenomenon of structural descent in the cost of bank financing, generates, then, two phenomena both economically favorable:

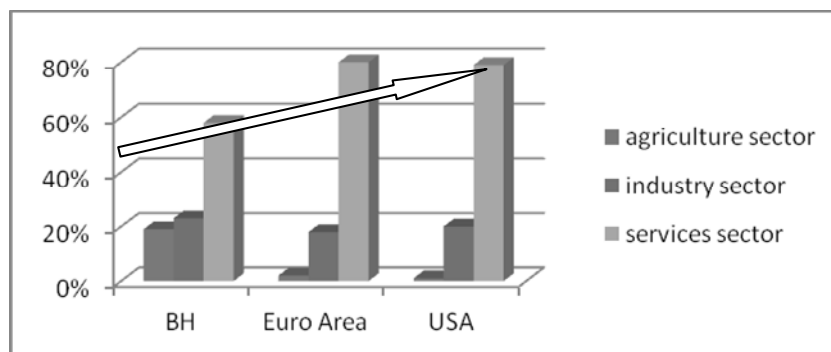
- improves the competitiveness of the economic system, because it reduces the cost of funding for businesses;
- improves the credit capacity of the Country's economic system, measured with discounted cash flow models, determining, thus, a stock of additional credit that could be granted by the banking system while keeping the current profile of credit risk, with favorable impacts, therefore, in the dynamics of GDP growth.

Finally, through an econometric analysis, it was estimated the value of the multiplier of bank loans; with this economic indicator it has been possible to quantitatively evaluate the impact on GDP of the BiH resulting from the improvement of the conditions of access to credit.

2. BANKING SYSTEM OF BIH AND STRUCTURE OF INTEREST RATES

The economic system of the Country shows a composition of GDP by sector which focuses on services (about 58%), and showed a weight of the industrial sector 23% and agriculture at 19% (see. Ministry of Foreign Affairs Italian). This Country's economic performance, when compared to the composition of GDP in the Euro Area and the United States, shows that the services sector (which represents, in the evolutionary trend of the economic context, the sector with the highest impact on the dynamics of growth) has extensive growth margins.

Chart 1: Composition of the GDP of the BiH, the Euro Area and the United States



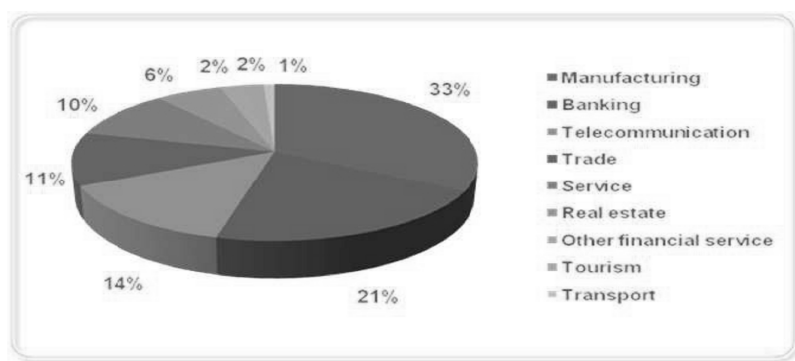
Source: Italian Ministry of Foreign Affairs and Eurostat data

The banking system has shown the market entry of several foreign banks, which created the phenomena of stabilization and consolidation of the financial sector, where banks play a dominant role (see. Italian Trade Agency and Foreign Investment Promotion Agency of Bosnia and Herzegovina - Sarajevo in December 2013), favored by foreign investment flows directed to the acquisition of private or privatized banks (out of a total of 28 commercial banks, 19 banks are foreign-owned and have reached 89.4% of total assets in the industry transfer).

The attention that the banking sector of the Country found in international investors is also determined through the analysis of foreign direct investment, which put the banking sector

in second place as a destination for such flows, with a figure of 1.1 billion euro in 2011 (Foreign direct investment in 2011: 5.4 billion Euro).

Figure 2: Areas of destination of foreign direct investment



Source: Central Bank of Bosnia and Herzegovina

The financial system of the BiH is the type bank - centric, where banks give priority to the development of direct lending, operating in an economic structure dominated by small businesses, with low possibility of direct access to the financial markets as an alternative to banking facilities. In this context, the lending activity is expressed in a direct contractual relationship between the bank and borrower firm.

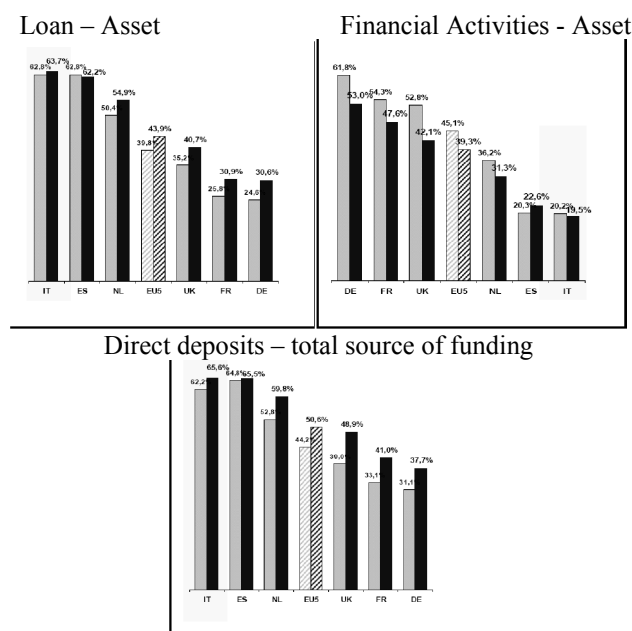
The alternative to bank - centric systems is represented by the market – centric system, where banks develop lending activities mainly through the intermediation of financial markets, because the corporate sector access to markets through the placement of its investment instruments received the required funding¹.

In order to illustrate the differences between the two financial systems indicated, limiting ourselves to the European banking context, the different structures of the balance sheet aggregated in the systems typically bank-centric (eg Italy and Spain) than the market-centric (eg Great Britain) show:

¹ “(...) There are two dominant alternative financial systems, one oriented preferentially to the banks and one oriented to the market; while in the first banks exert a crucial role in meeting the needs of consumers and businesses, in the second the banks are limited and surrogated by the financial markets, that meet directly supply and demand of funds, outside of the banking system and needs no specific institutional brokerage “M. Pines,” Integration of systems and structure of modern banking” Cedam 2003.

- high incidence of the "loans / active" in the bank-centric systems and, on the other hand, a high incidence of the "financial assets / assets" in the market-centric systems;
- Increased use of direct deposits as a source of funding in the bank-centric systems.

Figure 3: Comparisons in balance sheet aggregates of market-centric systems and bank-centric system



Source: Based on data provided by 35th Report Observatory EBR (European Banking Report)

The economic and financial characteristics of Bosnia and Herzegovina (BiH), demonstrate, therefore, that competitiveness also depends on the performance of interest rates on bank loans, because the Country is classified as a "bank-centric system", where the access to sources of financing for businesses depends on the level of accessibility and cost of bank credit.

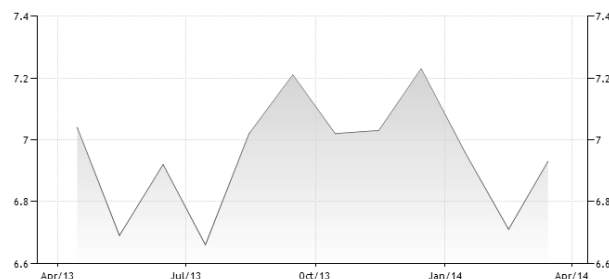
The banking sector operates, overall, in a stable macroeconomic environment with low inflation and exchange rate risk equalized for the Euro.

This framework has been favorable to the development of bank lending: in May 2012, reached an amount of 15.67 billion KM (source: Italian Ministry of Foreign Affairs).

By analyzing the evolution of the weighted average interest rates on bank loans, it can be seen that in 2012 this figure was 6.73% on short-term loans, and 7.72% on long-term loans

(source: Italian Trade Agency and Foreign Investment Promotion Agency of Bosnia and Herzegovina, Sarajevo in December 2013) in subsequent years, the cost of transfer of custody was maintained at these levels.

Figure 4: Evolution of the average interest rates



Source: <http://it.tradingeconomics.com/bosnia-and-herzegovina/interest-rate>

Given the framework above, the structure of interest rates significantly and directly influences the structure of the financing costs of the economic system of the Country, therefore we can affirm that this remarkable structure of interest rates can be a factor of weakness in terms of access to credit and thus appears to be a weakness in the evaluation of the level of competitiveness of the Country.

It should also be highlighted, as will be explained later in the research, that an interest rate structure of bank credit high impact, in macroeconomic terms, also on the borrowing capacity of the economic system as a whole, reducing it; this circumstance generates, consequently, a negative impacts on prospective sources of financing used by the local economic system to finance the renovation and improvement of production cycles, and determining, thus, a potential risk reduction perspective in the level of competitiveness of the real economy.

3. ESTIMATION OF THE IMPACTS ON THE STRUCTURE OF INTEREST RATES OF BIH FROM ACCESS TO THE EU

We performed a regression analysis on the evolution of credit default swaps to five years of government bonds in the two Peripheral Countries (Italy and Spain) most representative of the Euro Area (area where theoretically relate the BiH), to assess, first, a theoretical estimation of the spread of this financial instrument with respect to the values expressed by the curve of interest rates relative to German government bond (Bund).

This estimate has considered, in order to give statistical relevance to this analysis, the average at 5 years of CDS in the periods January 2010, September 2011 and August 2014, in order to take into consideration both market contexts favorable to the Peripheral Countries participating in the economic system of the European Union, and market contexts of the type "flight to quality", where, therefore, due to a reduction in the risk appetite of financial operators, the financial assets have been transferred from the peripheral Countries of the Euro Area to core Countries.

With this analysis, the estimate of the value differential between the credit default swap average at 5 years of government bonds of the Peripheral Countries of the Euro Area, and the yield curve to 5-years of German bund, was calculated to be 240 basis points, thereby qualifying a representation of the theoretical value of the yield spread between government bond issues related to the Peripheral Countries of the Euro Zone and the German government bond (always taking into account the maturity on the yield curve to 5 years).

Table 1: Determination of the credit default swap (CDS) at 5 years average for the two peripheral countries most representative of the Euro

	Value of the government CDS at 5 years (in basis point)			
	January-10	September-11	August-14	
Italy	93	575	148	
Spain	94	408	123	
	93.5	491.5	135.5	Average value --> 240.16

Source: our elaboration on data provided by the Italian Banking Association (ABI) and Il Sole 24 Ore

Taking into consideration the current evolution of the weighted average interest rates on bank loans, it can be estimated currently at around 510 basis points, the spread theoretical 5-years of government bond market of BiH.

The hypothesis of access of the Country in the economic system of European Union, could generate, so, a potential reduction in interest rates of credit lines of 270 basis points, with positive effects on the competitiveness of the economic system of BiH, estimated at a reduction of interest costs on bank loans potentially amounting to about 420 million KM.

Table 2: Analysis of the evolution of the estimated cost of the interest on bank loans in the Country

a) Stock of bank debt (data in May 2012 - billion KM) (source Italian Ministry of Foreign Affairs)	15.67
b) Weighted average interest rates on short term loans (data to 2012) (source Italian Trade Agency and Foreign Investment Promotion Agency of Bosnia and Herzegovina, Sarajevo December 2013)	6.73%
c) Weighted average interest rates on medium and long term loans (data to 2012) (source Italian Trade Agency and Foreign Investment Promotion Agency of Bosnia and Herzegovina, Sarajevo December 2013)	7.72%
d) Hypothesis weighted average interest rate on bank loans (arithmetic mean - $d=(b+c)/2$)	7.23%
e) Hypothesis of reduced weighted average rates on bank loans estimated	2.70%
	4.53%
f) Hypothesis weighted average interest rate on bank loans in the case of access of BiH to the economic system of the EU ($f=d-e$)	

g) Hypothesis total cost of bank financing in the current structure of interest rates of BiH (billion KM) ($g=a*d$)	1.13
h) Hypothesis cost of bank financing (for the same stock) in the access of BiH to the economic system of the European Union (billion KM) ($h=a*f$)	0.71
i) Benefit to the economy of BiH by a reduction in interest rates on bank loans resulting from the access of BiH to the economic system of the European Union (billion KM) ($i=g-h$)	0.42

4. IMPACTS RESULTING FROM THE REDUCTION IN INTEREST RATES ON THE CREDIT CAPACITY OF THE ECONOMIC SYSTEM OF THE BIH

The phenomenon of reduction of interest rates, applied to bank loans, has a positive effect on the credit capacity of the Country's economic system.

The method used, and described below, to determine the effect considered two aspects:

- the first was to define an algorithm for the calculation of credit capacity, understood as the limit of senior debt that the Country's economic system is able to support with their cash flows, applying to national economic variables the same methodologies used for the determination of credit capacity in the activities of corporate banking;
- the second was to measure the sensitivity of the credit capacity to a potential reduction in interest rates of credit lines of 270 basis points.

It's important to point out that the measurement of credit capacity changes continuously over time, as it depends on a multitude of macroeconomic and microeconomic factors not quantifiable and predictable aprioristically, such as, for example, the current conformation and the expectations of the evolution of the economic cycle, economic and fiscal policy of the Country (which have an impact on the levels of cash flow generated), fluctuations in the income of the various economic sectors of the Country, the risk appetite of lenders, credit rating criteria used for determining the degree solvency, the structure of interest rates.

The assumptions adopted prudentially for measuring credit capacity of the Country are:

a) Scenario: the need to crystallize a minimum scenario, prudent and realistic enough, in the measurement of credit capacity is assumed a constant value of GDP at current values, adjusted for inflation effects and the absence of cyclical or seasonal.

b) Indicator of cash flow: using a size represented by the cash flows generated by the Country's economic system.

c) Definition of debt: the methodology of credit capacity used, measure the amount of senior debt structurally sustainable for economic system of the Country, in the assumption of the scenario (a).

d) Definition and calculation of the capacity of credit: the metric used to determine the credit capacity, calculate the present value of cash flow available (as indicated in point (b)) to amortize the debt (as indicated in point (c)) in a period of 7 years (time horizon for a senior debt position), considering the conservative scenario indicated.

Therefore, in this model, the calculation of the credit capacity² is expressed as follows:

² Interestingly, the analysis of credit capacity built in 1996 for the American system of agricultural credit from the Farm Credit Administration "Farmer's use of credit capacity is based on current outstanding debt compared with the debt level that could be serviced with current net cash income before interest. In 1981 credit capacity utilization peaked about 106 percent meaning that farmers', as a group, exceeded

$$\text{Credit Capacity} = \sum_{T_{cd}=1}^{Tn=7} \frac{Fm}{(1 + i_t)^{T_{cd}}}$$

where:

- *Tcd*: period of time, usually coinciding with the 7 years (time horizon which usually refer to the providers of senior debt);
- *Fm*: cash flows generated by the economic system of the Country;
- *itf*: the cost of debt at fixed rates prevalent for the economic system in the period of seven years (senior debt);
- *Tn*: time value equal to 7 years.

The methodology for calculating the credit capacity indicated can also be used to further verification by changing the object variable in the formula, such as, for example, sensitivity analysis, which aims to determine the impact on the credit capacity (and consequently on the economic system the BiH) resulting from the reduction in interest rates assumed, applied by the lending function of the banking system of the Country.

This analysis was determined by the application of the formula for discounting cash flows, which result considering the amount of debt (credit capacity), which can be amortized with KM 1.00 annual cash flow and considering different levels of interest rate, in particular, providing for a reduction of 260 basis points.

their ability to service debt out of net cash income. The high debt burden that this measure illustrates leads to the financial stakeout in agriculture that continued throughout much of the 1980s. Clearly, any upward trend in farmers' use of credit capacity should be viewed as an early signal of potential financial difficulties in the farm sector. In 1996 farmers' used of credit capacity dipped to 51 percent from 58,4 percent in 1995. This improvement followed 2 years of increases in this debt burden indicator. According to USDA's Economic Research Service, large commercial farms, as measured by farm sales, have used about a fourth of their total debt repayment capacity. Small and moderate-size commercial farms, however, have tended to use one half of two thirds of their debt capacity". Farm Credit Administration "Report on the Financial Conditions and Performance of the Farm Credit System", 1996

Table 3: Determination of the credit capacity, according to a cash flow equal to 1 KM, depending on the time horizon and the average interest rate defined

interest rate	amortization period						
	5 years	6 years	7 years	8 years	9 years	10 years	12 years
4%	4.51	5.29	6.06	6.80	7.47	8.14	9.38
5%	4.41	5.16	5.88	6.57	7.19	7.82	8.94
6%	4.31	5.03	5.70	6.34	6.92	7.50	8.51
7%	4.21	4.89	5.52	6.11	6.66	7.18	8.10
8%	4.11	4.75	5.35	5.89	6.40	6.87	7.70
9%	4.01	4.62	5.18	5.69	6.15	6.58	7.32
10%	3.92	4.50	5.02	5.49	5.92	6.31	6.97
12%	3.75	4.26	4.72	5.13	5.49	5.81	6.34

Source: our elaboration

The table above shows that the credit capacity, rising from 5.52 to 6.06, in the case of reduction of interest rates on bank loans of 270 basis points, increases by 9.86%. Consequently, the stock of bank loans, considering unchanged the credit risk assumed by the Country's banking system, increases by 9.86%.

Table 4: Estimation of the determination of the stock of bank loans of the economic system of the Country, increased by increased credit capacity

a) current amount of the stock of bank loans (billions of KM)	15.67
b) percentage increase of the credit capacity	9.86%
c) stock of potential increase in bank lending (billions of KM)	1.55
d) estimated amount of the stock of bank loans (billions of KM)	17.22

The results do, show that the application of the discounted cash flow model adopted for the cash flows of the economic system, with the basic assumptions prudently determined and derived essentially from the hypothesis of the Country's accession to the EU economic system, generate an increase in the credit capacity of the economic system of the BiH of 9.8%, estimated at 1.5 billion KM of potential additional credit that may be granted by the

banking system, while maintaining the profile of current credit risk with, therefore, a positive return on the prospects for economic growth of the Country.

5. THE ESTIMATED IMPACTS ON GDP OF BiH

The determination of the potential stock of new credit in favor of the economic system of BiH, based on the improvement in the credit capacity of the system due to the reduction of interest rates estimated from the entrance of the Country in the European Union, generate favorable impacts on the evolution perspective of the GDP; this value was measured by applying a multiplier factor of credit to higher bank credit calculated.

The definition and calculation of the multipliers of the credit must take into consideration that it is a mechanism closely related to the multiplier of the deposits of which depends, for effect of which the banks, starting from a monetary base assigned, create credit activity. This is possible when a part of the deposits transferred by the banking system to the market, following the granting of credits, returns, when not restrained, to the banks. The banks, in fact, after provisions for the amount necessary to reserve requirements, constrained by the parameters of balance sheet defined by the rules of Basel 3, will be able to use the monetary resources to grant additional loans and put it into operation mechanism of multiplication.

It was built a simulation to evaluate the credit multiplier, based conservatively on the following assumptions:

- considering a stimulus initially fully supported by a bank loan, with assumption of nominal interest rates constant to 5.00% (considering thus, conservatively, a value of the interest rates of bank loans to the economic system median between the current conformation of interest rates and the hypothesis of the estimated decline in interest rates in the event of entrance of BiH in the economic system of the European Union);
- considering a tax rate on business income equal to 10%, in accordance with the current tax environment of the Country;
- is estimated a behavior of the firms financed, where the entire credit stimulus moves in the monetary base, net of the tax impact;
- we assume a total capital ratio of the banking system by 11%, in accordance with the provisions of balance sheet of the banking system as defined by the Basel 3 rules.

With these assumptions the value of the multiplier of credits is equal to 3.32.

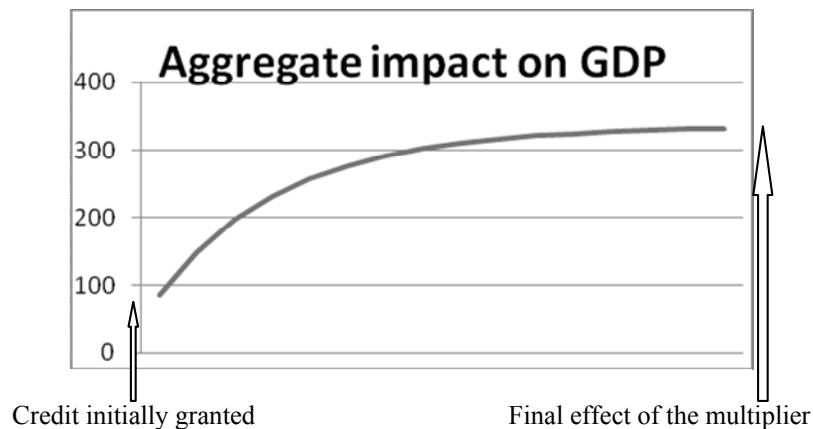
Table 5: determination of the credit multiplier by regression analysis of 15 periods of time (T):

	T0	T1	T2	T3	T4	T5	T6	T7
provisions for reserves	0	11	8.19	6.10	4.54	3.38	2.52	1.88
new credit:	100	74.5	55.50	41.34	30.80	22.94	17.09	12.73
utilization	95	70.77	52.72	39.28	29.26	21.80	16.24	12.10
impact on GDP	85.5	63.69	47.45	35.35	26.33	19.62	14.61	10.89
aggregate impact on GDP	85.5	149.19	196.65	232.00	258.34	277.96	292.58	303.47

	T8	T9	T10	T11	T12	T13	T14	T15
provisions for reserves	1.40	1.04	0.77	0.57	0.43	0.32	0.23	0.17
new credit:	9.48	7.06	5.26	3.92	2.92	2.17	1.62	1.20
utilization	9.01	6.71	5.00	3.72	2.77	2.06	1.54	1.14
impact on GDP	8.11	6.04	4.50	3.35	2.49	1.86	1.38	1.03
aggregate impact on GDP	311.58	317.63	322.13	325.49	327.99	329.85	331.24	332.27

value of the multiplier	3.32
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Figure 5: Evolution of the graphics credit multiplier in the regression analysis considered



The overall impact on GDP of BiH, resulting from an increase in the credit capacity of the economic system of the Country, therefore, can be measured using a metric that considers the phenomenon of the multiplier of bank loans. Assuming adopted (which, it should be noted, however, represents a conservative estimate), the multiplier is equal to 3.32 and therefore the impact on GDP, resulting from the reduction in interest rates, would be:

Impact on GDP = Credit capacity * credit multiplier = 5,1 billions of KM
 This impact is, thus, a potential one-off increase in GDP of the BiH of 14% (than the value of the estimated GDP in 2011)

6. FINAL CONSIDERATIONS

In summary, the analysis proposed aims to highlight that access of the BiH to the economic system of the EU could generate a positive effect on the cost of bank indebtedness incurred by the economic system of BiH, which could potentially be reduced by 270 basis points.

This evidence is relevant in the consideration that the Country's financial system is the type bank - centric, where the sources of financing of the economic operators are intermediated by the lending function of the banks (with a marginal direct access of firms to financial markets).

The reduction of interest rates on bank loans involves both an improvement in the competitiveness of the Country's economic system, for the reduction, in fact, of financial costs, and an increase in the credit capacity of the entire economy of the Country, estimated

at 1,5 billion KM of new bank lending volume without changing the profile of credit risk³ assumed by the banking system.

The expansion in bank lending, through the application of a credit multiplier estimated at 3.32, generate, finally, a positive impact on the GDP of the Country, with an estimated growth potential of the one-off 14% of this economic indicator.

REFERENCES

Farm Credit Administration "Report on the Financial Conditions and Performance of the Farm Credit System", 1996

M. Pines," Integration of systems and structure of modern banking" Cedam 2003.

³ "Traditionally with credit risk refers to two types of risk: the risk of the counterparty and issuer risk (...). Credit risk arises from the potential change in the creditworthiness of a counterparty that is translated into a decline in the value of the position. We can identify two main components: the default risk (default risk) and the risk of deterioration in the creditworthiness (credit spread risk). "Diana Barro Università Cà Foscari di Venezia nr. 124 / 2004 "An introduction to models of credit risk for financial portfolios".

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EUROPEAN MACROECONOMIC EFFICIENCY ANALYSIS INCLUDING UNDESIRABLE OUTPUT: AN APPLICATION OF DATA ENVELOPMENT ANALYSIS UNDER HYPERBOLIC DISTANCE MEASUREMENT

ABSTRACT

In this paper we examine the efficiency of 39 European countries by the frontier production possibility set for the period 2006-2010, under the assumption that the economic growth (desirable output) comes jointly with a set of polluting wastes (undesirable output). We consider labor, capital stock and energy- use as inputs, GDP is a desirable output and CO₂ emission is the undesirable output. Using Data Envelopment Analysis (DEA), to measure productive efficiency, we compare a production technology where GDP and CO₂ are strongly disposable to a production where CO₂ are weakly disposable. The difference gives information on regulatory impact, in order to meet some pollutant emission limits. Our empirical results findings indicate that: 1. East, South and developing countries seem more inefficient than the others; 2. North and West paid the largest cost for environmental regulation among four subregions. The share of GDP loss to contain pollution, is, on average, respectively 7.2% for the North, 3.4% for the South, 1.5% for the East and 7.1% for the West. In addition, we also find that productivity loss, on average, from controlling pollution is larger in advanced economies, 5.3% with respect to 1.8% for developing countries.

Key words: environmental performance, macro level, hyperbolic measure of technical efficiency.

JEL classification: C61, D24, O52

1. EMPIRICAL MODEL

In ecological economics, the economic development is regarded as an improvement of the natural dimensions of the economy. The productive process is examined as a process of material transformation through the use of energy and the use of capital and labor, considering the waste as an inevitable by-product of the productive process, which is modelled by null-jointness (Shephard and Färe 1974). In this sense, both environmental and economic objectives need to be jointly evaluated. However, imposing the null-jointness condition to the technology is not sufficient, because the reduction of waste is not costless. The Polluter Pays Principle (PPP), mentioned in Principle 16 of the Rio Declaration on Environment and Development (1992), recognizes that free disposability of pollution cannot be accepted in a regime of environmental protection: in fact, some inputs would be pulled out of the production of desirable output in order to clean up waste.

For the estimation of the production technology, parametric and non-parametric methodologies are available. However, non-parametric is preferable because it is able to handle effectively the multidimensional nature (of inputs/outputs) in the production process. Among these, Data Envelopment Analysis (DEA) employs linear programming to construct a piecewise linear representation of the frontier technology. DEA allows also evaluating the distance of each productive unit in the sample from the best practice frontier. The distance from different specifications of the technology represents a measure of the technical efficiency of production units. Referring to this methodology, the approaches for incorporating undesirable output can be divided into two categories which are indirect and direct (e.g., see review by Tyteca, 1996 or Scheel, 2001). The indirect approaches to deal with undesirable outputs, are categorized in three strategies:

- i) consider undesirable outputs as inputs;
- ii) subtract the undesirable output from a sufficiently large number to transform it into a desirable output;
- iii) consider the inverse of undesirable output as a desirable output.

Conversely, the direct approach asserts that pollutants need to be treated asymmetrically, with respect to desirable outputs, in terms of their disposability. Under this assumption, there is the recognition that some productive resources have to be given up to reduce the levels of undesirable outputs, which leads to the outcome of transforming the production process. Hyperbolic measure of technical efficiency, proposed by Färe et al. (1989), discriminates between desirable and undesirable outputs through differing assumptions on disposability characteristics. So that, environmental efficiency indices are constructed by comparing the production processes under alternative assumptions of disposability.

To describe the theoretical background, we suppose that the set of $k = \{1, \dots, K\}$ units produce desirable outputs $y \in R_+^K$ and $b \in R_+^K$ pollutants using $x \in R_+^K$ inputs. Y and B

denote the $(K \times N)$ matrix of observed desirable outputs and $(K \times J)$ matrix of observed bad outputs, respectively. X $(K \times M)$ denote the matrix of observed inputs. Finally, let $z \in R_+^K$ be a $(K \times 1)$ vector of intensities that are used to weight the different units in constructing the reference frontier to evaluate producer k' . This vector enables us to shrink or expand individual observed units, for the purpose of constructing unobserved but nonetheless feasible units. It thus provides weights which facilitate the construction of the linear segments of the boundary of the technology.

Assuming that technology satisfies both constant returns to scale and weak disposability of pollutants, the production set that satisfies weak disposability of pollutants and strong disposability of desirable outputs and inputs is represented as the following:

$$P^w(x) = \{(y, b) : zY \geq y, zB = b, zX \leq z, z \geq 0\}$$

where $P^w(x)$ denotes output set under the weak disposability of pollutants (reached under environmental regulation). The intensity vector z serves to construct the boundary of production set from the convex combinations of the observed inputs and outputs, under the constant return to scale constraint, $z \geq 0$. The constraints state that the desirable outputs are strongly disposable (their quantities can be reduced at no cost), while the equality $zB = b$ implies that pollutants b cannot be freely disposable in the pollutants vector B , and pollutant emissions which exceed the current discharge are not be allowed. Therefore their production can be reduced only at the cost of a reduction in the other outputs or an increase in inputs.

In contrast to weak disposability, the concept of strong disposability allows any output to be disposed, without imposing any private costs. The production set under the strong disposability of pollutants assuming constant return to scale technologies is written as the following:

$$P^s(x) = \{(y, b) : zY \geq y, zB \geq b, zX \leq z, z \geq 0\}$$

where $P^s(x)$ denotes output set under the strong disposability of pollutants (attainable without environmental regulation). The $zB \geq b$ indicates strong disposability of undesirable outputs.

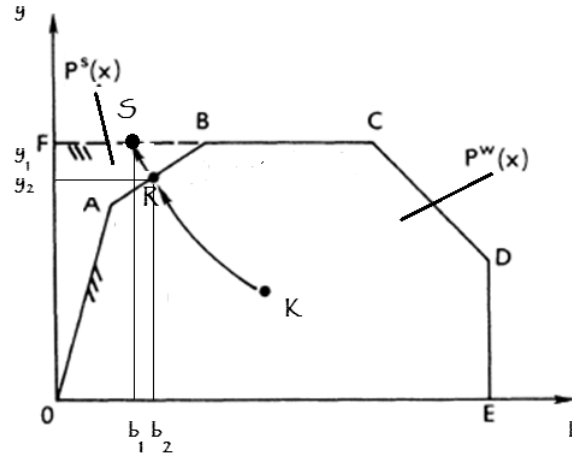
In figure 1, the output set $P^w(x)$ is constructed for a technology that satisfies the assumptions of weak disposability and null-jointness, and it is compared to the traditional neoclassical technology in which all outputs are freely disposable $P^s(x)$.

The latter is bounded by OFBCDE, and the line segment FB is the result of strong disposability of the bad output. The set bounded by OABCDE, on the other hand, is the piece-wise linear weakly disposable technology, where indeed the tract OAB is resulting from the weak disposability of the bad output. In addition, the origin is included, but the good output axis is not feasible because of null-jointness (Färe et al., 2001).

Hence, using the gap between the two output sets, we estimate technical efficiency of production under the restriction of environmental regulation. For point K , with respect to technology $P^s(x)$ means that it is compared to point S , and with respect to technology $P^w(x)$ is compared to point R .

Unfortunately, computationally the hyperbolic efficiency demanding nonlinear programming. Färe et al., (1989) proposes a linear approximation based on first-order Taylor's series. Instead, O. Zaimand and F. Taskin (2000) convert nonlinear problems in linear problems by just solving a linear-quadratic system.

Figure 1. Output sets for the strong and weak disposability of undesirable outputs.



Specifically, for a Constant Return to Scale technology, which satisfies weak disposability for the undesirable outputs and strong disposability for the desirable outputs and inputs, for each production unit k' , the technical efficiency $\sqrt{\Omega}$ is computed as a solution as follows:

$$\begin{aligned}
H^w(x^{k'}, y^{k'}, b^{k'}) &= \min \quad \Omega \\
\text{s.t.} \quad &ZY \geq y^{k'} \\
&ZB = \Omega b^{k'} \\
&ZX \leq \Omega x^{k'} \\
&Z \in R_+^k
\end{aligned}$$

where H^w stands for hyperbolic output distance function under $P^w(x)$ technology, $\Omega = \omega^2$ and $Z_i = \omega z_i$. Weak disposability of the undesirable outputs is expressed by the equality sign of the $ZB = \Omega b^{k'}$.

Similar for a technology that assumes strong disposability of inputs and outputs (desirable and undesirable), the technical efficiency $\sqrt{\Gamma}$, for each production unit k' , is computed as a solution to the following programming problem:

$$\begin{aligned}
H^s(x^{k'}, y^{k'}, b^{k'}) &= \min \quad \Gamma \\
\text{s.t.} \quad &ZY \geq y^{k'} \\
&ZB \geq \Gamma b^{k'} \\
&ZX \leq \Gamma x^{k'} \\
&Z \in R_+^k
\end{aligned}$$

where H^s stands for hyperbolic output distance function under $P^s(x)$ technology, $\Gamma = \lambda^2$ and $Z_i = \lambda z_i$. Strong disposability of the undesirable outputs is expressed by the inequality sign of the $ZB \geq \Gamma b^{k'}$.

The ratio $H = \sqrt{\Gamma} / \sqrt{\Omega}$ provides a measure of the regulatory impact, conceived in terms of reduced productivity due to a forced departure from strong disposability of undesirable outputs.

If there are no regulatory restrictions on producer k' , H will take value 1, whereas, if $H < 1$ it implies that regulation is binding. In addition, for producer k' the formula $(1 - H)$ gives the rate of productivity loss to meet the regulatory standards.

2. DATA AND DISCUSSION OF RESULTS

The study focuses on 39 European countries divided in subregions and IMF countries classification, based on their level of development.

Table 1. European countries: geographical sub-regions and IMF classification

NORTHERN EUROPE	Advanced	Denmark	EASTERN EUROPE	Advanced	Czech Republic
	Advanced	Estonia		Advanced	Slovak Republic
	Advanced	Finland		Emerging	Belarus
	Advanced	Iceland		Emerging	Bulgaria
	Advanced	Ireland		Emerging	Hungary
	Advanced	Norway		Emerging	Moldova
	Advanced	Sweden		Emerging	Poland
	Advanced	Switzerland		Emerging	Romania
	Advanced	United Kingdom		Emerging	Turkey
	Emerging	Latvia		Emerging	Ukraine
	Emerging	Lithuania			
SOUTHERN EUROPE	Advanced	Cyprus	WESTERN EUROPE	Advanced	Austria
	Advanced	Greece		Advanced	Belgium
	Advanced	Italy		Advanced	France
	Advanced	Portugal		Advanced	Germany
	Advanced	Slovenia		Advanced	Luxembourg
	Advanced	Spain		Advanced	Netherlands
	Emerging	Albania		Advanced	Austria
	Emerging	Bosnia and Herzegovina		Advanced	Belgium
	Emerging	Croatia		Advanced	France
	Emerging	Macedonia		Advanced	Germany
	Emerging	Montenegro			
	Emerging	Serbia			

The average annual growth rates of real Gross Domestic Product (GDP) for each classification is listed in table 2.

The East, North and the South had indeed achieved high economic growth rates over the period from 2006 to 2010. The increase level stops only during the financial crisis in 2009 and especially affects the North (-7.97%). After, GDP starts to grow, with different trends (more marked in the East with respect to the other sub-regions. On average, the GDP

growth rate for emerging countries is higher than advanced countries: a signal of greater economic dynamism.

Table 2. Annual percentage GDP growth rate.

Classification		2007	2008	2009	2010
Sub-region	North	3.79	-0.56	-4.48	2.10
	South	2.70	0.02	-4.51	0.59
	East	5.85	3.40	-4.67	4.85
	West	3.04	0.80	-4.15	2.88
Economy	Advanced	3.16	0.24	-4.28	2.09
	Emerging	5.81	3.28	-4.98	4.63
EU39		3.59	0.74	-4.40	2.52

Source: our elaboration on Penn World Tables (PWT 8.0 release) data.

On the other hand, there is a general decrease of CO₂ levels (see Table 3). Such tendency can be explained if we take into consideration the fact that the main goal of the Kyoto Protocol for the period 2008–2012 was to persuade the industrialized countries (called Annex I parties) to reduce and control their greenhouse gases.

The sharp spike in 2009 reflects the reduced growth rate of GDP and is consistent with the null-jointness assumption.

For the entire period, the negative growth follows the same trend for North, West and Advanced countries, while South, East and Emerging countries have a different tendency.

Table 3. Annual percentage CO₂ emissions growth rate

Classification		2007	2008	2009	2010
Sub-region	North	-2.22	-1.38	-8.13	6.34
	South	0.49	-3.84	-9.45	-2.77
	East	1.32	-1.17	-9.65	7.55
	West	-2.16	-0.14	-5.10	2.78
Economy	Advanced	-1.42	-1.87	-7.19	2.06
	Emerging	1.58	-0.56	-9.73	7.29
EU39		-0.61	-1.51	-7.90	3.49

Source: our elaboration on World Bank data.

Table 4 shows, for each group, the GDP produced per unit of CO₂ emission. We can note that emerging countries are less able to contain the harmful emissions than advanced countries: in fact, for a unit of CO₂, there are only 2 units of GDP with respect to 4 units in the North. The trend is growing: the value in 2010 is higher than the value in 2006. These considerations say that there are several economic policies, but all equally oriented to a gradual decrease of pollution, according to the Kyoto Protocol that points out environmental policy as a focal point for both developing and emerging countries.

Table 4. GDP per tons of CO₂ (\$/tons)

Classification		2006	2007	2008	2009	2010
Sub-region	North	4.27	4.53	4.55	4.55	4.34
	South	2.67	2.75	2.80	3.01	3.00
	East	2.04	2.17	2.29	2.39	2.37
	West	3.59	3.79	3.84	3.87	3.79
Economy	Advanced	3.62	3.83	3.87	3.93	3.88
	Emerging	2.35	2.46	2.54	2.68	2.55
EU39		3.10	3.26	3.32	3.42	3.34

Source: our elaboration on Penn World Tables (PWT 8.0 release) data and World Bank data.

According to the model outlined above, we employed intertemporal efficiency analysis over period from 2006 to 2010.

We consider five components of production consisting of GDP (desirable output), CO₂ emission (undesirable output), employment, capital stock and energy use (inputs).

Real Gross Domestic Product (GDP), expressed in international constant 2005 national prices, Employment (number of persons engaged), Capital Stock at current PPPs at constant 2005 national prices are available on Penn World Tables (PWT 8.0 release) provided by the Groningen Growth and Development Centre. Energy use (kt of oil equivalent) and CO₂ emissions from the World Bank data.

Table 5. Hyperbolic efficiency measures with weak disposability of CO₂ emissions $\sqrt{\Omega}$

Classification		2006	2007	2008	2009	2010	Mean
Sub regions	North	0,81	0,83	0,81	0,78	0,78	0,80
	South	0,65	0,66	0,67	0,68	0,68	0,67
	East	0,60	0,61	0,60	0,57	0,57	0,59
	West	0,76	0,76	0,75	0,73	0,73	0,75
Economies	Advanced	0,73	0,75	0,74	0,72	0,73	0,74
	Emerging	0,65	0,66	0,66	0,63	0,62	0,64
EU39		0,70	0,71	0,71	0,69	0,69	0,70

Assuming weak disposability for CO₂ emissions, the values in table 5 above, show, as a mean percentage, that, for all years in the sample, East and South are more inefficient than the others. In addition, emerging economies seem to be less efficient than the first.

The correlation matrix in Table 6 reveals important relationships among the efficiency scores under weak disposability of CO₂ emissions and some economic and environmental indicators. First, we note a positive relationship among inflation level, efficiency score and per capita GDP, in contrast with the point of view of the monetarists which see inflation as detrimental to economic progress. There are many studies on the relationship between inflation and economic growth, but this is outside the scope of this paper. Instead, a negative relationship appears between efficiency and fossil fuels which up to 2010 represent 77% of the total energy use. Environmental policies are still weak in all countries considered because combustible, renewable and waste make up only 6% of the total energy use and the correlation with the efficiency is still low. As we expected, there is a relationship between efficiency and the use of alternative and nuclear energies.

Table 6. Correlation matrix.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. $\sqrt{\Omega}$	1.00								
2. GDP/CO ₂	.60**	1.00							
3. GDP per capita	.55**	.58**	1.00						
4. Price level of household consumption	.56**	.67**	.88**	1.00					
5. Price level of capital formation	.43**	.66**	.83**	.90**	1.00				
6. Price level of the capital stock	.46**	.68**	.83**	.90**	.99**	1.00			
7. Renewables and waste (% of energy)	.10	.25**	-.04	.11	.12	.14*	1.00		
8. Alternative and nuclear energy (% energy)	.18*	.54**	.25**	.35**	.40**	.40**	-.01	1.00	
9. Fossil fuel energy consumption (% of energy)	-.20**	-.60**	-.22**	-.35**	-.40**	-.40**	-.42**	-.89**	1.00

* The correlation is significant at the 0.05 level (2-tailed).

** The correlation is significant at the 0.01 level (2-tailed).

Source: 3, 4, 5, 6 are extracted by Penn World Tables (PWT 8.0 release) data, 7, 8, 9 by World Bank data.

If weak disposability for the CO₂ emissions were strictly imposed as the result of an environmental regulation, the average value of production loss for the entire sample of EU39 would be between 4% and 6% in the period considered. However, we find differences among country groups. The potential good output loss is largest in North, West and advanced economies, due to binding environmental regulation. Conversely, East, South and emerging economies have relied mainly on less binding policies, strategies and regulations to control CO₂ emissions.

Table 7. Share of GDP loss (%) from imposing of CO₂ weak disposability

Classification		2006	2007	2008	2009	2010
Sub regions	North	6,85	7.57	7.05	7.54	6.65
	South	3,12	2.83	2.99	3.37	4.52
	East	0,53	0.75	0.90	2.37	2.20
	West	4,52	6.07	6.59	8.09	7.86
Economies	Advanced	4,68	5.50	5.63	6.57	6.53
	Emerging	0,87	1.03	1.23	2.58	2.52
EU39		4,07	4.77	4.89	5.90	5.85

3. CONCLUSION

Imposing joint production of good and bad outputs, we evaluate efficiency, for a sample of European countries, for the period 2006–2010.

In this paper we measure productive efficiency, considering a production technology where good and bad outputs are strongly disposable compared to a production where bads are weakly disposable. The ratio of the efficiency scores, under alternative assumptions on the disposability of the bad outputs, indicates the good output loss due to environmental controls.

The analyses reported in this paper indicate that there are significant differences in order to take environmental considerations into account, in their production processes. North and West subregions as well as advanced economies would carry the largest burden. Furthermore, in Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Estonia, Finland, Greece, Luxembourg, Macedonia, Poland, Serbia, Turkey and Ukraine the regulation is not binding so that there is no loss in output. These countries don't pay large costs for controlling CO₂ under the assumption of strict enactment of environmental regulation.

For some of them there isn't a real environmental regulation policy that binds the pollution: this is the case of Turkey, but also the case of Estonia, Luxembourg and Belgium. For the other countries the climate contributes to control the pollutants more than all every

environmental constraints: for example, the Atlantic sea and the lack of large cities maintain a good air quality together with a sparsely populated land.

However, although this empirical study gives relevant information on how ecological-economic systems are taken into account to ensure the sustainable development of the markets, it is evident that, in order to be able to draw conclusions of significance for policy purposes, future studies need to be devised to obtain extensive data sets on some relevant variables on “Environmental regulations” which might be important to explain efficiency variation across countries.

REFERENCES

- Fare, R., Grosskopf, S., Lovell, K., and Pasurka, C., (1989), Multilateral Productivity Comparisons When Some Outputs Are Undesirable: A Nonparametric Approach, *The Review of Economics and Statistics*, 71(1).
- Fare, R., Grosskopf, S., Lee, W.F., (2001). Productivity and Technical Change: The Case of Taiwan. *Applied Economics* 33, 1911-1925.
- Feenstra, Robert C., Robert Inklaar and Marcel P. Timmer (2013), "The Next Generation of the Penn World Table" available for download at www.ggd.net/pwt
- Scheel, H. (2001). Undesirable Outputs in Efficiency Valuations. *European Journal of Operational Research*, 132: 400-410.
- Shephard, R.W. and R. Fare, (1974), The law of diminishing returns, *Zeitschrift für Nationalökonomie*. 34, 69-90.
- Tyteca D (1996). “On the Measurement of the Environmental Performance of Firms – a Literature Review and a Productive Efficiency Perspective.” *J Environmental Management* 46(3): 281-308.
- Zaim O and F Taskin (2000), “Environmental Efficiency in Carbon Dioxide Emissions in the OECD: A Non-Parametric Approach.” *J Environmental Management* 58(2): 95-107.

APPENDIX

Table 8. Hyperbolic efficiency measures with weak disposability of undesirable outputs

Country	2006	2007	2008	2009	2010
Albania	0.71	0.76	0.80	0.83	0.86
Austria	0.72	0.75	0.76	0.76	0.74
Belarus	0.64	0.64	0.65	0.60	0.60
Belgium	0.74	0.73	0.72	0.69	0.71
Bosnia and Herzegovina	1.00	1.00	1.00	0.98	1.00
Bulgaria	0.77	0.76	0.73	0.64	0.62
Croatia	0.58	0.58	0.61	0.59	0.60
Cyprus	0.63	0.62	0.64	0.60	0.61
Czech Republic	0.50	0.51	0.48	0.46	0.46
Denmark	0.70	0.73	0.75	0.74	0.72
Estonia	0.68	0.67	0.60	0.49	0.57
Finland	0.69	0.69	0.64	0.59	0.64
France	0.73	0.75	0.75	0.75	0.76
Germany	0.66	0.69	0.69	0.69	0.70
Greece	0.72	0.75	0.73	0.74	0.74
Hungary	0.61	0.61	0.61	0.60	0.59
Iceland	0.63	0.65	0.69	0.67	0.66
Ireland	1.00	1.00	1.00	0.99	1.00

Italy	0.72	0.74	0.75	0.76	0.75
Latvia	0.77	0.79	0.77	0.66	0.62
Lithuania	0.81	0.83	0.82	0.75	0.73
Luxembourg	1.00	0.96	0.89	0.80	0.81
Macedonia	0.49	0.50	0.57	0.63	0.57
Moldova	0.44	0.46	0.48	0.47	0.48
Montenegro	0.59	0.63	0.58	0.65	0.55
Netherlands	0.69	0.70	0.70	0.69	0.69
Norway	1.00	1.00	0.95	0.94	0.96
Poland	0.61	0.62	0.62	0.60	0.60
Portugal	0.68	0.68	0.70	0.69	0.73
Romania	0.63	0.61	0.60	0.59	0.58
Serbia	0.46	0.46	0.47	0.44	0.44
Slovak Republic	0.55	0.59	0.61	0.60	0.60
Slovenia	0.53	0.56	0.55	0.54	0.54
Spain	0.65	0.66	0.69	0.73	0.74
Sweden	0.98	1.00	0.97	0.99	0.94
Switzerland	0.93	1.00	0.99	0.95	1.00
Turkey	0.93	0.91	0.88	0.81	0.84
Ukraine	0.32	0.34	0.34	0.29	0.31
United Kingdom	0.76	0.79	0.78	0.79	0.78

Table 9. Hyperbolic efficiency measures with strong disposability of undesirable outputs

Country	2006	2007	2008	2009	2010
Albania	0.66	0.72	0.76	0.78	0.81
Austria	0.68	0.70	0.69	0.69	0.68
Belarus	0.64	0.64	0.65	0.60	0.60
Belgium	0.74	0.73	0.72	0.69	0.71
Bosnia and Herzegovina	1.00	1.00	1.00	0.98	1.00
Bulgaria	0.77	0.76	0.73	0.64	0.62
Croatia	0.56	0.57	0.59	0.58	0.58
Cyprus	0.63	0.62	0.64	0.60	0.61
Czech Republic	0.50	0.51	0.48	0.45	0.46
Denmark	0.69	0.72	0.73	0.72	0.69
Estonia	0.68	0.67	0.60	0.49	0.57
Finland	0.69	0.69	0.64	0.59	0.64
France	0.64	0.65	0.65	0.64	0.64
Germany	0.65	0.67	0.67	0.65	0.66
Greece	0.72	0.75	0.73	0.74	0.74
Hungary	0.56	0.55	0.54	0.49	0.50
Iceland	0.52	0.52	0.52	0.51	0.49
Ireland	1.00	1.00	0.99	0.99	1.00
Italy	0.70	0.72	0.73	0.73	0.72
Latvia	0.65	0.66	0.61	0.50	0.49

Lithuania	0.81	0.82	0.80	0.67	0.66
Luxembourg	1.00	0.96	0.89	0.80	0.81
Macedonia	0.49	0.50	0.57	0.63	0.57
Moldova	0.38	0.39	0.41	0.38	0.40
Montenegro	0.59	0.60	0.58	0.52	0.52
Netherlands	0.69	0.70	0.70	0.68	0.69
Norway	1.00	0.99	0.95	0.92	0.96
Poland	0.61	0.62	0.62	0.60	0.60
Portugal	0.66	0.66	0.68	0.67	0.69
Romania	0.63	0.61	0.60	0.54	0.51
Serbia	0.46	0.46	0.47	0.44	0.44
Slovak Republic	0.55	0.58	0.59	0.55	0.56
Slovenia	0.49	0.51	0.50	0.50	0.50
Spain	0.63	0.64	0.67	0.70	0.70
Sweden	0.78	0.78	0.75	0.70	0.73
Switzerland	0.82	0.90	0.88	0.86	0.91
Turkey	0.93	0.91	0.88	0.81	0.84
Ukraine	0.32	0.34	0.34	0.29	0.31
United Kingdom	0.71	0.73	0.73	0.74	0.74

Table 10. Environmental efficiency measures strong disposability/weak disposability

Country	H2006	H2007	H2008	H2009	H2010	Mean
Albania	0.94	0.94	0.94	0.94	0.95	0.94
Austria	0.95	0.93	0.92	0.90	0.91	0.92
Belarus	1.00	1.00	1.00	1.00	1.00	1.00
Belgium	1.00	1.00	1.00	1.00	1.00	1.00
Bosnia and Herzegovina	1.00	1.00	1.00	1.00	1.00	1.00
Bulgaria	1.00	1.00	1.00	1.00	1.00	1.00
Croatia	0.97	0.97	0.98	0.97	0.97	0.97
Cyprus	1.00	1.00	1.00	1.00	1.00	1.00
Czech Republic	1.00	1.00	1.00	0.98	1.00	1.00
Denmark	0.98	0.98	0.97	0.97	0.96	0.97
Estonia	1.00	1.00	1.00	1.00	1.00	1.00
Finland	1.00	1.00	1.00	1.00	1.00	1.00
France	0.88	0.87	0.86	0.85	0.85	0.86
Germany	0.99	0.97	0.96	0.94	0.94	0.96
Greece	1.00	1.00	1.00	1.00	1.00	1.00
Hungary	0.93	0.90	0.88	0.82	0.84	0.87
Iceland	0.82	0.80	0.75	0.76	0.74	0.78
Ireland	1.00	1.00	1.00	1.00	1.00	1.00
Italy	0.97	0.97	0.97	0.97	0.96	0.97
Latvia	0.84	0.83	0.79	0.75	0.79	0.80
Lithuania	1.00	1.00	0.97	0.89	0.91	0.95

Luxembourg	1.00	1.00	1.00	1.00	1.00	1.00
Macedonia	1.00	1.00	1.00	1.00	1.00	1.00
Moldova	0.87	0.84	0.84	0.81	0.84	0.84
Montenegro	1.00	0.96	1.00	0.80	0.94	0.94
Netherlands	1.00	1.00	1.00	0.99	1.00	1.00
Norway	1.00	0.99	1.00	0.98	1.00	0.99
Poland	1.00	1.00	1.00	1.00	1.00	1.00
Portugal	0.97	0.97	0.97	0.97	0.96	0.96
Romania	1.00	1.00	1.00	0.91	0.88	0.96
Serbia	1.00	1.00	1.00	1.00	1.00	1.00
Slovak Republic	1.00	0.98	0.97	0.92	0.94	0.96
Slovenia	0.92	0.92	0.92	0.92	0.92	0.92
Spain	0.96	0.97	0.96	0.95	0.93	0.96
Sweden	0.79	0.78	0.77	0.71	0.78	0.77
Switzerland	0.89	0.90	0.90	0.91	0.91	0.90
Turkey	1.00	1.00	1.00	1.00	1.00	1.00
Ukraine	1.00	1.00	1.00	1.00	1.00	1.00
United Kingdom	0.93	0.92	0.93	0.94	0.94	0.93

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IMPACT OF ACCOUNTING INFORMATION IN BUSINESS DECISIONS

ABSTRACT

Variable and uncertain business surrounding represents an atmosphere in which numerous business subjects are struggling on daily basis to preserve and expand its business activities. For a company, successful business activities depend on managing authority that „connects“ and „adjusts“ company's business activities to demands of external surroundings and conditions of the market. Given that, the managing authority requires timely, reliable and adequate managing information for making business decisions.

To solve business problems effectively, quality informational accounting system as a part of company's general informational system is highly required. Managing authority makes decisions based on adequate accounting information that contribute to solving of business problems and obstacles and thus helping the managing authority to control business activities.

Accounting information presented in financial statements represent “blood test” of a company, and making business decisions without these information would be quite risky. In this paper, informational accounting is offered as a business language of a manager, and accounting information as a foundation for making strategic business decisions, and for making predictions about forthcoming business activities. Given that, accounting information represents a measuring unit of business activities, and thus help managing authority in making quality business decisions.

Key words: business decision making, financial statements, management accounting, getting accounting information. managing authority

JEL classification: M400

1. INTRODUCTION

For establishing successful business policy and making optimal decisions in business, accounting information system is essential. Accounting information is a result of accounting functions, and it is eventually presented through corresponding financial reports. Accounting information that will be presented, both financial and non-financial, depends on the users of financial statements and their needs.

Internal users get accounting information from management accounting and use them for making operational decisions that determine daily operations, to accomplish specific operations and for strategic decisions that define and control aims of business dealings. Accounting information is essential to management of business subject for understanding the state of previous business dealings and anticipating future business dealings in the next planning period. External users can make assessment of the rate of success of business subject and determine its financial state through this accounting information.

Accounting information system should be able to collect, classify and process accounting information for users' needs depending on the types of decisions that they would like to make. In the turbulent business environment affected by political, social, media and many other influences, we can say that financial statements represent relevant factor for making business decisions.

2. DEFINING AND COMPARING MANAGERIAL AND FINANCIAL ACCOUNTING

Accounting, as a part of business information system, aims to provide information and data about position, rate of success and changes of the financial state of business subject, and to deliver this information to internal and external users. Taking that into account, accounting represents "data base" that involves all quantity and quality operations and business changes of the business subject. Therefore, accounting information system collects data of business changes of the property of business subject; it processes them and classifies them by using certain organization system and methods, and provides financial statements that it delivers to management or internal and external users that are interested in them. Apart from accounting system, according to areas of function informational system can be manufacturing, marketing, human resource oriented etc.¹ It is essential for accounting information system to be interconnected to other systems of information, and there should be feedback connection among all those systems.

Accounting system can be split according to type of work and the criteria that the user of accounting information sets. According to the type of work inside the accounting system, it

¹ O'Brien, James A., (1990), *Management Information Systems: A Managerial End User Perspective*, Richard D Irwin, INC. p. 428-463.

can be split into financial accounting subsystem, cost and effects accounting subsystem, accounting control subsystem and accounting planning and analysis subsystem. There are also two types of accounting according to the criteria of use of the accounting information: financial and managerial accounting. The next picture shows needs of internal users of accounting information.

Picture 1 Internal users information needs



Source: authors

According to the accounting source of accounting information, the difference between financial accounting information and managerial accounting information should be noted. Since 70's of the previous century the difference between financial and managerial accounting has been institutionalized by National Society of Accountants of America². In both national and international literature, we will find that different authors separate these two subsystems in different ways. Basically, management of the company that makes business decisions collect quality information that they need form managerial accounting that is concentrated on management of the business subject.

On the other hand, external users need mostly quantity information that are collected and processed by financial accounting system. This part of the accounting system presents information about financial state, liquidity and profitability of the business subject which is needed for making decisions, mainly for external users, but for internal users too. Financial accounting deals with business-financial relations of the business subject and the environment, and that is the main reason why this part of accounting information system is externally oriented. External users, investors and creditors, make relevant decisions by

² D. Dendić (2000), *The Basics of Financial Accounting*, Book 1, 2nd edition (*Osnovi finansijskog računovodstva*, I knjiga, drugo izdanje), DP „Pronalazaštvo“, Belgrade: p. 4.

using the information from financial statements. Nevertheless, financial accounting has to adequately inform public, unions, state authorities and other stakeholders interested in financial state and profitability of the business subject. State authorities need the information about operations of all business subjects to adequately define and run fiscal policy, along with national production growth.

Therefore, main differences between these two subsystems of accounting information system come from the fact who are the users and what is the orientation of accounting information. Managerial accounting processes and interprets information for internal users to help them adequately plan, make decisions and to control companies. Managerial accounting system ought to deliver those accounting information on management request daily. On the other hand, for external users, periodical reports are made according to legal time limits or on reasonable request of the user. This accounting information is essential for external users for analyzing business results and the financial state of business subjects, and also for determines financial obligations and other relevant information.

Managerial and financial management are closely related, although they look as independent account subsystems on the first sight, because they use financial accounting information that is adapted for needs of making managerial and strategic decisions. Given that currents of financial markets are affected by psychological, political, social, media and other factors, financial statements are considered as a relevant basis for both internal and external users. Therefore, for financial subject and financial markets to function successfully, a quality system of financial statements is essential.

3. TYPES OF ACCOUNTING INFORMATION AND THEIR EFFECT ON MANAGERIAL DECISIONS

For successful managerial business decisions accounting information along with other information is necessary. There is a difference between that information, and it comes from the specificity of accounting information. Accounting information represents the result of accounting data process and it is oriented towards the problem to successfully contribute in making business decisions. Therefore, accounting information come from the group of numeric data that display quantity and explain specific business operation in certain period of time. In fact, accounting information represent the result of accounting function, that includes accounting planning, supervising, analysis and control.

Managerial decisions in most case rely on the data base and accounting information of the managerial accounting. Therefore, it is necessary that the management has access to precise and timely information to achieve significant profit for the company. The purpose of managerial accounting information is illustrated in its help to the management to implement business strategy. For managerial decisions of the management, managerial accounting information represents “drive”, although in real life they also use a combination of managerial and financial accounting information.

Accounting base of managerial accounting information represent the calculation of expenses and profit, accounting planning and control. The purpose of expense accounting is to analytically calculate incomes, expenses and the results based on cost-effectiveness and cost-benefit analysis. Furthermore, it interprets information for the needs of top management. Therefore, efficiency account represents a measure of success of a company, and it helps management to determine financial and non-financial performance of a company. Hence, expense account is inevitable information basis for making managerial decisions. Expense account can determine the results of business dealings of a company as a whole but also for its lower level parts. Quality accounting information enables management to continuously lower expenses, improves the quality of product and shortens time of manufacture, which of course contributes in maximizing company's profit. For that reason, expense account represents an invaluable instrument of managing for the top management in order to fulfill goals in business dealings. Also, using managerial accounting information a management is enabled to improve its operational performance.

Significance of accounting information for managerial accounting greatly depends on whether the data is rationally organized for management needs. Moreover, it is necessary that accounting information displays realistic business dealings. Those two represent main characteristics of accounting information, its relevance and reliability, so that it can contribute to successful business decision making of a management.

4. THE IMPORTANCE OF ACCOUNTING INFORMATION FOR MODELING FINANCIAL STATEMENTS

The final outputs of accounting are financial statements. Financial statements are reports about financial state, reports about total return (MRS1), cash flow statements (MRS7), statement about movement of capital (MRS1) and financial statements annotations (MRS1). The form of financial statements depends on requests of users of financial statements.

Financial statements symbolize "language of communication" of accounting information system and internal and external users. Those statements represent indispensable output form making business decisions, and their quality depends most particularly on input information and the quality of accounting processing. They are based on accounting processing of former business operations of business subject. For external users, financial statements and information compiled in annotations within financial statements denote testing instrument in evaluation of manager's operational performances along with financial state of a company.

Content of financial statement is formatted for external users, given that it ought to demonstrate truthful, fair, neutral and reliable display of economic signs of the business subject. Financial accounting system presents accounting information in legally legislated financial statements to external users. However, for needs of management of business

subject, the form and the content of financial statements can be adjusted in compare to those in Accounting Law. Depending on management needs, managerial accounting forms financial statements in accordance with accounting standards and principles of reporting.

There are two main systems of financial reporting:

- Systems using laws and legislatives to determine the content of financial statements
- Systems that define the content of financial statements using standards and principles about minimum positions of financial statements. These systems, given that they represent consideration of needs of all users, dominate the worlds accounting practice.

The purpose of financial statements is to give informative support in evaluating of business dealings of business subjects. The quality of financial statements depends on the quality and the quantity of information it is comprised of, while their objectivity and correctness is examined by auditor during audit of business subject. Financial statements ought to comply with standards of quality to fulfill the needs of various users, and those standards are comprehension, relevancy, reliability and comparability. Therefore, accounting information shown through financial statements is significant for users if it is comprehensive, has no significant faults, if it is neutral, and truthfully displays facts that it represents. Furthermore, accounting information must be timely to be quality, any delay makes it unreliable.

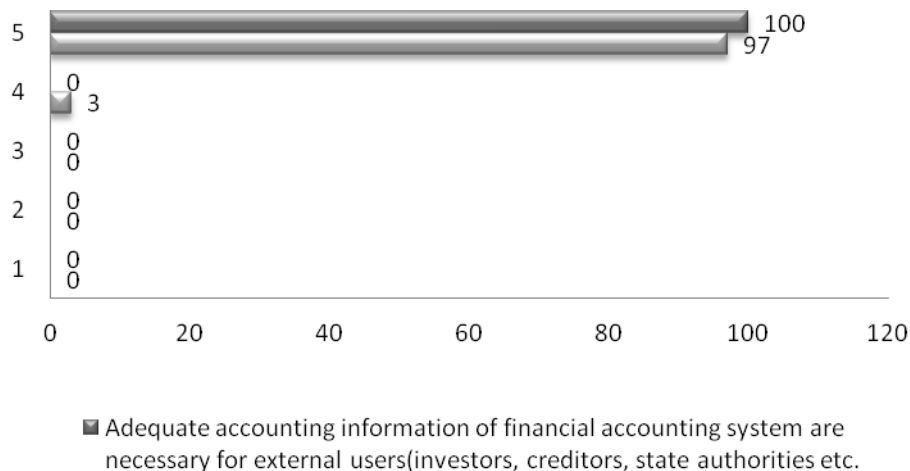
Financial statements provide necessary information for evaluation of future cash-flows, financial state and rate of success of financial subject, along with operational performances of a management. Financial statements need to provide users with evaluation of the business subject and its ability to make money profit and other profit equivalents, along with probability of making profits. For such needs of users, information about changes in financial state and rate of success of the business subject is highly needed. The ability of the business subject to control and adjust economic resources shows its ability to make money profits and other equivalent profits in future business operations. For that reason, users of financial statements need information about profitability, liquidity, and solvency along with financial structure of the business subject. Information about financial state of the subject is shown in balance sheet while information about rate of success is shown in income statement. Information about financial state and rate of success is very important to make predictions about future business operations of a business subject, which concerns a very large number of users. Value of the statements is very much affected by the method of presenting information about past financial changes. For example, if unusual points of profit-loss account are presented separately, that report will be more valuable for users of that information (for example, users of dividends). None of the financial statements shows all the specific information needed by users, because different financial statements reflect different aspects of those transactions and financial changes. Therefore, to have complete view into financial state and rate of success of the subject it is necessary to make interconnections between financial statements in order to make correct economic decisions.

5. RESEARCHING THE INFLUENCE OF ACCOUNTING INFORMATION IN MAKING BUSINESS DECISIONS

5.1. Analysis of results of surveys

In order to examine the influence of accounting information in making business decisions and its significance for functioning of a financial market a survey has been conducted among business subjects in Bosnia and Herzegovina. Given the character of the research the survey has been conducted solely on company managers in Bosnia and Herzegovina. Despite the fact that the survey has been conducted on 70 subjects, 38 subjects have answered the questions. Survey results are elaborated below:

Chart 5.1. The importance of accounting information for internal and external users



All of 38 surveyed companies completely agreed that adequate accounting information is necessary for making decisions, whether for investors, creditors or authorities. Furthermore, high percentage, 97% of them, stated that accounting system represents an important source of information for making business decisions on all organizational levels of the companies.

Accounting information system can be observed through financial (information for external users) and controlling system (information for internal users). The survey shows that 80% of the companies do not have managing system that is separated from financial accounting

system, and only large business subjects, 20% of them, have separated departments for the need of accounting information of internal and external users.

Chart 5.2. Information that has the most significant influence in making managerial decisions

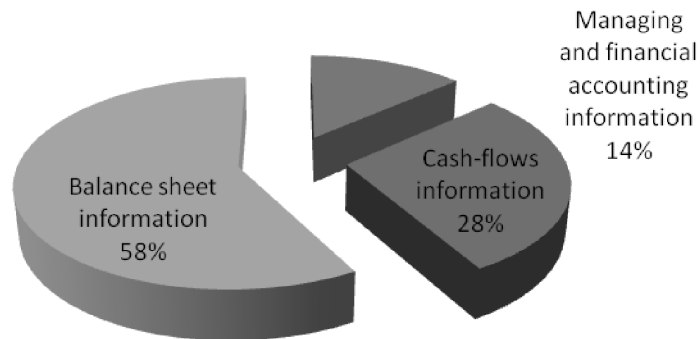
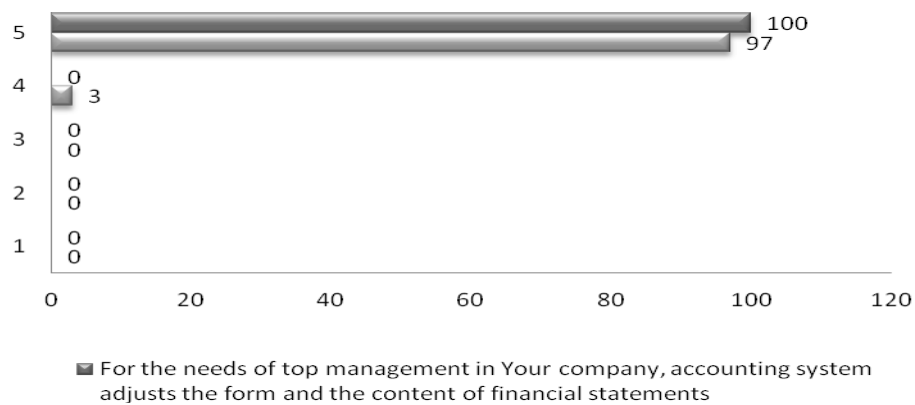
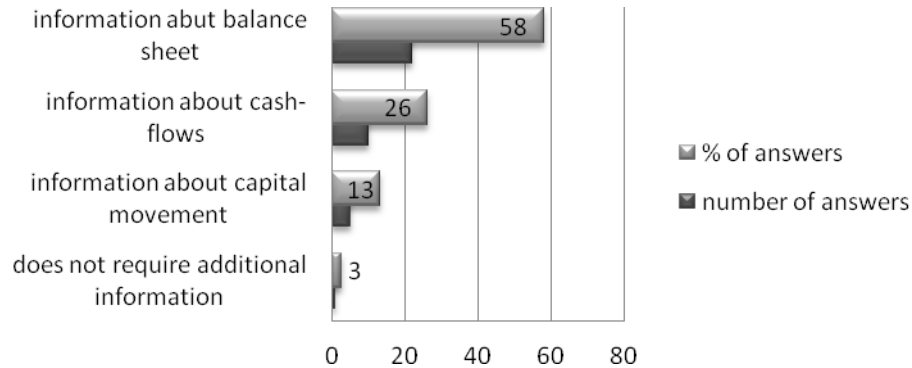


Chart 5.3 The form and significance of financial statements for management in making strategic decisions



The company managers completely agreed that the top management relies on financial statements when making strategic decisions and 97% of the companies adjusts the form and the content of those statements.

Chart 5.4. Additional information that management usually requires from accounting system

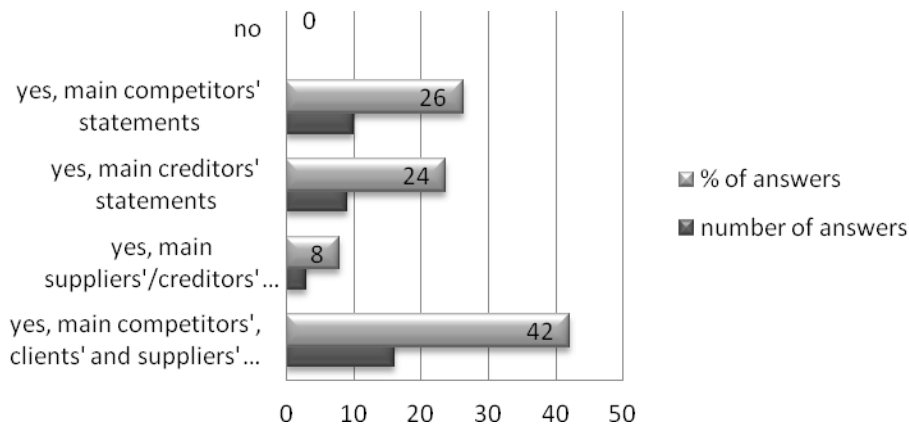


In 58% of the companies, for the needs of making business decisions the management most frequently requires accounting system to provide additional information related to balance sheet. Quality accounting information about balance sheet enables management to continuously lower expenses thus contributing to maximizing profit of the company which is the aim of all business subjects.

Furthermore, of 38 companies included in the survey 26% of the managers require cash-flow information to be provided by accounting system, while 13% of the managers most frequently require additional information about movement of capital in order to make decisions.

These results show that balance sheet information is of greatest importance for top management. However, to make decisions successfully management must search for a connection between financial statements of both accounting systems.

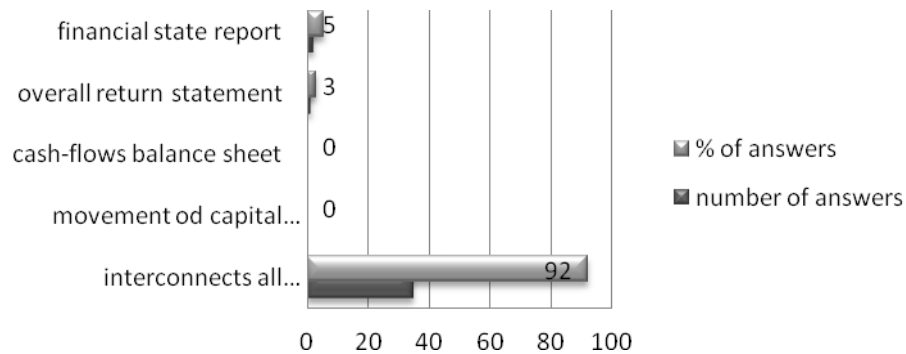
Chart 5.5. Have you ever read annual/semi-annual statements of other business subjects?



- Survey result show that 42% of the managers, in order to make adequate business decisions, searched for information about the state of competitors, clients and suppliers by following their annual/semi-annual financial statements.
- 26% of them concentrated solely on statements of their main competitors, 24% of managers analyzed the statements of their main clients (corporate bodies) and 8% of them searched for main suppliers/creditors.

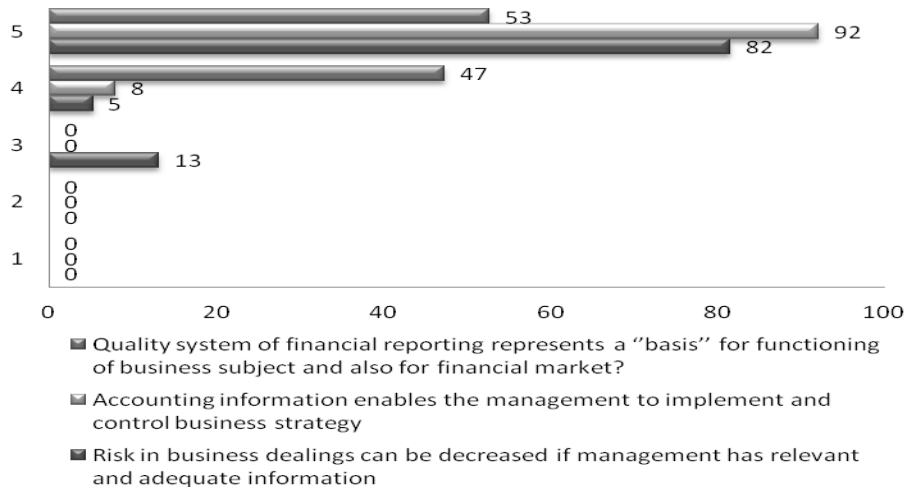
This means that a quality accounting information system represents an important basis for successful functions of a market and business subjects, and that top management needs to follow both internal and external influences to timely adjust its business strategy toward goals that are set.

Chart 5.6. Financial state and return of a business subject are evaluated on the basis of accounting information shown in financial statements



- The result of the survey show that managers, in order to evaluate financial state and return of a business subject, in 92% of cases make connection between basic financial statements of accounting system. 5% of them find the information needed in the financial state report and 3% of the managers use information from overall return statement.

Chart 5.7. The influence of accounting information on strategic decisions of management and on overall state of financial market



- A very large percentage, 92% of participants in the survey, completely agrees that accounting information enable the management to implement and control a business strategy, while 8% also highly rate the significance of accounting information for the needs of top management.
- This analysis shows that 82% of the 38 managers thinks that the management can lower the risks in business operations using quality accounting information, while 5% of the managers think that using accounting information can lower the risks of business dealings bearing in mind that accounting information needs to be adequately analyzed and interpreted. The rest of them, 13% of the managers, do not have a defined opinion on the effect of accounting information on lowering the risks of the company.
- Large percentage, 53% of the managers, completely agree that a quality system of financial reporting represents a foundation for functioning of a company but also for functioning of financial market. The rest, 47%, relatively agree about the importance of accounting information for business subjects and financial markets.

These results are promising, and they confirm the significance of accounting system as a main link in companies, but also as a main link in financial markets, the link that helps preserve successful business operations of business subjects.

5.2. The effect of accounting information on making strategic decisions

Business operations of a business subject are aimed at maximizing of financial result, along with due accounts payables. Relevant, reliable and timely information represent a foundation for top management in making strategic decisions. For the needs of controlling in accomplishing aims that are set, management needs organized information especially from managerial accounting and also information from financial accounting and their subordinate analytic accounting departments. For the need of communication between the members of a business subjects for communication of a business subject with environment, both financial and non-financial information are important. Management combines the information about expenses with other non-expense related information and makes opinions and decisions about business operations. The quality of the information received has a crucial role in lowering risks and uncertainty in the process of making decisions of a management.

Strategic decisions determine the policy of operations if a business subject. Therefore, o complete specific tasks management can request specific accounting information from accounting system. That accounting information is an arrangement of organized and adequately processed data that accounting department and then accounting system forwards to a management in order to enable it make specific decisions. Managerial i.e. controlling accounting system that collects, classifies and interprets through financial statements business-financial data that are need. Strategic decision making represents continuous process of adapting of business subject's operation in the environment and in cohesion with set aims of operations. Therefore, accounting system needs to provide precise and timely information for the management. Consequently, accounting information combined to other

information represent the foundation for determining qualities and flows of a business subject, on which basis management can implement and control business strategy.

6. CONCLUSION

In the modern business surroundings, it is almost absurd for any business subject to operate without organized information system. Accounting system, as a subsystem of business information system, represents a source of basic information that are essential for all managerial levels inside a business subject., but also for external users. Most of the information for operational, managerial and strategic decisions users “absorb” from accounting information system, that can be divided into managerial (controlling) system and financial system. Fundamental difference between these two information systems derives from their focus towards users. Therefore, external users use financial information in order to make business decisions and to determine financial state and effectiveness of a business subject. On the other hand, for the needs of internal decision making, the basis for making decisions is managerial accounting information. Information must be adequately processed, transformed and adjusted for the needs of management by accounting information system in order to be valuable for receiver.

Final outputs of accounting information system are financial statements. Those reports represent “language of communication” between accounting system and internal and external users, on which basis optimal business decisions can be made. Accounting information system of a company deals with collecting data about business transactions and movements, processes data into useful information and distributes it to correspondent users. Accounting-information system delivers correct, fair, truthful and timely information to a management. Those are fundamental characteristics of accounting information. Quality and timely information has crucial role in decision making of a management.

Efficient accounting system needs to prepare and select accounting information depending on objective needs on management’s request. Accounting information is increasingly significant in turbulent business environment, since they symbolize “a relevant blood picture” of a business subject. Consequently, accounting information system of every business subject represents an important link for making effective business decisions, as for servicing of whole financial market.

REFERENCES

- Arnold J., Hope T., (1990), *Accounting for Management Decision*, Second Edition, New York: Prentice-Hall;
- Atrill P., (2012), *Management Accounting for Decision Makers with MyAccountingLab Access Card*, 7th Edition, Pearson;
- Boczko T., (2012), *Introduction to Accounting Information Systems*, 1th Edition, Pearson;

- Body D., Boonstra A., Kennedy G., (2008) *Managing Information Systems: Strategy and Organisation*, 3th Edition, Financial Times/ Prentice Hall;
- Brealey A. R., (2011), *Fundamentals of Corporate Finance*, 7th Edition, McGraw-Hill Higher Education;
- Chaffey D., Wood S., (2004), *Business Information Management: Improving Performance Using Information System*, Financial Times/ Prentice Hall;
- Chambers, A., Rand, G., (2000), *The Operational Auditing Handbook*, Chichester, John Wiley & Sons;
- D. Dendić, (2000), *Osnovi finansijskog računovodstva*, I knjiga, drugo izdanje, DP „Pronalazaštvo“, Beograd;
- Fehrić F., (2010), *Poslovno odlučivanje*, Univerzitet/Sveučilište „Vitez“, Travnik;
- O'Brien, James A., (1990), *Management Information Systems: A Managerial End User Perspective*, Richard D Irwin, INC;
- Romney M.B., Stenbart P.J., (2006), *Accounting Information Systems*, New York: Prentice-Hall;
- Seal W., Garrison H. R., Noreen W. E., (2011), *Management Accounting*, McGraw-Hill Higher Education;
- Williams J.R., S.F. Haka, Bettner M.S., R.F. Meigs, (2002), *Financial and Managerial Accounting: The Basis for Business Decisions*. Twelfth edition. Boston: McGraw-Hill Irwin.

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EFFECTS OF THE EU PREACCESSION PROGRAMS IN BOSNIA & HERCEGOVINA TOURISM SECTOR

ABSTRACT

Bosnia and Herzegovina have access to certain funds of European Union which can help to resolve many problems. Advantages which it can realize as a user of EU projects are:

- 1. employing of larger number of people through projects financed by EU and reduction of unemployment which is growing*
- 2. smaller number of loans for development projects*
- 3. resolving the problem of accessing money due to problems of financial market rated as one of the undermost segments of B&H development, as reported in report on global competitiveness for year 2013*
- 4. acquiring knowledge and training of people and institutions used for other projects, as well as resolving of problem of business sophistication rated among undermost in fields of development of B&H in report on global competitiveness for year 2013.*
- 5. strengthening of business sophistication rated amongst undermost in fields of B&H development in report on global competitiveness for 2013*
- 6. ability to draw capital into the country*

One cannot quantify contribution of EU funds in GDP of Bosnia and Herzegovina, and all eventual projections can be based on assumptions only, because funds are going through the state in many ways. In some cases, like with co-financing and infrastructural project, it could be singled out, but the real impact of EU funds on growth and development of Bosnia and Herzegovina cannot be measured currently due to few reasons:

- 1. large number of grants does not go through treasury*
- 2. there is no ability for independent management of EU funds*
- 3. financial management of EU aid is centralized*

4. *there is no complete and updated database on all funds.*

In addition to the impossibility of quantifying absorption capacity, also the impact of EU funds on the economy is not monitored by the effects of individual projects, whether as direct or indirect effects, viewed through the pillars of competitiveness, according to the WEF (World Economic Forum).

This paper explore what are the effects of EU projects in the field of tourism to individual companies or tourist community, as well as whether there are indirect effects of other projects on tourism and vice versa.

Keywords: tourism, development, EU funds

JEL classification: M21, F39

1. INTRODUCTION

Tourism in Bosnia and Herzegovina has the potential to become the most profitable and largest export industry. Today it is rapidly growing industry in world with a growing share knowledge and value added, which contributes to GDP growth, employment and investment. This is a sector that best ensures economic valorization of local tourism products, composed of elements of tradition and culture; natural heritage and materials; or all components of local and regional tourist attractions. In connection with the development of tourism in Bosnia and Herzegovina and the use of its natural and human resources, there are numerous studies and analyzes at the Federal level, such as the last Tourism Development Strategy of the Federation of Bosnia and Herzegovina for the period 2008-2018. The sustainability of tourism depends on investments not only at the local level, but also at the level of utilization of EU funds, given that for Bosnia and Herzegovina knowledge shared through cross-border projects is additional benefit gained.

Tourism sector and small and medium enterprises have not used more than four million EUR of EU funds in year 2013, primarily due unresolved issues regarding project coordinating mechanism. More significant development of tourism suffers due to missed opportunities and unused EU funds; while on the other hand, there are data and the facts that some of achieved improvements in tourism within the last ten years were largely the result of implemented EU projects. Strengthen tourism has impacts on other affiliated and related industries and institutions: hotels, airports, road and rail transport, entertainment industry, the agricultural sector, food and beverage, sports and recreation centers spa centers etc. Indirectly it forms a series of transactions that meet the needs of foreign tourists and thus it helps solve the problem of unemployment, one of the biggest problems in Bosnia and Herzegovina. Money from the EU funds can be used for the development of

tourism in several different ways. First of all, under the IPA Component II Cross-border cooperation (current component of Regional and territorial cooperation), it is possible to implement projects that by strengthening neighborly relations can contribute to the development of tourism. For Bosnia and Herzegovina it is also important to use through projects transferred knowledge. Cross-border projects facilitate cooperation among the partners, and even less experienced partners are able to achieve the same technological / organizational level and also to make some new networks.

2. POSSIBILITIES FOR TOURISM DEVELOPEMENT IN BOSNIA AND HERCEGOVINA

According to the World Tourism Organization, Bosnia and Herzegovina is defined as one of three tourist destinations in the world with the overall growth potential of the tourism market of 10.5% , for the period up to 2020. Types of tourism for which B&H has natural, cultural and historic predispositions are: skiing resort, spa, mountain, religious, hunting, fishing, far, the sea tourism, fairs, adventurous tourism. National Geographic traveler recommended Bosnia and Herzegovina as one of the best Europe destinations in 2012 for mountain biking and rafting.

The contribution of EU projects to tourism development is significant and may be even more significant, especially because in addition to the funds received, Bosnia and Herzegovina in this way can learn from examples of best practice. There are many reasons for potentiating development of tourism, such as geographical location, natural resources (national parks, nature parks and protected areas), favorable climate, cultural and historical heritage, attraction internationally known sanctuary and proximity to European markets and the Adriatic coast. However, the lack of long-term tourism strategy in B&H; inadequate legal and institutional regulation of tourism, insufficient and inadequate accommodation and incomplete touristic offer and insolvency and over indebtedness large number of tourist businesses are just some of the problems that B&H faces to. It is therefore important to create harmonized conditions for the development of tourism and use opportunity to participate in all available EU projects in this regard. Since tourists of modern era are in search of new experiences, wants to learn about other cultures and customs, Bosnia and Herzegovina in this regard can offer a lot because of its multicultural community.

The basic prerequisite for this is that the tourists at the international level are aware of what Bosnia and Herzegovina can offer in this regard, which means that it is necessary to improve the relationship between IT development and cultural tourism in Bosnia and Herzegovina and also ITC itself, in regard of integrated and related tourist information and data. Due to fact that various tourist destinations are trying to find ways of extending the tourist season, Bosnia and Herzegovina has the ability to use the model,, transition from season to season,, i.e. that throughout the year there are an influx of tourists for all types of tourism, present on a relative small geographic area. For all types of tourism that have the

potential to be developed in Bosnia and Herzegovina, an additional factor of it is that tourists are informed about the offers in the field of culture through ICT infrastructure, where the basic offer is combined with other events, such as fairs, sporting and recreational events (such as rafting etc). During the stay in Bosnia and Herzegovina, tourists can, besides the primary reasons for coming (summer and winter holidays, health tourism, etc.), additionally benefit from offer for cultural tourism and thus enrich their travel experience, learning about the culture and customs of this country. Given that urban and rural areas are generally close to each other and there is a mutual infrastructural connectivity, linking the basic package of services to the cultural and customary events of local communities can integrate these two, worlds, and make tourists stay even more interesting. The fact is that tourists with an interest in the culture are spending more money than the so-called, the average, and tourist. Potentiating those offers which tourists find attractive and which provides unique experience of the country, not just of a tourist package, can make some disadvantages of the total offer less important. Basic prerequisite for the use of any kind of tourist services is that there is adequate information about them, available to tourists through ITC.

2.1. Economic indicators and statistic of tourism in Bosnia and Herzegovina

According to (World Economic Forum:2013), the Travel and Tourism Competitiveness analysis shows that Bosnia and Hercegovina is ranked as 90th out of 140 countries included in the study. Compared to analysis from year 2011, when Bosna and Herzegovina was on ranked as 97th out of 140 countries, one can say that small progress has been made. But, ranking for Europe region shows that Bosnia and Herzegovina is ranked as 41st out of 42 countries, which makes this country noncompetitive on European level, as well as on regional level. The same study shows that Europe is leading region for Travel and Tourism, which makes these results more unfavorable for Bosnia and Hercegovina. Knowing the fact of macroeconomic indicators in Bosnia and Hercegovina and ranking not only in Travel and Tourism Competitiveness, but also in Global Competitiveness report for 2013-2014 (World Economic forum:2013), where Bosnia and Hercegovina took 87th out of 148 economies, it is obvious that Bosnia and Hercegovina should not miss opportunities to participate and benefit from EU projects. This is more important given that fact that in Global competitiveness report it is emphasised that among the factors that most disturb business operations in Bosnia and Herzegovina is access to finance.

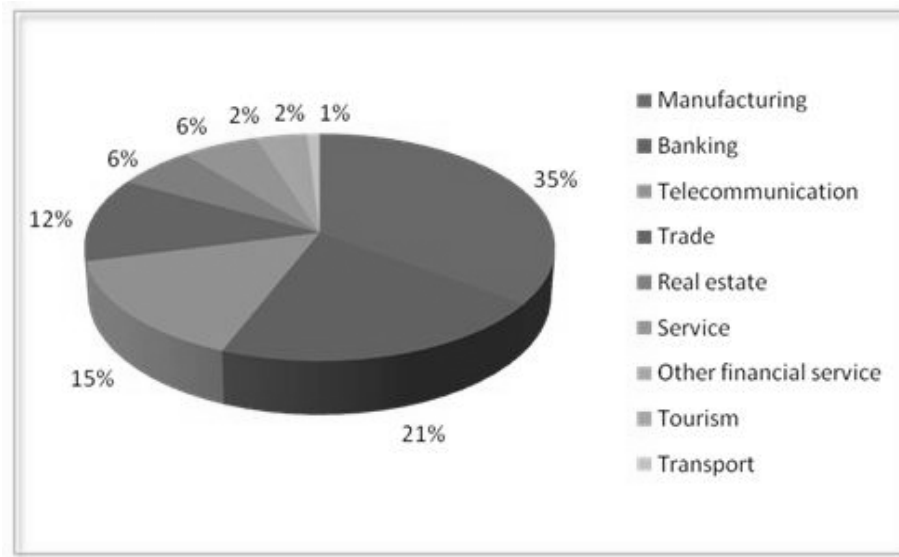
Table 1 Economic Indicators in Bosnia and Herzegovina (2007-2013)

	2007	2008	2009	2010	2011	2012	2013
nominal GDP in million KM	22.065	24.984	24.307	24.879	25.772	25.734	26.123
real growth rate in %	6,0	5,6	-2,7	0,8	1,0	-1,2	1,6
unemployed in thousands	527	493	498	517	530	543	553
GDP per capita	5.743	6.503	6.325	6.474	6.712	6.709	6.889

Source: <http://cbbh.ba> (Central Bank Bosnia and Herzegovina)

The data about share of tourism in GDP and employment are different from source to source. The study of USAID FIRMA Project, Forecast of Bosnia and Herzegovina industry for year 2013. Tourism sector,, states that statistical data in the field of tourism are not reliable, since they are not fully in line with international standards for this sector. Also, the WTTC estimates indicate that the total contribution of travel and tourism sector in relation to GDP is much stronger and bigger than it is shown in the "official" data. Therefore, the overall impact and importance of BH tourism sector in B&H. Economy in 2011 is estimated at 7.4% of GDP, as opposed to direct or influence official estimates of 2.1%. Indirect and induced impacts of tourism sector make additional 5.4% of GDP. According to estimates by the WTTC, the other two main indicators of the importance in the tourism industry and its impact on employment and export earnings is accounted for 6.7% contribution to total employment, and had a 9.6% share in total exports in 2011 (compared to the official data of direct influence, according to which the share of employment was 4%, while the share of total revenues from exports of goods and services amounted 8.6% in Bosnia and Herzegovina).

Figure 1 FDI Stocks by industry in Bosnia and Herzegovina 2013



Source: <http://www.fipa.gov.ba> (Foreign Investment Promotion Agency of Bosnia and Herzegovina)

The annual report for 2013,, Economic Trends in 2013,, prepared by the Department of Economic Planning to Bosnia and Herzegovina states that tourism was not the branch significant for foreign direct investment. Although, with natural resources and the potential for tourism in the open, rich heritage and history; good geographic position; internationally renowned events (i.e. Sarajevo film festival), glossy gastronomic offer at reasonable prices and the status. Bosnia and Herzegovina has predetermination for a highly successful tourism sector. But, it is still unknown tourist destination for major markets. If not yet attractive for FDI, tourism sector can be improved by appropriate usage of EU funds. On the other side, besides of all shown indicators and of competitiveness of Bosnia and Herzegovina on the European and global level, there is an evident increase in both domestic and foreign tourist arrivals and overnights in the period of three years.

Table 2 Arrivals of domestic and foreign tourists in Bosnia and Herzegovina

2011		2012		2013	
Domestic arrivals	Foreign arrivals	Domestic arrivals	Foreign arrivals	Domestic arrivals	Foreign arrivals
294,203	391,945	309,242	438,585	315,608	528,579
686,148		747,827		844,187	

Source: <http://www.bhas.ba> (Statistic Agency of Bosnia and Herzegovina)

Table 3 Overnights in Bosnia and Herzegovina

2011		2012		2013 (jan-apr)	
Domestic overnights	Foreign overnights	Domestic overnights	Foreign overnights	Domestic overnights	Foreign overnights
668,200	836,005	714,440	931,081	185,659	254,182
1,504.205		1,645.521		439,841	

Source: <http://mvteo.gov.ba> (Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina)

Tables 2 and 3 show number of growing touristic visit of domestic and foreign arrivals and overnights. Overnights in year 2013 for the period jan-apr are increased 8,9% compared to year 2012. During the year 2012 Bosnia and Herzegovina had around 750, 000 tourist arrivals which resulted in revenue approximately of 603 million dollars (458 million euro). Compared to the previous year 2011 increased the number of arrivals and overnight stays by 11.9%. In 2013, Bosnia and Herzegovina was visited around 850,000 tourists, which is an increase of 13 percent compared to 2012. The above brief review confirms the fact that even in times of global economic and financial crisis, tourism sector recorded steady growth of available indicators, such as tourist arrivals and overnight stays, and the total annual income of the sector.

But, as it is presented in table 4, tourists are not staying long in Bosnia and Herzegovina, which indicates lack of public strategies and investments in the development of the tourism product, and the lack of promotion and marketing for international markets in order to attract and keep interested potential tourists. It should be emphasized as a long-term strategic goal for the sector, with a direct positive implication on revenue growth and employment in the sector. The increase in arrivals and overnight stays in the past three years may indicate that there is a growing awareness of the destination, but not of a complete products and offer, which can make tourists to decide to visit more destinations and events during the stay in Bosnia and Herzegovina.

Table 4 Top 10 countries arrivals in Bosnia and Herzegovina (jan-apr) 2013

No	Country	Arrivals	Structure of overnights	Average days overnights	No
1	Croatia	27.379	23,9	2,2	
2	Serbia	20.555	18,5	2,3	
3	Turkey	11.345	9,2	2,1	
4	Slovenia	10.464	8,4	2,0	
5	Italy	6.192	5,2	2,1	
6	Austria	4.307	3,2	1,9	
7	Germany	4.097	3,4	2,1	
8	Montenegro	2.916	2,7	2,4	
9	USA	1.727	1,6	2,3	
10	GB	1.482	1,4	2,4	

Source: <http://mvteo.gov.ba> (Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina)

Countries that were represented in Table 4, showing total arrivals and overnight stay are countries in the region, as well as countries that are partners in some Cross Border

Cooperation IPA EU projects, where B&H participated as well. Participating in EU projects, Bosnia and Herzegovina does not only get funds, but also the knowledge, networking, and also promotional component. During the implementation of projects in which B&H participates, there is also component of representing the country. The proximity of these countries is also one of the advantages for tourists who do not prefer to travel to distant destinations.

2.2. IPA projects 2007-2013 in tourism sector

European commission, as much as other international and local organizations, dealt with various issues and problems related to the tourism sector in Bosnia and Herzegovina in past 10 years. Often they stated the existence of the great features of its further improvement and development. These, like all other studies and analyzes have identified a number of key strengths, weaknesses, opportunities and threats in the tourism sector of Bosnia and Herzegovina. The Directorate for European Integration (DEI) as independent and expert body of the Council of Ministers of Bosnia and Herzegovina (B&H), besides many duties, helps with financial assistance of the European Union (EU) . Two of the five components previously available from IPA funds Bosnia and Herzegovina provided a great means, precisely, in the period from 2007 to 2010 a total of 332 million grant, by the end of 2012 BH stood at 488.2 million available euro and by the end of 2013 approximate 600 million euro. Speaking about project in tourism sector IPA (2003-2007) did not take place in large number of projects/grants. Not count for cross-border cooperation (CBC).

What was the intention of this research: to determine not only the impact of EU funds on the growth and development of the tourism sector, but also whether effects of projects are followed after the completion of the project. This would define their sustainability through some kind of monitoring the effects of the level of the country where the project was implemented, as well as at the level of donors. The importance of monitoring the effects of the projects is to determine the effectiveness of the project from the perspective of the user, in order to determine whether projects meet their mission.

Table 5 IPA Projects/grants 2007-2013 for developing tourism sector in Bosnia and Herzegovina)

No	PROJECT TITLE	EU FOUNDING (EURO) (IPA)	PROJECT PURPOSE	EFFECTS KNOWN TO DEI
1.	Creation of Trebižat Heritage Trails „The heart of Hercegovina“	€ 300,000	To improve the content of regional tourism offer in Herzegovina and increase number of tourists visiting Herzegovina and increase number of overnight stays in Herzegovina.	NONE
2.	Development of the Eco Zone NP Una and enrichment of its tourist offer	€ 349,084	To create a recognizable tourist offer of the NP Una using its available resources and surroundings through: 1) Development / improvement of tourist infrastructure; 2) Development of the tourist services in the NP UNA; 3) Development and promotion of the NP UNA tourist product.	NONE
3.	Šipovo Eco Zone	€ 346,802	Establishment of sustainable eco tourism offer in the Šipovo region through creation of eco zone with support to infrastructure, tourism program development, extensive training and education campaigns and coordinated marketing efforts.	NONE
4.	Support to Development of the Eco Tourism in Sutjeska National Park	€ 349,985	Development of eco-tourism in Sutjeska National Park, through development of new eco-tourist product, development of tourist infrastructure, strengthening the	NONE

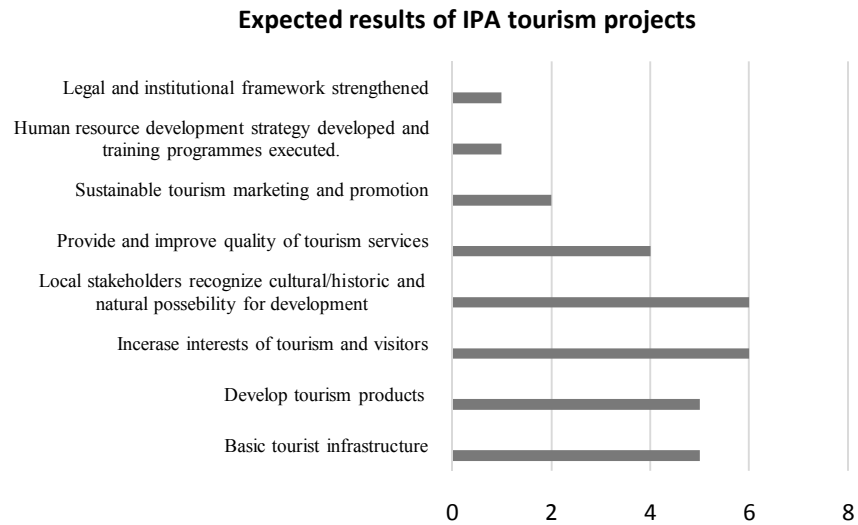
			human capacities and new marketing approach.	
5.	TAJAN - Tourism, Adventure, Joy, Attractions, Nature	€ 346,199	Improve the competitiveness of the Central Bosnia region in the niche of eco-tourism by developing sustainable tourism in the DEZ Tajan.	NONE
6.	TECHNICAL ASSISTANCE TO SUPPORT TOURISM INDUSTRY IN BOSNIA AND HERZEGOVINA	€ 2,596,520	To strengthen capabilities of the BA tourism support structures at State, Entity and Brcko District levels to address the challenges faced by a growing tourism industry.	NONE
TOTAL EU IPA FUNDED 2007-2013 = 4,261,596 €				

Source: Directorate of European Integration (DEI)

Going deeply into measuring of effects, hierarchical system displays as transferring responsibilities and duties. As it noticed in Table 5, effects of completed projects for DEI are unknown. It is not just about tourism sector, it is in general. As they said in interview for primary researches, the key question is effect of any project after it is done. Bosnia and Herzegovina, according to them, does not have analytical possibilities to deal with such complex issue. Also, there is lack of experts in this area as well. In such a complex system of disintegration and political influence on projects, no one does not deal with a list of priorities and efficiency of the project. It is important that the form and content are met.

There is no interaction between donors, agents, participants and beneficiaries of the project and it also emerged as a key issue. The institutions serve themselves; the administration-it serves too. The state has no feedback and no adequate strategy that truly has a vision of sustainability. DEI also pointed out that the IPA does not solve the economic problems of Bosnia and Herzegovina; IPA helps if country has a secured environment for it. Projects seem to realize as "earning" salaries, approaching to them very formally, not essentially.

Figure 2 Most common expected results of IPA tourism projects 2007-2013



Source: authors

The question to answer is: after project is finished does anyone really measure expected results written in project and who is in charge for it actually? There is as state with non specific strategy, shifting responsibility to the ministry, cantons, municipalities, etc.

Table 6 IPA CBC programs

2007-2013	IPA CBC B&H - Montenegro	IPS CBC B&H - CROATIA	IPA CBC B&H - SERBIA	IPA CBC ADRIATIC	(SEE) transnational programs in Southeast Europe and the Mediterranean
No of municipality/countries/people /	56 in Bosnia 13 in Montenegro	95 in Bosnia 15 in Croatia	67 in Bosnia 31 in Serbia	EU countries and potential EU candidates	16 countries 200 milion people
Tourism objectives	Development of tourism and rural parts, environmental protection and natural resources	Development of tourism, share the promotion of entrepreneurship and awareness of short-term and long-term value	Cultural heritage and social cohesion	Sustainable tourism development	Environmental protection, development of tourist facilities
IPA founding	B&H 2,500,00 euro Montenegro 3,000,000 euro	B&H 5,000,000 euro Croatia 5,000,000 euro	B&H 3,500,000 euro Serbia 5,700,000 euro	Over 166 million euro (IPA and European Regional Development Fund (ERDF) included)	Total founding: 245,1 million euro IPA founding for Western Balkan countries 2010-2013: 16,000,000 eur

Source: Directorate of European Integration

To be well prepared for the project implementation and for the expected results requires organized administration, operative group work and quality of management, which is present in all of the projects. The information sharing process from donors over institutions to the final implementation and end users supposed to be “chain” of transmission information. Projects are missing reliable information in all fields of the project effects after implementation of projects. Above all, the issue is strategies without adequate vision and long-term determinant of which depends sustainability of the projects and their effects. Considering previously mentioned facts concerning the unreliability of statistical sources and different methodologies in use, the issue of tracking effects may be initiated only when international standards for monitoring this sector are in use. In addition, there is no possibility to follow effects of EU funds through macroeconomic indicators, such as GDP. Regardless of the complexity of establishment; statistics are not able to give realistic data on stake of EU funds in GDP, due to few reasons:

- large number of grants does not go through treasury
- there is no ability for independent management of EU funds
- financial management of EU aid is centralized
- there is no complete and updated database on all funds.

One cannot quantify contribution of EU funds in GDP of Bosnia and Herzegovina, and all eventual projections can be based on assumptions only, because funds are going through the state in many ways. In some cases, like with co-financing and infrastructural project, it could be singled out, but the real impact of EU funds on growth and development of Bosnia and Herzegovina cannot be measured currently. Apart from that, various sourced of data are analyzing various time periods, so there is no consistency in data here. So, on all levels, there is no reliable data and analysis, including tourism sector data.

3. EXAMPLES OF IMPLEMENTED PROJECTS-EXPECTED AND ACHIEVED EFFECTS

In accordance with these problems in monitoring the effects of tourism at all levels and obtaining statistically reliable information, the authors have planned to get some answers and suggestions on how to be able to monitor the effects of EU projects, in order to have feedback on the effects, not only on successful implementation of projects.

3.1. CBC project S.T.A.R.

Project S.T.A.R. (Statistical networks in Tourism sector of Adriatic Regions) aimed to create a “shared knowledge in the Adriatic tourist area”, where the combination of ICT and tourist information is the key for innovation and support for better and more efficient and sustainable tourism policies within the Adriatic Area. There were ten partners in this project from five countries, and B&H partner was presented by Business service center of Zenica-Doboj Canton. The main achievement of the project was STAR web application Tourism Portal of the Adriatic Area”. STAR portal enables: customer satisfaction survey, collecting statistical tourism data, knowing market trends and improving tourism policies. In order to make reliable compression of tourism data in the Adriatic region it was necessary to equalize the methodology of data collection and its presentation. To achieve that, project has established unique system of tourist indicators in order to collect data by using the same methodology in all regions. Comparing with issues of Bosnia and Herzegovina regarding tourism effects and value of measured information, STAR is created to secure valid information in the future. Primarily it is orientated to tourist. Benefits of S.T.A.R. project to Zenica-Doboj canton tourism:

- usage of statistical tool based on common methodology
- useful tool for the promotion and dissemination of good practice in the region
- direct benefit to large number of different users, due to the wide range of opportunities to use comparable data across the Adriatic area

Effects are primarily oriented to tourists, who are verifying through product consumption, that all the efforts to improve touristic offer are in accordance with their needs and characteristic changes in structure of demand. As it is explained in Final publication of the project (<http://www.startourism.eu>), B&H as partner expected following improvements:

- Better monitoring, reporting and planning in the tourism sector
- Harmonization with modern systems of other prominent tourist countries and EU regulations from this field
- Efficient data collecting system (direct access to the database and direct input of the data) has to be created

Local users and participants of Zenica-Doboj Kanton expressed opinion that experience in collecting data and statistical monitoring of tourist flow emphasized a notable lack of reliable statistics in the tourist sector in the Canton, which does not reflect the real situation. In this context the idea of STAR has been noticed as very important. Since the project is completed, how one can measure effect of the project on tourism in this canton and B&H? Following should be done:

- To implement and use statistical Portal at the level on B&H, not only on Zenica-Doboj Canton
- Conduct survey among users (tourism associations; tourists, employees; public health institutions, local authorities) if usage of Portal improved business, connectivity between users, decision making processes at authority level, etc.
- Conduct customer satisfaction survey
- Compare financial results from previous periods to today results
- Compare market share in the region in relation to the types of tourism

Expected effects named in Figure 2 should be followed on both cantonal and state level. Such valuable project should provide long term tool for development of tourism, comparable at regional level, since most of the tourists as per table 4, comes from the region.

3.2. CBC project Adriamuse

Project partners (eleven partners from five countries) have initiated a new concept of cultural tourism, with the heritage museum in focus. Cultural tourism is a potential generator of new tourism products, through which attractive events are offered throughout the year. To achieve familiarity with the contents of cultural tourism and attract tourists to this type of tourism, it is necessary to use modern ICT communication tools, and tools for web communication in the sectors of tourism and culture at the level of the museum; cultural and tourism institutions, and small and medium enterprises. ICT plays an important role in improving services, as well as attracting new visitors to the different target groups. As a result of the economic crisis and the reduction of support for the cultural sector, museums must do everything possible to connect people. Due to budget cuts to museums across Europe, they are struggling to do more with fewer resources.

To reach a new and wider audience actors of culture and tourism redefine their presence on the web site or use new forms of marketing. More and more museums are seeking younger (or wider) audience via social networks. Every major museum has a page on Face book or on Twitter. Some institutions also use the internet to give an extra dimension to the exhibition. In addition, the steady progress of semantic web sites provides an opportunity to overcome language problems and to reach to millions of people around the world. This project, promoted cultural tourism outside its traditional walls. The aim of this pilot activity was the implementation of innovative ways to attract audiences who are interested in cultural events. Pilot activities were organized as a cultural activity of the museum within the existing events in the field of culture and tourism. By improving the quality of their web sites, especially in the provision of better information about the culture and tourism in

Bosnia and Herzegovina, museums could use more advantages brought by modern trends of globalization and thus promote culture and tourism of Bosnia and Herzegovina. One similar project Euromuse.net, has enabled the promotion of museums in Zenica-Doboj Canton and their services beyond local boundaries and improved the quality of information about museum collections, exhibitions and events in Europe, and to provide for the inclusion of local cultural institutions in modern streams of events.

Possible effects of the project could be:

- awareness of the general public with culture events and museums in B & H
- expansion of tourism throughout the year
- involvement in basic tourism products (congress tourism, spa, winter tourism)

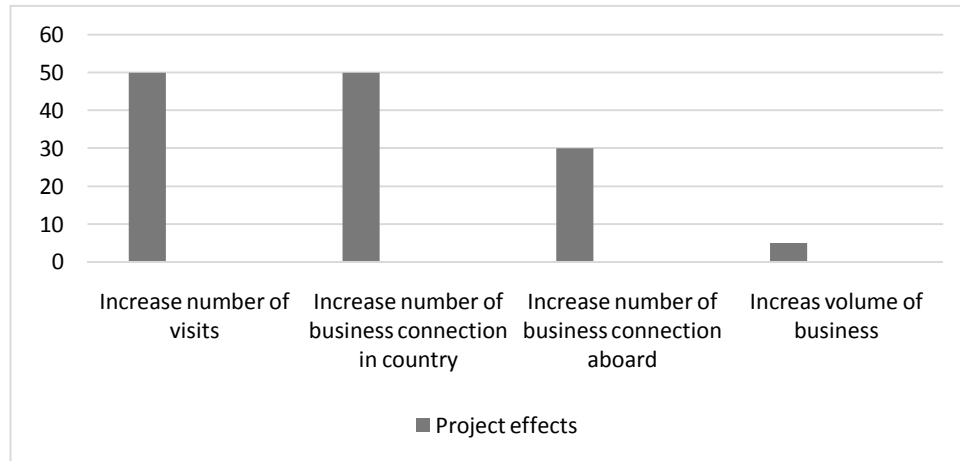
This project, the same as S.T.A.R. project enabled to B&H to improve usage of ITC technology and to be more presented at Adriatic region. So far there is no data on possible effects on B&H tourism, but could be useful to research:

- is there increased visits to museums and cultural events
- are cultural events and museums included as part of tourism offer
- how good is tourism sector connected to ITC sector in this regard

3.3. CBC project Support for the development of rural tourism destinations and mountain Rajac and Vranica

One of the main goal was support of sustainable economic development in both countries B&H and Serbia, while preserving natural resources, local identity and cultural heritage. Figure 3 shows effects of this project based on primary researches and interview.

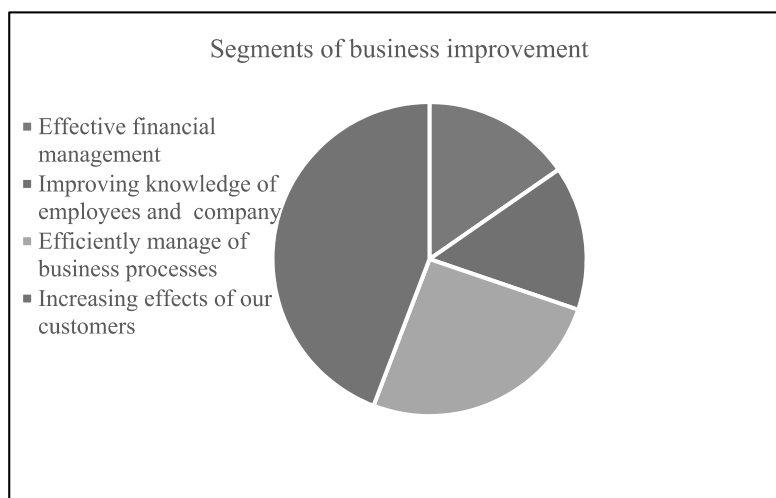
Figure 3 Effects of the project



Source: Authors

Although those elements are recognized as effect there are still no valid instruments that can quantitatively measure the impact of these effects on tourism development in the region. For instance, Fojnica and Kreševo noticed increased number of visitors and clients, same as increase of business connections in country and outside of it, which is positive, but how that can affect B&H development, is question.

Figure 4 Business improvement



Source: Authors

As advantages of the projects, partners have identified:

- ability to connect with similar initiatives in the region
- learn from the experience of other EU countries through study visits and different training practices

On the other side partners have identified that there was a lack of sufficient involvement of local institutions to develop projects in the field of tourism and applying for EU funds and lack of awareness about the opportunities that these projects offer.

3.4. Project Šipovo Eco Zone

Through the primary researches and using data from it was found that main project objective was Economic development and strengthening of local SMEs through sustainable tourism reinforcement in the region. Establishing their specific objects such as sustainable Eco tourism offer through creation of eco zone with support to infrastructure, tourism program development, extensive training and education campaigns and coordinated marketing efforts, they increased business compared for 50%. Also they established intern and extern connections, but there is no relative number of effects after project was completed, that could help in the field of tourism, as it was discovered through the interview conducted with representative of Tourist organization in Šipovo.

4. CONSLUSION

What is important to note in connection with EU projects is that it requires a greater level of interest of authorities and institutions to draw funds available, in order to facilitate the development of tourism. At the same time, there is a need to monitor the effects of projects implemented after the completion of project activities, in order to determine the degree of justification of future investments. Implementation of project activities should not be the purpose itself, but the sustainability of activities by monitoring progress in areas where resources have been invested. Furthermore, some experiences from the above examples suggest that sometimes activities end up after the completion of the projects, indicating a lack of willingness to take step forward. However, if the results show that there has been improvement of business activities as a result of the project, then it is needed to take a strategic approach for creating conditions of sustainability of project activities after its implementation.

Bosnia and Herzegovina primarily has to change the perception of understanding of EU funds at all levels connected to implementation of EU projects. They are primarily intended for improving the institution as one of the pillars of competitiveness. These institutions still need to develop strategies and long-term plans for sustainability and creating new ideas and visions. Strategic documents should be clear and include component of EU projects and monitoring planned and achieved effects.

REFERENCES

Central Bank of Bosnia and Herzegovina, *Economic indicators*

B&H Directorate for Economic Planning (2014) *Economic trends in 2013*

Directorate for European Integration

Federal Ministry of Environment and Tourism.(2008), *Tourism Development Strategy of the Federation of Bosnia and Herzegovina for the period 2008-2018, (December)*

World Economic Forum (2013), *The travel and tourism competitiveness*

World Economic Forum (2013-2014), *Global Competitiveness*

<http://travel.nationalgeographic.com/travel/tours/europe-tours-2012/>

<http://mvteo.gov.ba>

<http://www2.unwto.org>

<http://www.firmaproject.ba>

www.dei.gov.ba

<http://www.startourism.eu/Default.asp?p=home>

<http://www.adriamuse.org/>

www.euromuse.net

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POSSIBILITIES OF QUANTIFYING ABSORPTION CAPACITY OF BOSNIA AND HERZEGOVINA

ABSTRACT

The ability of Bosnia and Herzegovina to use EU funds is an essential prerequisite for the implementation of activities aimed at its economic growth and development. Insufficient use of European funds due to lack of information, professional staff, or lack of planning investments covered by a single development plan and budget can slow down processes such as: the process of communication between funds and target group; process of generating ideas and shaping them into projects and as well as the process of implementation of projects. The establishment and development of the necessary material and intellectual components in Bosnia and Herzegovina in order to attract funds is justified, taking into account the results that some of the beneficiary countries have made of EU funds. Absorption capacity is measured by the level of utilization, but also the quality of the use of EU projects, meaning that value for money is being achieved. Measuring the absorption capacity is carried out through three factors: macroeconomic absorptive capacity as the total amount of EU funds allocated in the state as a percentage of GDP of the state; the ability of co-financing of EU projects, as well as administrative capacity as the ability of the state administration to manage the project cycle. Taking into account all these factors, Bosnia and Herzegovina in this case has a low absorption capacity, as it is still running in the system of centralized management of funds of the European Union, which largely influence the impossibility of monitoring EU funds through GDP and quantitative connection with the growth and development, which would certainly be necessary to quantify and monitor.

Keywords: economic growth, capacity building, national policy

JEL classification: B23, O10

1. INTRODUCTION

Realistic and full quantification of absorption capacities of Bosnia and Herzegovina is not possible in a way which predicts analysis of its three factors: macroeconomic absorption capacity as total amount of EU funds allocated in the state as a percentage of GDP of the state, the ability of co-financing EU projects, and administrative capacity which entails ability of state administration to manage project cycle.

There are many obstacles for following effects of pre-accession funds on economy of Bosnia and Herzegovina through appropriate econometric models which would connect absorption capacity with economic growth and development. These obstacles disable realistic measurement of effects of EU funds on growth and development of Bosnia and Herzegovina, and picture of growth and development as how it would be without EU funds, as well as how this growth and development is now. Apart from inability of full measuring of absorption capacities of Bosnia and Herzegovina, country is now facing possible blocking of EU funds due to unfulfilled conditions for their use.

European Commission blocked 47 million EUR, by which planned resources of pre-accession aid for year 2013 are reduced by 54%, because the political leaders of Bosnia and Herzegovina could not reach an agreement with representatives of European Commission regarding applying of judgment "Sejdic - Finci".

Project which would probably not be funded within IPA program in year 2013 include:

1. transport infrastructure
2. support for competitiveness of small and medium size enterprises
3. participation in EU programs

European Commission will not limit funds which are meant for direct benefit of citizens of Bosnia and Herzegovina, for example, in area of support for:

1. refugees and dislocated persons
2. social inclusions in education and
3. conduction of Action Plan for Romas.

Therefore, IPA national program will probably be reduced in 2013 and total funds will aggregate to 39 million Euros. One should also add that European Commission had to cancel two previously suspended projects in field of agriculture, in value of 5 million Euros, due to inability of B&H authorities to agree on domestic structures for giving EU aid for agriculture and rural development (IPARD).

This also disables timely establishment of structures of directing important future funds of EU for development of rural areas in B&H. In July, European Union suspended 4.5 million Euros allocated for aid projects for tourism and introduction of system for quality management in small and medium size enterprises. All this data confirm the fact that Bosnia and Herzegovina is still far away from funds' management, and even further away from possibility of realistic quantification of EU funds' impact on growth and development

of Bosnia and Herzegovina. Since having a status of potential candidate for EU membership, Bosnia and Herzegovina is expected to put in tremendous effort in terms of fulfillment of political, economical and legal conditions. B&H, as a potential candidate, is waiting since 13 years to first get the status of candidate country, after June 2000, when it was recognized as potential candidate on EU summit. European Commission postponed talks about IPA II, so that Bosnia and Herzegovina runs a big risk to lose considerable amount of IPA funds. IPA II, through its modified conditions enables availability to all areas of politics, i.e. former components, regardless whether the country has a status of candidate or potential candidate, but Bosnia and Herzegovina has to put in all mentioned effort to have access to them at all. Disputes regarding sharing of authority between the state and entity still disturb the efficiency of EU financial aid to Bosnia and Herzegovina.

2. CAPACITIES OF BOSNIA AND HERCEGOVINA FOR THE ABSORPTION OF EU FUNDS

Absorption capacity represents a measure for level of usage and quality of usage for EU projects. Absorption capacity is made of institutions and human resources who are in field of programming, management and realization of projects funded by the European Union funds. Absorption capacity can be seen as: capacity of state institutions who should manage the funds and capacity of fund users (government and non-government organizations).

Absorption capacity of a state is measured based on three factors (Vukov. D, Sokić. M, Đurđev. T, et. al:9):

- macroeconomic absorption capacity represents the total amount of EU fund allocated to a state, presented as the percentage of GDP of that state.
- financial absorption capacity represents ability of national institutions to co-finance EU projects.
- Administrative absorption capacity entails ability of state administration to prepare programs and projects, to coordinate work between partners and interested parties from public, NGO and business sector, and monitor and report to European Commission on projects.

Most important institutions in Bosnia and Herzegovina for establishing de-centralized management system are: Directorate for European integrations of B&H and Ministry of Finance and Treasury of Ministers Council.

2.1. Macroeconomic absorption capacities

For following amounts of EU funds allocated in Bosnia and Herzegovina, which represent a percentage of GDP, it is required to meet several pre-conditions. As per Law on Statistics, for level of B&H Agency for B&H Statistics is responsible, whereas for level of entities, Agency for FB&H Statistic and Republic Institute for RS Statistics are responsible. Central Bank of B&H is responsible for monetary statistics, payment balances and other financial statistic in B&H. Regardless of the complexity of establishment, statistics are not able to give realistic data on stake of EU funds in GDP, due to few reasons:

- large number of grants does not go through treasury
- there is no ability for independent management of EU funds
- financial management of EU aid is centralized
- there is no complete and updated database on all funds.

One cannot quantify contribution of EU funds in GDP of Bosnia and Herzegovina, and all eventual projections can be based on assumptions only, because funds are going through the state in many ways. In some cases, like with co-financing and infrastructural project, it could be singled out, but the real impact of EU funds on growth and development of Bosnia and Herzegovina cannot be measured currently. Apart from that, various sourced of data are analyzing various time periods, so there is no consistency in data here.

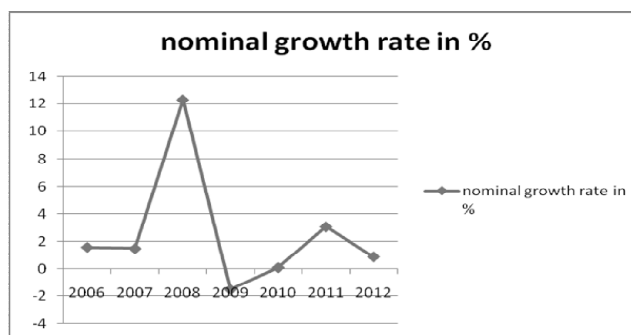
Table 1 Economic indicators in Bosnia and Herzegovina (2006-2012)

	2006	2007	2008	2009	2010	2011	2012
nominal GDP in million KM	21152	24424	26783	26378	26410	27240	27496
nominal growth rate in %	1,6	1,5	12,3	-1,5	0,1	3,1	0,9
real growth rate in %	9,5	10,4	4,9	-4,2	-0,6	2	-0,2
unemployed in thousands	516	527	493	498	517	530	543
GDP per capita	5504	6357	6971	6864	6872	7094	7157

Source: www.dep.gov.ba (Directorate for Economic Planning of Bosnia and Herzegovina)

As for economic development in Bosnia and Herzegovina, nominal rate of GDP growth in Bosnia and Herzegovina had a trend to growth from year 2006, but in year 2009 it had negative step of growth, as a consequences of recession. Subsequent growth is shown in year 2010 and year 2011, whereas year 2012 it fall again as a consequence of recession wave in Euro zone.

Chart1 Nominal growth rate in % (2006-2012)



Source: www.dep.gov.ba (Directorate for Economic Planning of Bosnia and Herzegovina)

Position of B&H according to report on global competitiveness for 2012 is not so well (Federal development planning Institution, Competitiveness of BH 2012:16). B&H is on place 88. out of total 144. places. Biggest growth is noted in field of institutions and innovations, and biggest fall of indicators in field of macroeconomic stability. B&H still is far behind in field of development of financial market and efficiency of goods market, as well in field of business sophistication.

The area of development of the financial markets has low position primarily due to poor availability of financial services, pure availability of funds for lending to businesses and low level of approved funds. In the area of efficiency of goods markets there is a bad score primarily due to: the intensity of local competition, the degree of market dominance, the number of procedures to start a business, the number of days required to start a business, the degree of the effect of taxation, the cost of agricultural policy and customer sophistication.

Business sophistication is essential for greater efficiency in the production of goods and services. This leads to increased productivity, which strengthens the competitiveness of the country. Business sophistication cares about the quality of the entire business network of the country as well as the quality of individual companies and strategies. Some

improvements have taken place in the field of Institutions (from position 109 in year 2011. to position 85 in year 2012.) and innovation.

Most problematic factors for successful business in Bosnia and Herzegovina which affect the low level of competitiveness are: access to financial resources, high tax rates, inefficient bureaucracy, and lack of vision in government sector for finding ways to elevate competitiveness.

As per Agency for statistics of Bosnia and Herzegovina, for all main trade partners (Croatia, Germany, Serbia, Italy, Slovenia and Russia) export has fallen 4,4% when compared to 2011. Mentioned problems and trends indicate the inevitable impact of movement in Euro zone on movements in Bosnia and Herzegovina, as well as need to establish conditions for more efficient usage of EU funds which would be done through decentralized management system for these funds.

2.2. Financial absorption capacities

Co-financing is basis for getting structural funds from EU, and the aim is to motivate states to give financial contribution and used the funds more efficiently. Co-financing is applied to pre-accession funds as well. Financial absorption capacity means that national, regional and local administrations plan the co-financing of projects and programs in their budgets.

In period from year 2006 to year 2011 state institutions implemented 23 of total 462 realized projects, i.e. their participations were as little as 5%. Under state institutions which are included in table 2, following are listed: ministries on state, federal and cantonal level, municipalities, court, High Court and Prosecutor Council. BH institution will have a special significance once the road for structural and cohesion funds in Bosnia and Herzegovina is open.

Table 2 Participation of government institutions in the implementation of EU projects (2006-2011)

The total financial value of the implemented projects (Euro)	Total number of projects	Participation of BH institutions in projects (Euro)	Number of projects with BH institution participation	(%) of BH institutions participation in total value of projects	(%) of BH institution participation in number of projects
270.620. 517,00	462	6.019.459,00	23	2,22 %	4,97%

Source: www.donormapping.ba

According to data Donor Coordination Forum, investments in accordance with Table 2 are in the following areas (in EUR):

• infrastructures	45,424,241.00
• institution building and reform	60,264,644.00
• economic development	54,942,638.00
• peace-building and conflict resolution	55,858,908.00
• education	13,663,213.00
• environmental protection	25,242,410.00
• gender equality	267,211.00
• young	333,378.00
• agriculture and forestry	6,233,978.00
• health	4,274,649.00
• refugees	2,881,714.00
• projects of local authorities	1,233,533.00

2.3. Administrative absorption capacities

In Bosnia and Herzegovina centralized management system for European Union funds is applied, and that means that leading role is still held by European Commission. European

Union (EU) developed a line of programs in shape of non-returnable aid which should help states who strive for membership in EU. These funds are designed to empower these states to fulfill all political, institutional and socio-economic criteria. Problem of majority countries in transition towards EU is inability of their national institutions to take over the money which is at their disposal.

Introduction of a new instrument for Pre-Accession Assistance IPA II, involves the dissolution of the five components and the introduction of the concept of policy areas. This approach opens up the possibility that financial assistance is available in all areas of policy, regardless of the status of a candidate or potential candidate. Theoretically DIS is no longer a condition for access to funds from any of the policy areas (former IPA components), but in practice it will be very difficult to absorb / deploy funds from the IPA II without the necessary management structures, and Bosnia and Herzegovina will face a limited ability to absorb EU funds, especially with regard to economic and social development. Accordingly, Bosnia and Herzegovina should restart activities in establishing decentralized management of EU funds.

In decentralized management system for EU funds, apart from other fulfilled conditions, Bosnia and Herzegovina should be able to follow participation of EU funds in GDP, because all funds would go through treasury and would be registered. Ability to manage funds represents an important factor for following growth and development of country, as well as quantitative analysis of impact of EU funds on respective growth and development.

2.4. Absorption capacities of NGO sector in Bosnia and Herzegovina

During directing of funds, EU countries do not only rely on capacities of national institutions. For higher realization of EU funds, it is required, apart from state institutions, to include other institutions: academic communities, non-profit and private sector. If we analyze data on projects realized in period from year 2006 to year 2011 in Table 3, we come to conclusion that participation of other institutions is more present than participation of state institutions.

Table 3 The participation of other institutions in the implementation of EU projects (2006-2011)

Institution	Number of project realised	Financial value (Euro)	% participation in realised projects
	Total 437	Total 261.228.845,00	
High education	7	2.577.910,00	1,5%
Tuorism assisiation	2	592.480,00	0,43%
Private enterprises	76	18.470.566,00	16,45%
Domestic NGOs	118	15.947.157,00	25%
Foreign NGOs and consultants	167	147.046.147,00	35,71%
European Comission	69	76.594.585,00	14,93%

Source: www.donormapping.ba

Data shows that only domestic NGOs have realized 25% i.e. 118 projects. Strongest role in absorption of EU funds is still held by foreign NGO and consulting organizations. Foreign NGO and consulting institutions, in mentioned period, implemented 167 projects, i.e. 35,71% of total number of project, so in this segment too, one has to strengthen the absorption capacities.

3. POSSIBILITIES FOR IMPROVING ABSORPTION CAPACITIES OF BOSNIA AND HERZEGOVINA

Government of B&H has the strongest role in process integration of Bosnia and Herzegovina with European Union. It is required from government of B&H to define and resolve main political obstacles which block progress of the state towards EU and speed up the entire process, signed by Agreement on stabilization and accession.

Whilst B&H, in accordance with instructions from EU works on passing the required laws and strategies, it also has to follow up happenings in the region as well as in countries which last joined the EU. Very important for B&H, will be to learn from their experience because only that way the mistakes made by certain countries during accession to EU and absorptions of EU funds, can be avoided. By following their indicators of stake of EU funds in GDP, one can measure the effects of EU funds in these countries and remove obstacles in following the same in Bosnia and Herzegovina. Importance of usage of these funds is not only significant because of availability of money, but because of orientation of national economy towards higher innovation through usage of human potential.

Strengthening of government and non-government sector and their coordination, can contribute to strengthening of absorption capacities by regular education in the field of project preparation. Establishing of de-centralized system of funds management would mean complete readiness for independent management of cycle, and the possibility of monitoring funds through treasury and measuring of stake of funds in GDP. It is required to establish a system of monitoring results and real effects of projects as per their segment, and through reporting report to public about it. It is required to plan co-financing of projects, which is one of frequent problems when realizing projects. Strengthening of competitiveness of Bosnia and Herzegovina depends on line of factors which can be connected with grade of usage of EU funds, and it is especially important to strengthen the private sector and direct it towards export through stimulation, benefits and financial support for export business.

According to Report on progress in Bosnia and Herzegovina in year 2013, prepared by European Commission, very small progress has been made in comparison to other states in region. Faster progress will result in better competitiveness of Bosnia and Herzegovina. Basic criteria which have to be fulfilled by all countries joining EU are: political stability (democracy, rule of the law, respecting human rights), functional legal system (ability to take over obligations of membership) and economic stability. Report emphasizes that Bosnia and Herzegovina is still in stoppage with process of European integrations, whereas other countries of region are progressing (Enlargement Strategy and main challenges 2013-2014:34).

4. CONCLUSION

Bosnia and Herzegovina have access to certain funds of European Union which can help to resolve many problems. Advantages which it can realize as a user of EU projects are:

- employing of larger number of people through projects financed by EU and reduction of unemployment which is growing
- smaller number of loans for development projects
- resolving the problem of accessing money due to problems of financial market rated as one of the undermost segments of B&H development, as reported in report on global competitiveness for year 2012
- acquiring knowledge and training of people and institutions used for other projects, as well as resolving of problem of business sophistication rated among undermost in fields of development of B&H in report on global competitiveness for year 2012.
- strengthening of business sophistication rated amongst undermost in fields of B&H development in report on global competitiveness for 2012.
- ability to draw capital into the country.

Absorption capacity of institutions in Bosnia and Herzegovina is on unsatisfactory level. In monitored period from year 2006 to year 2011, state institutions implemented a total of 23 of 462 realized projects, i.e. their participation was around 5%. Foreign NGOs and consulting institutions had an important role in realization of EU projects in Bosnia and Herzegovina. For the same period, these institutions implemented 167 projects, i.e. 35,71% of total number of projects. Domestic NGOs, 57 of them, implemented 25% project which is low considering that there is over 12000 registered NGOs in Bosnia and Herzegovina. Seeing reports on global competitiveness for year 2012, biggest improvements are recorded in field of institutions and innovations, i.e. where the most of EU funds are used, as it is named as explanation of Table 2.

Main reasons for weak absorption capacity are:

- slow fulfillment of obligations by state institutions stipulated in Agreement on stabilization and accession
- non-existence of de-centralized system of funds management, by which all EU funds would go through treasury, and so enable quantitative monitoring of effects on growth and development of Bosnia and Herzegovina
- dependence on external knowledge that is too high

European Union through European Commission provides exceptional support to the economic development of B&H. Aid is realized through following fields: preservation of macroeconomic stability, development of private sector and intervention for improvement of business environment, local economic development, ensuring social security and direct capital support.

From the field of local economic development and ensuring of social security, European Commission supported activities relating to local employment and building of communities. Also, European Commission in Bosnia and Herzegovina was active in field of designing of policies for labor, employment and goods export. EC gave a big contribution to development of capacities of Central Bank, Agency for Labor and Employment, Directorate for Economic Planning and Ministry of Finance and Treasury. Development of private sector and intervention for improvement of business environment, EC considers as a priority. In past 5 years, effort has been made to increase competitiveness of small and medium enterprises; however stoppage of investment in this area through EU funds in year 2013 could slow down that process.

By establishing an official relation between B&H and EU, i.e. by Agreement on Stabilization and Accession, regional cooperation has been improved. This improved regional cooperation contributes to better neighbor relations, balanced development of less developed regions and affects the general economical development. Having in mind the fact that total macro-economic picture of B&H has structural problems, amongst which the biggest problem is high unemployment rate and weak competitiveness; it is required to seek new development perspective through many chances offered through EU projects.

Very significant for B&H is to learn from other's experience, because only so the mistakes made by other countries during accession to EU and absorption of EU funds can be minimized, but also all the numerous advantages given by usage of EU funds can be seen. Usage and good absorption of EU fund will result in long-term opening of new work places, increase in foreign direct investment and opening of road toward common market. Pace and efficiency of leading the process of B&H accession to EU, are the most important step in development of EU integrations. This process includes stabilization of economic situation, adapting and complying on legal and economic level, as well as development of human resources.

4. REFERENCES

- www.dei.gov.ba Directorate for European Integration BH
- www.delbih.ec.europa.eu EU Delegation BH
- www.ec.europa.eu European Commission
- www.parlament.ba Parliamentary assembly BH
- www.vpi.ba Foreign Policy Initiative BH (NGO)
- www.lgi.osi.hu Local Government and Public Service Reform Initiative
- <http://cfcu.gov.ba> Ministry of Finance and Treasury

www.novosti.rs

www.gradjanizaeuropu.ba

www.donormapping.ba Donor Coordination Forum

www.fzs.ba Federal office for statistic

www.bhas.ba Agency for statistics

www.dep.gov.ba Directorate for economic planning of Bosnia i Herzegovina

www.fzzpr.gov.ba/

PART III

**COMPETITIVENESS AND
CHALLENGES OF
THE ENLARGED EU**

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DATA PROTECTION, PRIVACY AND SECURITY OF E-BANKING RISKS IN EU

ABSTRACT

The paper addresses actual problems of data protection in emerging innovations of banking products and services. In the age of globalization and multinational corporations (MNCs) trans-border data flow (TBDF) has become a problem for business transactions in the countries with strict data privacy laws (DPL). Data controllers are required to observe several principles. Not only do these principles aim at protecting the data subject, they are also a statement of good business practices that contribute to reliable and efficient processing.

Data protection in E-banking transactions will be analysed from various points of view. In the first section authors conduct research customer's privacy of E-banking transaction in general. The second field of interests addressed problems of security of E-banking system as obstacle to the further development of this emerging sector. Thirdly, the paper aims to analyse actual EU legislative regarding data protection and compliance of this legislative in practice. Fourthly, the paper conducts research into the financial sector's exploitation of information in EU as a form of surveillance in comparison with US financial sector's exploitation of information. The Gramm-Leach-Bliley Act (GLBA) was enacted in 1999 to improve the level of security for financial institutions and e-commerce. Under the GLBA, business executives are held personally liable for any misuse of «personally identifiable» and «non-public» information which includes credit card numbers, customers list and any personal information identifying a consumer. The GLBA requires the encryption of all stored non-public data and audit of the system that collects and analyses the data. Authors point to the importance of regulators and their role in the problem of data protection in the financial sector.

Key Words: Data Protection, Privacy Protection, E-banking, EU legislation

JEL-Classification: K22, G20

1. INTRODUCTION

The Data protection in E-banking transactions are analysed from various points of view. The most significant attempts to define international data protection were the OECD¹ Guidelines, the Council of Europe Convention and the EU Directive related to data protection.

The OECD passed the Guidelines on the Protection of Privacy and Transborder Data Flow of Personal Data in 1980. It was logical step in that period because of accelerated process of globalization. Since the guidelines are not legally binding on any of the member countries, they did not really serve as the international DPL (Data Protection Legislation) as intended. (Walczuch and Steeghs, 2001). Problem of international DPL is not solved yet in the end of 2014.

In the first section authors conduct research customer's privacy of E-banking transaction in general and try to point out the reasons why is this sector still underdeveloped especially in some countries. The second field of interests addressed problems of security in E-banking system as obstacle to the further development of this emerging sector. Authors believe that technology is not enough developed in the field of E-banking security. Thirdly, the paper aims to analyse actual EU legislative regarding data protection and compliance of this legislative in practice and in comparison to some other countries. Fourthly, the paper conducts research into the financial sector's exploitation of information in EU as a form of surveillance in comparison with US financial sector's exploitation of information.

Everyone has the right to respect for his private and family life, his home and his correspondence especially if we take into account financial correspondence and global data flow. Data subjects are individuals and employees. Data controllers are the people or the body which determines the purposes and the means of the processing both in the public and in the private sector. A company would be the controller of the processed data about its clients and employees. Data controllers are required to observe several principles. Not only do these principles aim at protecting the data subject, they are also a statement of good business practices that contribute to reliable and efficient processing.

There are various definitions that have been proposed for "privacy". According to Schoeman (1984) it has been regarded – as a claim, entitlement or right of an individual to determine what information about himself (or herself) may be communicated to others; – as the measure of control an individual has over information about himself, intimacies of personal identity, or who has sensory access to him; – as a state or condition of limited access to a person, information about him, intimacies of personal identity.

¹ Organization for Economic Co-operation and Development

Some authors believe that privacy rights are absolute and unequivocal. Privacy rights are viewed here as «human rights». On the other hand, there is some argument about whether privacy rights are absolute or whether they should be balanced against the common good. It appears logical to assume that people's attitudes toward privacy should also be a function of cultural variables such as whether peoples of a nation consider privacy rights to be absolute or relative.

Caudill and Murphy (2004) discuss several theories relating to business ethics, which they believe may be applied to the debate regarding Internet privacy. They reference the Social Contract Theory and the Stakeholder Theory.

The Social Contrast Theory posits that participants to an exchange, such as consumers and business, are engaged in a reciprocal relationship which is governed by a social contract. Thus, within the context of Internet privacy, consumers might provide information to a business in exchange for incentives they consider valuable. Both parties to the contract enter into this exchange and have supposedly evaluated the risks and returns.

The Stakeholder Theory (Freeman, 1984) holds that the various stakeholders of an organization often have conflicting interests which result in tradeoffs. Thus, within an Internet context, companies must develop strategies to ensure that stakeholder's interests are not compromised.

2. E-BANKING PROBLEM OF PRIVACY

Anonymity (or privacy) refers to a customer's ability to do a transaction on the Internet, without her/his identity being known. When a credit card is used, the user needs to be identified in order to have a secure payment. But customers want to be anonymous to the merchants and prefer not to leave any traces of completed transactions. A solution consists of delivering a payment authorization to the merchant through an intermediary, or to use a blind signature at the time of issuing the cash (for virtual wallets, for example).

Fierce competition between banks, both in retail and wholesale, has forced banks to find new and profitable areas where to expand. But Internet banking seems to represent a viable strategy also for new entrants in the banking sector.

Two main business models may be identified in the use of banking portals online. (Arnaboldy, 2008). The first one consists in cross-selling bank products via a Website, thus new clients are reached and distribution channels are diversified, as opposed to the original bank based one (*mixed business model*). Classic banks start to cross-sell bank products via a website in order to reach new clients and diversify their distribution channels ('click and

mortar’). Nearly half of US banks were using transactional websites at the beginning of 2002. Now, this is even bigger share of E- transaction of banks.

A second model is the creation of a pure internet/online bank (IB), which implies the absence of physical branches (*pure business model*). Usually pure online banks are created by banking groups to target price-sensitive clients whom they would not be able to reach via traditional distribution channels. It is the creation of a pure internet bank (IB) without the support of a network of physical branches. Only a few banks have adopted a pure online business model. (DeYoung 2005, Arnaboldy, 2008)

The use of internet does not pose important security problems, as fraudulent payments, the abuse of privacy, and virus problems are relatively limited (with the exception of Spain). Nonetheless, the security of internet for doing transactions is perceived as problematic in Spain and Finland, and it could possibly affect the access to internet based services. Banks started to use the internet not only as an innovative payment method and to increase customer convenience, but also as a way to reduce costs and enhance profits. The popularity which virtual banking services have won among customers, owing to the speed, convenience and round-the-clock access they offer, is likely to increase in the future (Perumal, 2008).

Preferences for privacy/security included the ability to withhold information that may be detrimental if disclosed and using payment instruments that minimize the risk of being physically harmed. It should also be noted that privacy preferences must be discussed in the context of relationships between the consumer and other relevant parties. For instance, whether the consumer is being asked to report information relating to a telephone, credit card, or medical bill will fundamentally affect their assessment of the importance of privacy pertaining to a given payment instrument. (Mantel, 2000)

3 .E-BANKING - PROBLEM OF SECURITY

Information security can support a wide variety of objectives Perumal (2008), including:

- Compliance with laws and regulations;
- Reducing the risk of fraud or other falsification of data to an acceptable level
- Reducing the risk of unauthorized access or disclosure to an acceptable level

Electronic commerce procures several benefits to its participants including merchants and consumers, like time savings and convenience. In order to provide these benefits in

business to consumer (B2C) transactions, e-commerce needs effective payment systems. (Hassler, 2001).

Nowadays, online B2C payments are increasing in power in all areas of e-commerce. The enthusiasm caused by the Internet is moderated by the reservations of consumers and companies, due to the chronic insecurity reputation of the Internet. Since the mid- '90s, a plethora of innovative e-payment solutions have emerged. By way of quotation, in November 2001, ePSO (Electronic Payment Systems Observatory) counted nearly 180 systems in Europe in 2002. However, in spite of this diversity of payment solutions, we note that the most of them approached the problems of payments from the exclusive angle of security. It created a virulent debate on the liberalization of the use of “strong” cryptography tools which facilitated regulation changes in this field in many countries. These changes have allowed the emergence of secure Internet payment systems. However, despite its lack of security, payment cards with the Secure Socket Layer (SSL) protocol, which is a communication protocol, but not a payment protocol, always dominate the Internet payment market. (Sahut, 2008).

According to the literature and professional studies, the greatest deterrent for customers paying via the Internet is the possibility of fraud. Study by Forrester (2004) proved that for every \$1000 of Internet business transactions, \$1 is still fraudulent. Therefore, author decided to attribute the highest importance to the set of security factors. Having analyzed the components of security systems, he distinguished nine levels of security: identification, confidentiality, authentication, data integrity, customer solvability, non-repudiation, durability, liquidity/convertibility and anonymity/traceability. This distinction is based on already existing research works (Sahut, 2008) and enriched with three additional factors mentioned by Peffers and Ma (2003). All of the evaluation criteria have been attributed the same relative weight in the composition of the global security score. The only exceptions are the non-repudiation and anonymity/traceability criteria, which are considered a particularly important component of security systems. It is difficult to balance the protection of sellers and the control of personal data use.

A great concern of online customers is the possibility of keeping payment activities private and of preventing third parties from observing and tracking spending habits (Camponovo and Pigneur, 2003). While most of electronic banking has built-in security features such as encryption, prescription of maximum monetary limits and authorizations, the system operators have to be extremely vigilant and provide clear-cut guidelines for operations. On the larger issue of electronically initiated funds transfer, issues like authentication of payments instructions, the responsibility of the customer for secrecy of the security procedure would also need to be addressed. (Perumal, 2008).

4 . EU LEGISLATIVE REGARDING DATA PROTECTION AND PRIVACY

The Council of Europe Convention for the Protection of Individuals with Regard to Automatic Processing of Data, unlike the OECD Guidelines, had to be incorporated into domestic law by member countries with the possibility of having them adapted to the existing laws.²

As early as 1975 the European Parliament passed a resolution demanding a directive on the freedom of individual data processing in order to guarantee maximum protection for European citizens.

Over the last twenty years, unlike US and the problem of the liberal approach to data protection, the European Union has taken the lead in developing legislation on the use of personal data. In 1995 the European Union passed the Directive on Data Protection Legislation (DPL) or Directive 95/46/EC to ensure free flow of data within the EU, which had to be implemented by all member states. The transfer for countries without DPL is not allowed. The main motivation for developing DPL was the socio-economic component of a society's culture.

Before the development of DPL, there had existed no universal guideline regarding data protection. However, among the countries who have DPL there exist large differences in the strictness and level of data protection. On the other hand, the German DPL can be described as one of the strictest in the world where everything is regulated and enforced by federal government. A possible explanation for these varied practices lies in the major differences between national cultures within Europe and worldwide. In the EU DPL, data protection is listed among the «fundamental rights» of citizens. (Walczuch and Steeghs, 2001)

The main interest of the Directive is twofold: to protect the individual and at the same time ensure the free movement of personal data, which means that the level of protection must be harmonized as much as possible across the EU.

The final version of the Directive is largely based on the existing German and French national laws, two of the most restrictive national laws ensuring maximum protection for EU citizens. (Walczuch and Steeghs, 2001)

² Council of Europe, *Convention* No. 108, <http://conventions.coe.int/Treaty/EN/Treaties/HTML/108.htm>

The two main points of the Directive (Directive 95/46/EC) are:³

Data may only be collected for specific, explicit and legitimate purposes; and

Data may only be held if they are relevant, accurate and up to date.

The Directive defines six grounds for legitimate personal data processing:

Consent of the data subject; Contract with the data subject; Legal obligation to collect the data; Vital interests of the data subject; Public interest (public administrator); and Legitimate interest in processing data where it is not overridden by the interest of the data subjects and grants a number of important rights to data subjects, including: Right to access data concerning them; Right to know where the data originated; Right to have inaccurate information rectified; Right of redress in the event of unlawful processing; Right to withhold permission to use their data in certain circumstances; and Right to opt out free of charge from being sent direct marketing material.

The Directive 2002/58/EC is a separate directive which deals with the protection of privacy in the electronic communications sector. This directive includes provisions on the security of networks and services, confidentiality of communications, access to information stored on terminal equipment, processing of traffic and location data, calling line identification, public subscriber directories and unsolicited commercial communications. It states that Member States must guarantee the confidentiality of communication through national regulations. This means that any unauthorized listening, tapping, storage or other kinds of interception or surveillance of communications is illegal. Where calling-line identification is offered, users must have the possibility not to subscribe to this service or not to have their identification revealed when making a telephone call. Conversely, subscribers to this service must have the possibility to reject incoming calls from individuals who have blocked their calling-line identification. Additionally, the directive states that where printed or electronic telecommunication directories exist, individuals are entitled to omission from the list, in principle, at no cost. (Directive 2002/58/EC)⁴ These directives cover all the problems of data protection including the most important area of electronic communications, and applies to all EU member states.

Over 80 percent of US Fortune 500 companies have reported system break-ins, and each occurrence caused an estimated one million dollars in damage. Economic espionage is a contemporary form of tenders, and a modern form of warfare between the competitive companies, which is almost impossible to regulate. Economic espionage today occupies 2 / 3 of all spyware activity.

³ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data.

⁴ Directive 2002/58/EC on data protection and privacy

On the other hand, the free flow of information is an important prerequisite for the business transactions of multinational corporations. In the age of globalization and multinational corporations (MNCs) transborder data flow (TBDF) has become a problem for business transactions in the countries with strict DPL. Most countries in the world today do not have adequate DPL in accordance with the EU Directive.

Here are some major differences between data protection laws worldwide:

The extent of protection: for example, does data collected by private and/or public entities fall under the DPL and what type of data is considered confidential?; The definition of a data file: for example, do only computer files or also manual files fall under the DPL?; The definition of a data subject (exclusively human beings or also legal persons, i.e. companies)?; The level of auditing, monitoring and penalty exercised. According to Article 25 of the Directive, data transfer to third countries shall be allowed only if they have an adequate level of protection. However, this definition is not clear and must be assessed on a case-to-case basis. There are certain exceptions to Article 25 and the Directive allows the transfer of protected data to unsafe third countries where: The data subject has given consent; The transfer is necessary for the performance of a contract between the data subject and data controller; It is necessary for the conclusion of a contract between the data controller and a third party in the interest of the data subject; It is of important public interest; and It is necessary to protect the vital interest of the data subject. (Walczych and Steeghs, 2001)

Some US companies have already implemented the EU directives when dealing with European data. This can rather easily be done on a contractual basis in which a company agrees to adhere to EU directive guidelines. An initiative of the US government and EU involves the «Safe Harbour» principles as a model contract through which non-EU companies can show their compliance with EU directives. (Walczych and Steeghs, 2001)

Because national and international privacy regulations are not uniform, the Safe Harbour principles were developed to improve Internet-based business transactions. Also, the Safe Harbour framework is a collaborative effort between the US Department of Commerce and EU to bridge the difference in their approaches to information security. (Tran and Atkinson, 2002)

However, according to the EU these contracts should be the exception rather than the rule, which may complicate matters especially for non EU-companies with a large stake in the European market. Another approach to the issue was taken by Microsoft, which established a server farm in the EU to ensure operation without any data transfer to the US. The US Department of Commerce maintains a public list of organizations that are protected under Safe Harbor principles and a list of those that are not. Organizations that exhibit unfair and deceptive acts under US federal and state laws are restricted in joining Safe Harbor. If the EU finds that a company violates individual rights to privacy, the company is prohibited

from transferring data in and out of Europe and cannot reach the international market to compete for customers. (Tran and Atkinson, 2002)

On 25 January 2012, the European Commission unveiled a draft legislative package to establish a unified European data protection law. The package includes a draft "General Data Protection Regulation" (the "Regulation") that will be directly applicable in all member states of the European Union replacing the patchwork of different data protection laws currently in force in the different member states. The proposed new EU data protection regime extends the scope of the EU data protection law to all foreign companies processing data of EU residents. It provides for a harmonization of the data protection regulations throughout the EU, thereby making it easier for US companies to comply with these regulations; however, this comes at the cost of a strict data protection compliance regime with severe penalties of up to 2 % of worldwide turnover. (http://mlawgroup.de/news/publications/detail.php?we_objectID=227)

5 . FINANCIAL SECTOR EXPLOATATION OF INFORMATION

In 2012 alone, the Air Force spent about \$4 billion on its cyber programs, and the Labor Department, in response to cyber threats, improved the computer security of its valuable economic data (Barnes, 2012). Financial data are the most interesting data for possible exploitation. Global information market estimated to be worth \$358 billion in 2005 (Outsell, 2006). The public sectors of Europe and North America are the largest generators of commercially valuable information.⁵ Public information is produce which ought to be helpful to the society as a whole but in practice many data transfer companies and other similar companies steal and sell public sector data for commercial purposes. There exists within these bodies a conflict of interest between their commercial activities and public responsibilities. (Saulles, 2007).

General Keith Alexander, the head of the National Security Agency and the U.S. Cyber Command in 2013, called the loss of American business secrets and intellectual property to cyber criminals "the greatest transfer of wealth in history. (Seabrook, 2013).

According to the European Commission and Directive 93/37/EEC⁶, a body governed by public law means any body: established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character; having a legal personality; financed, for the most part, by the State, or regional or local authorities, or other bodies governed by public law, or subject to management supervision by those bodies, or having an administrative, managerial or supervisory board, more than half of

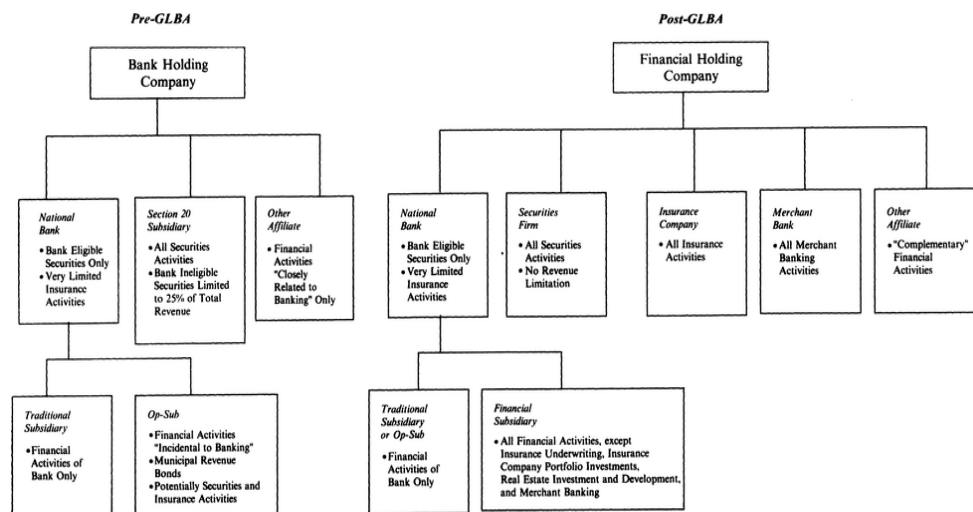
⁶ COUNCIL DIRECTIVE 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts

whose members are appointed by the State, regional or local authorities or by other bodies governed by public law.

While pricing information-based products is often difficult due to low costs of reproduction and distribution, in the case of public sector information it is argued that externality benefits need to be taken into account when setting a policy in this area. At the core of such arguments is the belief that societies, as a whole, benefit most from the widest possible dissemination of the information generated by local and national public bodies. The externality benefits are released at a social level by allowing individuals free access to information they need and at an economic level from private organizations using public information to create information products that can be sold in the marketplace. (Saulles, 2007)

At the European level, policy makers have been debating this issue since the late 1980s and a growing call for legislation to open up the market for such information resulted in the European Directive (2003/98/EC) on the reuse of public sector information.

Figure 1.



Source: Barth, J.R, Jahera S. (2013)

The Gramm-Leach-Bliley Act (GLBA) was enacted in 1999 to improve the level of security for financial institutions and e-commerce. Under the GLBA, business executives are held personally liable for any misuse of «personally identifiable» and «non-public» information which includes credit card numbers, customers list and any personal information identifying a consumer. The GLBA requires the encryption of all stored non-public data and audit of the system that collects and analyses the data.

6. CONCLUSION

Authors conduct research customer's privacy of E-banking transaction in the light of privacy and security and EU legislation. The enthusiasm caused by the Internet is moderated by the reservations of consumers and companies, due to the chronic insecurity reputation of the Internet. Obvious, that is the reason why e-banking is still underdeveloped sector of financial industry. Authors point to the importance of regulators and their role in the problem of data protection in the financial sector under the wing of European Union. The Gramm-Leach-Bliley Act (GLBA) was enacted in 1999 to improve the level of security for financial institutions and e-commerce. Under the GLBA, business executives are held personally liable for any misuse of «personally identifiable» and «non-public» information which includes credit card numbers, customers list and any personal information identifying a consumer. The GLBA requires the encryption of all stored non-public data and audit of the system that collects and analyses the data. Authors point to the importance of regulators and their role in the problem of data protection in the financial sector. Financial data are the most interesting data for possible exploitation. And global regulative bodies should regulate these problems in general.

REFERENCES

- Arnaboldi, F, Claeys, P, (2008), *Financial Innovation in Internet Banking: a comparative analysis*, Available at: [<http://www.bis.org/bcbs/basel3.htm>] (26.11.2010)
- Barnes, J. (2012), *Pentagon Digs in on Cyberwar Front*, WALL ST. J., July 6, 2012, at A4 (stating that “[o]verall the Air Force spends about \$4 billion a year on its cyber programs”).
- Barth, J.R, Jahera S. (2013), *Gramm-Leach-Bliley Act: Creating a New Bank for a New Millenium* in *Encyclopedia of Finance*.
- Bhagwati, J. (1988), *Poverty and Public Policy*, Vikram Sarabhai Lecture. World Development. Vol. 16(5),539-555.
- Burkert, H, (1995), *Public Sector Information: Some Implications for a European Information Infrastructure*, available at: <http://herbert-burkert.net/ARCHIV/1995-09-00-Vienna.pdf> (accessed 28

February 2006).

Camponovo, G., Pigneur, Y. (2003), *Analyzing the m-business landscape*, Annales des Télécommunications.

Caudill, E.M., Murphy, P. E. (2000) *Consumer Online Privacy: Legal and Ethical Issues*, Journal of Public Policy & Marketing: Spring 2000, Vol. 19, No. 1, pp. 7-19.

Council of Europe, (1981), *Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data*, ETS. No. 108, Strasbourg, (1981), available at: <http://conventions.coe.int/Treaty/EN/Treaties/HTML/108.htm>, (accessed 15 March 2009).

DeYoung, R. (2005), *The performance of internet-based business models: evidence from the banking industry*, Journal of Business, vol.78, n.3, pp. 893-947.

Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data

Ellger, R., (1987), *European Data Protection Laws as Non-Tariff Barriers to the Transborder Flow of Information*, in Mestmaecker, E. – J. (Eds), *The Law and Economic of Transborder Telecommunications – A Symposium*, Nomos Verlagsgesellschaft, Baden-Baden.: 121-43

European Communities Commission, Directive 95/46 EC of the European Parliament and of the Council of 24 October 1995 on the *Protection of Individuals with Regards to the Processing of Personal Data and the Free Movement of Such Data*, Office for Official Publications of the European Communities, Luxemburg. (1995), available at: http://ec.europa.eu/justice_home/fsj/privacy/docs/95-46-ce/dir1995-46_part1_en.pdf, (accessed 30 April 2008).

European Communities, (1996), *Data protection: protection of personal data ensured at EU level*, available at: <http://www.cec.lu/en/comm/dg15/smn/data.html>, (accessed 30 April 2008).

European Court of Human Rights, available at: <http://www.echr.coe.int/echr/> (accessed 15. March 2009)

European General Guides, Data Protection in the European Union, available at: <http://ec.europa.eu/youreurope>, (accessed 5 May 2008).

Freeman, R. E. (1984). *Strategic Management: A stakeholder approach*. Boston: Pitman.

Hadi, Z. A., Mc Bride, N., (2000), *The Commercialisation of Public Sector Information within UK Government Departments*, International Journal of Public Sector Management, Vol. 13 No. 7, (2000): 552-70

ITA, Draft: *International Safe Harbor Privacy Principles Issued by the US Dept. of Commerce*, (1999), available at: <http://www.ita.doc.gov/td/ecom/Principles1199.htm>, (accessed 5 May 2008).

Jóri, András, (2009), *Data Protection Law - An Introduction*, available at: <http://www.dataprotection.eu/pmwiki/pmwiki.php?n=Main.Privacy> (accessed March 15, 2009)

Mantel, B., (2000), *Why Don't Consumers Use Electronic Banking Products? Towards a Theory of Obstacles, Incentives, and Opportunities*, FRB of Chicago Working Paper No. EPS-2000-1. Available at SSRN: <http://ssrn.com/ABSTRACT=256736> or <http://dx.doi.org/10.2139/ssrn.256736>

Outsell Inc. (2006), *Information Industry Outlook: FutureFacts 2007*, available at: www.outsellinc.com/subscribe/FutureFactIndustryOutlook2007.htm (accessed 22 October 2006)

Peffer, K., Ma, W., (2003), *An agenda for research about the value of payment system for transactions in Electronic Commerce*, Journal of Information technology Theory and Application, 4:4, p. 1-16

- Perumal, S., A. (2008), *Impact of Cyber Crime on Virtual Banking*. Available at SSRN: <http://ssrn.com/ABSTRACT=1289190> or <http://dx.doi.org/10.2139/ssrn.1289190>
- Sahut, J. (2008), *Internet Payment and Banks*, International Journal of Business, Vol. 13, No. 4. Available at SSRN: <http://ssrn.com/ABSTRACT=1755495>
- Saulles, de M. (2007), *When Public Meets Private: Conflict in Information Policy*, The Journal of Policy, Regulation and Strategy for Telecommunications, Vol 9, no 6: 10-16(7)
- Seabrook, J. (2013), *Network Insecurity*, NEW YORKER, May 20, 2013, at 64 (quoting Gen. Keith Alexander).
- Singh, T., Hill, E. M. (2003), *Consumer Privacy and the Internet in Europe: a View from Germany*, Journal of Consumer Marketing, Vol. 20, no 7. (2003): 634-651.
- Schoeman, F.D. (1984), *Privacy and intimate information*, in Schoeman, F.D. (Ed.), Philosophical Dimensions of Privacy, Cambridge University Press, Cambridge, MA, pp. 403-18.
- Stiglitz, J., Orszag, P., Orszag, J. (2000), *The Role of Government in a Digital Age*, CCIA, Washington DC.
- The Treaty of Prüm and the Principle of Loyalty, 2006, Available at: http://www.libertysecurity.org/imprimer.php?id_article=1186 (accessed March 15 2009)
- Tran, E. Atkinson, M. (2002), *Security of Personal Data Across National Borders*, Information Management & Computer Security 10/5:237 - 241
- Walczuch, R., Steeghs, L. (2001), *Implications of the New EU Directive on Data Protection for Multinational Corporations*, Information Technology & People, (2001), Vol. 14 No 2: 142-162
- Warren A., (2002), *Right to Privacy? The Protection of Personal Data in UK Public Organizations*, New Library World, Vol. 103, No 1182/1183, (2002): 446 – 456
- Weiss, P. (2002), *Borders in Cyberspace: Conflicting Public Sector Information Policies and Their Economic Impacts*, US Department of Commerce, Washington, DC.

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RELATIONSHIP MARKETING STRATEGIES IN FINANCIAL INDUSTRY WITH SPECIAL EMPHASIS ON CASE OF BANK IN CROATIA AS A NEW EU MEMBER STATE

ABSTRACT

Financial industry is going through serious difficulties and time of uncertainty due to the global financial crisis that marked the beginning of the 21st century. The banking industry is becoming more complex due to new financial products and services offered to customers and many of them feel insecure regarding many kind of investments, especially after the global crisis in 2008. All banks globally are looking for new marketing strategies to promote their increasingly complex products and services in unsecure global environment. Customer relationship management (CRM) is nowadays global trend in management in general, as well as in the banking industry. Financial services industry increasingly include communication via e-banking system, which is now widely possible due to the rapid development of technology. Banking has passed a long way from the traditional banking, which guarantees the safety of its customers and their savings accounts, to modern e-banking in which the client is often no longer in a position neither to personally communicate with financial advisors. In many developed countries, bank transactions take place exclusively through virtual and ATMs have replaced stop offices and administrative staff. New technologies, still, however, can not help the fact that the bank's clients feel completely safe in all ways of interactions with the banks. Clients in the financial industry are not only theft on the Internet transactions, but also there is a justified fear of the collapse of their banks. The fear is pretty justified given the fact that the part of banks failed in the last world crisis. The authors explore new marketing strategies of banking industry with special reference to the case of bank vault in Croatia as a new member of EU. The banking industry and the financial industry in general needs to use modern marketing strategies and tools to assist in their feeling of security but also in their faith in longevity of their banks. Clients involved in the banking system will invest their savings only if they believe that their bank (e-bank or classic bank) will not fail in any of the possible following global or regional crisis.

Keywords: Financial industry, customer relationship management, relationship marketing, E-banking,

JEL-Classification: M20, G01, M31

1. INTRODUCTION

The aim of this study is to research new relationship marketing strategies in financial industry in the time of (post) global crisis of 2008 and to present and analyse the case study of the bank in Croatia as a example of intersting relationship approach toward customers. The authors explore new marketing strategies of banking industry with special reference to the case of bank vault in Croatia as a good example of the creative marketing approach in financial industry of Croatia as a new member of EU.

Financial industry nowday is going through serious difficulties and time of uncertainty due to the global financial crisis that marked the beginning of the 21st century. The banking industry also became more complex due to new financial products and services offered to customers. Third problem have been seen in security and privacy issue of developing e-banking industry. Financial services industry increasingly include communication via e-banking system, which is now widely possible due to the rapid development of technology. Banking has passed a long way from the traditional banking, which guarantees the safety of its customers and their savings accounts, to modern e-banking in which the client is often no longer in a position neither to personally communicate with financial personal. In many developed countries, bank transactions take place exclusively through virtual channels and ATMs have replaced stop offices and administrative staff. New technologies, still, however, can not help the fact that the bank's clients feel completely safe in all ways of interactions with the banks.

Banking industry globally are looking for new relationship marketing strategies to promote their increasingly complex products and services in unsecure global environment. Customer relationship management (CRM) is nowadays global trend in management in general, as well as in the banking industry.

Clients in the financial industry are not only theft on the net transactions, but also there is a justified fear of the collapse of their banks. The fear is pretty justified given the fact that the part of banks failed in the last world crisis.

The banking industry and the financial industry in general needs to use modern marketing strategies and tools to assist in their feeling of security but also in their faith in longevity of

their banks. Clients involved in the banking system will invest their savings only if they believe that their bank (e-bank or classic bank) will not fail in any of the possible following global or regional crisis.

The following chapters are structured thusly: In chapter 2 challenges to the financial industry is given, in chapter 3 is presented customer relationship management, in chapter 4 is given case study of the time bank vault in Croatia and the implication are revisited in the conclusion.

2. CHALLENGES TO THE FINANCIAL INDUSTRY

2.1. 1st challenge due to global financial crisis

Global financial crisis was the result of a combination of several factors (Sakbani 2008): an extraordinary boom in the housing market, especially in the United States, which had a large number of mortgages at attractive rates; historically low interest rates by the Central Bank; financial innovations in the context of rampant deregulation; and the virtual disappearance of inflationary fears among Central Banks. Banks and other financial institutions grew accustomed to operating under less and less regulation and increasing global liberalization, despite the risk that eventually led to the financial crisis. Stiglitz (cited in Mesarić 2002) predicted a new economic order based on a gradualistic model, which presumed gradual and careful interventions into transitioning and developing countries with respect of their individual specificities. World organizations such as the IMF and World Bank should change their goals from the current one of meeting the interests of the world's financial potentates to one in which better attention is paid to all segments of society, and particularly the most vulnerable. In short, —yes to a liberal market, but with some state control and not at any cost.

The discussion on the need for stricter regulations stems from basic economic theories which, on the one hand, advocate a free market with little state involvement and on the other hand, warn about the need to have a certain level of state surveillance, which also includes a stricter regulation of the financial system. The discussion became heated during the 2007/2008 world financial crisis, which many believe would not have happened if there had been adequate banking regulations.

When depositors know that they are insured against risk, a moral hazard occurs and the disciplinary effect for the market and banks is lost. Therefore, banks that are insured by the state often expose themselves to greater risks than they would otherwise. There is also

negative selection: people most likely to create a negative effect (collapse of banks) are at the same time people who wish to use the insurance opportunity. This opens the way to numerous embezzlers who see the banking industry as a good medium for embezzlement and making a lot of money.

Horwitz (1992) drew attention to 'moral-hazard' problem. He argued that a loss of capital led these institutions to increase their asset risks (the opposite of prudent banking practice) because their low capital levels imply little risk for further losses and significant upside gains for bank stockholders.

The period from 1988 to 1993 witnessed unprecedented international actions to limit the safety net protection of banks.

The Basel international bank capital standards were the first steps followed by FIRREA (Financial Institutions Reform, Recovery and Enforcement Act) in 1989 and FDICIA (Federal Deposit Insurance Corporation Improvement Act) in 1991. The Bank of International Settlements (BIS) in Basel, Switzerland, under the auspices of the banking officials of developed countries, introduced the Basel Agreement (Basel I) in 1988, Basel II in 2003 and Basel III in 2010. Nowadays, The EU relies on Basel III to strongly regulate the financial industry. The Basel Committee on Banking Supervision (BCBS) added a great deal to understanding the work and prudential management of banks and rules for their regulation. It proposed norms for estimating risks and measuring capital adequacy in the new global environment. It also covered norms for best practices for banks and international markets. The committee members come from Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States. Countries are represented by their central bank and also by the authority with formal responsibility for the prudential supervision of the banking business in cases where this is not the central bank. Basel I was a round of deliberations by central bankers from around the world, and in 1988, the Basel Committee (BCBS) in Basel, Switzerland, published a set of minimal capital requirements for banks. This is also known as the 1988 Basel Accord, and was enforced by law in the Group of Ten (G-10) countries in 1992, with Japanese banks permitted an extended transition period. Basel II was the second of the Basel Accords, which are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. The purpose of Basel II, which was initially published in June 2004, was to create an international standard that banking regulators can use when creating regulations about how much capital banks need to put aside to guard against the types of financial and operational risks banks face. Advocates of Basel II believe that such an international standard can help protect the international financial system from the types of problems that might arise should a major bank or a series of banks collapse. In practice, Basel II attempts to accomplish this by setting up rigorous risk and capital management requirements designed to ensure that a bank holds capital reserves appropriate to the risk the bank exposes itself to through its lending and investment practices. Generally speaking, these rules mean that the greater risk to which the bank is exposed, the greater the amount of capital the bank needs to hold to safeguard its solvency and overall economic stability. Sakbany (2008) pointed out that the

BIS forum has been quite active over the last ten years, while the IMF and other international financial and monetary institutions have been notable for their passive presence. In a global economy with global financial markets, an international authority is essential for dealing with global problems. In 2010, Basel III improved the banking sector's ability to absorb shocks arising from financial and economic stress, improve risk management and governance and strengthen banks transparency and disclosures. Basel III is part of the committee's continuous efforts to enhance the banking regulatory framework and it builds on the International Convergence of Capital Measurement and Capital Standards document (Basel II).

Further the 2007–2009 financial crisis revealed problems of the accord; didn't require enough capital to weather the financial crisis; relied on credit ratings for weights—which proved unreliable during the crisis; procyclical credit standards restrict credit exactly when it is needed and finally; doesn't address liquidity problems (Mishkin and Eakins, 2013). US regulators introduced the Dodd-Frank in July 2010. This is the most comprehensive financial reform legislation recently and addresses five different categories of regulation. For example, Volcker Rule Banks limited in the extent of their trading with their own money, and allowed to own only a small percentage of hedge and private equity funds. As Mishkin and Eakins (2013) and others claim, the Dodd-Frank bill does not address all areas of concern and problems in the current regulatory environment. Some areas for future consideration include: capital requirements regulation and supervision of financial institutions to ensure that they have enough capital to cope with the amount of risk they take are likely to be strengthened; compensation pay in the financial services industry needs to consider the long-term effects of the compensation scheme.

For example, requirements that bonuses be paid out for a number of years after they have been earned and only if the firm has remained in good health are being examined. Such “claw backs” may encourage employees to reduce the riskiness of their activities; Credit Rating Agencies regulation to restrict conflicts of interest and to give incentives to provide reliable ratings have already been strengthened in the aftermath of the 2007–2009 financial crisis, but even more is likely to be done.; More regulation is needed to prevent a crisis from ever occurring again, there is a substantial danger that too much or poorly designed regulation could hamper the efficiency of the financial system. If new regulations choke off financial innovation that can benefit both households and businesses, economic growth in the future will suffer.

2.2. 2nd challenge due to new financial products and services + new technologies (I-banking)

Nowdays, commercial banks, investment banks, hedge funds, sovereign funds, mutual funds, and other financial participants are all involved, intermediated, and interconnected like have never before, operating in a single financial network with numerous intertwined products and transactions (Brunnermeier, 2009).

Clients do not have enough knowledge about the many different financial products and services in the global market, and therefore do not have full confidence in the new forms of financial services that are now often carried out through modern E-banks (or I-banks) and other financial institutions.

Internet banking has attracted increasing attention since the 1990s. Partly fostered by technological advance, banks started to use the internet as an innovative payment method and as a way to reduce costs, enhance profits and increase customer convenience. Online banks have been promoted basically by financial groups, run by both banks and insurance companies. The enthusiasm caused by the Internet is moderated by the reservations of consumers and companies, due to the chronic insecurity reputation of the Internet.(Sahut, 2005).

Nearly half of US banks were using transactional Websites at the beginning of 2002. However, only a few of them have adopted a pure online business model, gaining rather diverse results. Some exited the market via liquidation or acquisition; others developed a mixed model and opened physical branches. Only a few pure online banks were able to achieve profits and survive. Personnel expenses are comparatively low, but the costs for IT disproportionably high. (Arnaboldi and Claeys, 2008).

Jayawardhena and Foley (2000) explore the internet as a new delivery channel arguing that internet Websites may help to overcome the inherent disadvantages of a traditional branch. Clients oriented to cheap and quick deposits account would prefer internet banks. (Arnaboldi and Claeys, 2008). Nowadays, it cannot be claimed that virtual banks are the primary form for bank industry. We still need physical bank branches because the clients do not fully believe to security and/or privacy of their investments in E-banks. Empirical evidence shows that long-term savings products are purchased more often face-to-face and technology glitches are still present. There is a particular problem of regulating international banking and can readily shift business from one country to another and requires coordination of regulators in different countries which is a pretty difficult task (Mishkin and Eakins 2013).

3. CUSTOMER RELATIONSHIP MANAGEMENT IN THE BANKING INDUSTRY

After we consider environment of modern banking industry it is time to make the point. Customer relationship management in the banking industry became very important in the relationship toward customers. Payne and Frow (2005) defined that customer relationship management (CRM) is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders. Sin et al. (2005) have a similar definition to Parvatiyar and Sheth (2001) about CRM.

They defined CRM as a comprehensive strategy and process that enables an organization to identify, acquire, return and nurture profitable customers by building and maintaining long-term relationships with them.

In today's banking environment, it is becoming difficult to build and maintain strong and lasting relationships with customers (Sharma et al. 2014)

Since CRM has begun questioning the various assumed links in the relationship process, managers should be sensitive to the impact of bank and formation, maintenance, continuance of relationship with the individuals and the firms. This is particularly important for banking institutions as their strategy needs to be adopted cooperative principles, i.e.; they may have local strategies instead of standardised global strategies. (Ramu, 2014). Menon et al. (2007), argue that retail banks need to focus more strongly on components of their Customer Relationship Management (CRM) strategy that will generate customer affective commitment and lead to an increase in customer retention, share of wallet, and advocacy. It is suggested that affective commitment is generated during 'moments of truth' or episodes of interpersonal interaction between customers and bankers. In the CRM it is called affective commitment that implies a customer – marketer relationship driven by perceptions of reciprocity and trust. It indicates close identification between the customer and the marketer in terms of shared values and rapport, and may lead to an emotional attachment between the customer and the marketer (Fullerton, 2003). On the other hand there is behavioural commitment, also called calculative or continuance commitment, refers to a customer – marketer relationship that is driven by customer perceptions of high switching costs (financial or contractual), customer inertia, or the lack of market alternatives. In other words, behavioural commitment occurs when customers are willing to continue with a marketer because it may be too inconvenient or difficult to switch. (Fullerton, 2003, Mennon and O'Connor 2007).

4. CASE STUDY – TIME VAULT

We present case study of customer relationship management (CRM) through the Time Vault of Zagrebačka banka which was presented in 2014 as a part of promotion of this bank and its 100 year of existing. Zagrebačka banka is a member of the UniCredit Italiano Group since March 2002, one of the most successful banking groups in Europe, Zagrebačka banka has also been one of the leading banks in CEE. In Croatia, the Bank operates with more than 60.000 corporate customers and over 1.1 million private customers, which means that every fourth citizen is a customer of Zagrebačka banka. As The Bank accounts for 26% of total assets of the Croatian banking sector and, as a co-owner of the UniCredit Bank Mostar, 17% of the total assets of the banking sector in Bosnia and Herzegovina. The main branches of Zagrebačka banka are: ZB Invest, the Zagrebačka banka investment fund company that holds 31% of market share. AZ Fund, an obligatory pension fund of Zagrebačka banka and Allianz, holds around 40% of the market share, and the deposits of the First Housing and Savings Bank (Prva stambena štedionica) holds around 31% of the housing savings on the market.

Table 1. Zagrebačka banka

HRK m i %	Total assets	Market share	Core capital	Capital adequacy	Pre-tax profit	Market share in profit
Zagrebačka banka	107.049	26,39%	14.462	23,09%	576	54,5%
Banking sector	405.679	100,0%	51.195	20,87%	1.057	100,0%

(Source: Banking sector: CNB, preliminary unaudited data for commercial banks, 31.12.2013, http://www.zaba.hr/home/wps/wcm/connect/zaba_en/zabapublic/about_the_bank)

With 129 subsidiaries in total, and more then 862 ATMs, Zagrebačka banka has the largest network of physical channels for customer business. Almost 530 thousand customers use online banking of Zagrebačka banka through direct channels and 230 thousand customers use mobile banking. More than once, the Bank has been nominated to have the most innovative and top-quality banking Internet service. Zagrebačka banka also issues the biggest number of payment cards and has the widest network of in-store POS devices for card payments. With over 4,300 employees, Zagrebačka banka is one of the major employers in Croatia. Citizens associate the following qualities with Zagrebačka banka: safety, greatness, progress, but also tradition.

(http://www.zaba.hr/home/wps/wcm/connect/zaba_en/zabapublic/about_the_bank, 2014).

In april 2014. Zagrebačka banka opened Time Capsule/Vault to all citizens of Croatia celebrating 100 year of business. Every citizen of Croatia could save their memories, objects, pictures or messages and this bank will save all of them for the next 100 years in the future. 30th of September 2014, Time Capsule/Vault will be closed and all of them will get special certificate of the receipt of items. On the occasion of celebrating 100 years of business Zagreb bank today for all citizens (regardless of whether it operates with the Zagreb Bank) opens the Time Vault, or a time capsule - a place that no charge can save your memories, objects, pictures or messages for which they want to be. The bank keeps the next 100 years. After 30 September 2014, closed the door of the Time Treasury, Zagrebačka banka will address citizens who have submitted a package to send special certificate of receipt of the items for safekeeping.

The time capsule will be opened in 100 years - the 2114th year - when all items again become available to the public, and kept the package will be submitted to the heirs, or the person who brings the insight certificate.

The real, phical Time Vault will be formed in the central building of Zagrebačka banka on the main Square of Zagreb, capital of Croatia where is located Gradska štedionica, forerunner of Zagrebačka banka, grounded in March 1914. (www.vremenskitrezor.hr, 2014). Project of Time Vault was the part of the media promotion through the Tv/radio/Internet and newspaper advertising in Croatia from March 2014.

What is the message of the project Time Vault by Zagrebačka banka?

1.st – that Zagrebačka banka will be here for 100 years.

2.nd – that Zagrebačka banka is highly safe and nice to all of us that we can give them peacefully our most precious intimate things, memories and important messages for the future.

As authors of this paper, we think that Zagrebačka banka with this project is just try to prevent general distrust in banks in Croatia because lot's of clients do not have especially good opinion about the banks in general, especially after the global crisis and in the transition process specific for Southeastern Countries of Europe. Lot's of citizens in Croatia have lost their jobs and regular incomes in the crisis of 2008. They become undesirable in banking industry because of the non performing loans especially if they were in swiss Francs. In 2014, Croatia is in European Union for a year and it is time of rebuilding of longliving relationship between banking industry and their clients. Project of Zagrebačka banka named Time Vault build relationships as a local strategy of CRM specific for Croatian market in this time. In the CRM it is called affective commitment that implies a customer – marketer relationship driven by perceptions of reciprocity and trust. (Fullerton, 2003).

5. CONCLUSION

Banking industry globally and in Croatia as a new EU member state is going through serious difficulties and time of uncertainty due to the global financial crisis and new financial products and services. Papers analyze customer relationship management (CRM) as a global trend in management in general, as well as in the banking industry. Financial services industry increasingly includes communication via e-banking system, which is now widely possible due to the rapid development of technology. Authors find that clients in the financial industry are not only theft on the Internet transactions, but also there is a justified fear of the collapse of their banks. The fear is pretty justified given the fact that the part of banks failed in the last world crisis. The authors explore new marketing strategies of banking industry with special reference to the case of Bank Vault in Croatia as a new member of EU. The project of Zagrebačka banka is good example of CRM local project that is based on affective commitment between the bank and the customers in specific and challenging time.

REFERENCES

- Arnaboldi, F, Claeys, P, (2008), *Financial Innovation in Internet Banking: a comparative analysis*, Available at: [<http://www.bis.org/bcbs/basel3.htm>] (26.11.2010)
- Brunnermeier, M,K, (2009), *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J. ECON. PERSPS. 77, 96
- Fullerton, G, (2003), *When does commitment lead to loyalty?*, Journal of Service Research , Vol. 5, No. 4, pp. 333 – 344 .
- Jayawardhena C, Foley P. (2000), *Changes in the banking sector-the case of internet banking in the UK*, Internet Research: Electronic Networking Applications and Policy, vol.10, n.1, pp. 19-30.
- Menon, K, O'Connor, (2007), *A Building Customers' Affective Commitment Towards Retail Banks: The Role of Crm in Each 'Moment of Truth'* (February 14, 2007). Journal of Financial Services Marketing, Vol. 12, No. 2, p. 157, Available at SSRN: <http://ssrn.com/ABSTRACT=1373860>
- Mesarić, M, (2002), *Nobel laureate Joseph Stiglitz the Critique of „Market Fundamentalism—of the Globalization and Policy of the International Monetary Fund*. Ekonomski pregled, Zagreb 53(11-12), 1152-1182
- Mishkin, F. S, Eakins, S, (2013), *Financial Markets and Institutions* (7th Edition) (The Prentice Hall Series in Finance).
- Payne, A and Frow, P (2005), *A Strategic framework for Customer Relationship Management*, Journal of Marketing. Vol 69, pp-167-176.

Ramu, N, (2014), *A Study of the Impact of Customer Relationship Management in TNSC Bank*, Chennai. Journal of Finance and Bank Management, March, 2014, Vol. 2, No. 1 pp. 72-88. Available at SSRN: <http://ssrn.com/ABSTRACT=2450687>

Sahut, J, (2008), *Internet Payment and Banks*, International Journal of Business, Vol. 13, No. 4. Available at SSRN: <http://ssrn.com/ABSTRACT=1755495>

Sakbani, (2010), *The global recession: Analysis, evaluation, and implications of the policy response and some reform proposals*, Studies in Economics and Finance, Vol. 27 Iss: 2, pp. 91 – 109

Sharma, S, Vinod, K, Naman, J. (2014), *A Study on Customer Perception Towards Service Quality and Delivery with Reference to E-Banking* (February 1, 2014). Available at SSRN: <http://ssrn.com/ABSTRACT=2392234> or <http://dx.doi.org/10.2139/ssrn.2392234>

Sin, Ym, Tse, CB, Yim JK, (2005), *CRM conceptualization and scale development*, European Journal of marketing. Vol 39.no.11/12,pp-1264-1290.

www.zaba.hr/home/wps/wcm/connect/zaba_en/zabapublic/about_the_bank (14.09.2014)

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PUBLIC PROCUREMENT AND DEVELOPMENT OF EU INTERNAL MARKET

ABSTRACT

In order to create a common European space, EU in the past 60 years, gone from a common and single market over to Internal Market. The basic objective of growing and deepening of the market was ensuring free and transparent operations and the removal of all obstacles to the free movement of goods, services, capital and people. In order to achieve the set goal, the EU has adopted a number of contracts and legal documents, among which the most important are Rome Treaties, Single European Act, Maastricht Treaty, by which began the process of formation of the Internal market and the Lisbon Treaty.

Public procurement are becoming increasingly a subject of interest of international organizations, regional development banks and UN agencies, which wants to define a transparent framework for promoting public procurement procedures, in order to achieve economic growth and increase the efficiency of public administration. With introduction of electronic procurement system, EU wants to ensure cost reduction and create an organized information platform for contracting authorities and bidders from all member countries.

The effects of public procurement as a significant part of the EU's GDP on the functioning of EU Internal Market in this paper are viewed in terms of reducing corruption and increasing transparency, enhancing innovation and impact on clients and other business entities. The presence of corruption is most common in public administration and public procurement, which leads to an increase of operating costs and decrease of economy competitiveness. With measures in field of public procurement, EU aims to ensure a fair and transparent framework of public procurement based on market competition rules, which will ensure continued growth and development of EU Internal Market.

Introduction of new electronic procurement system affects clients and other business entities involved in public procurement procedures, and reflects in the reduction of

administrative costs and maximizing the opportunities that can be achieved from limited resources. Also, the electronic public procurement system increases efficiency in public resources consumption and resulting in overcoming costs associated with distance clients and suppliers.

Stimulation of research and innovation through public procurement procedures improves the quality of public services in markets where the public sector is an important purchaser. However, further introduction of innovative processes in the public procurement process requires a thorough administrative changes at all levels of public authorities.

Key words: public procurement, EU, internal market, development

JEL classification: H57

1. INTRODUCTION

Implementation process of EU began in 1952, with the ultimate goal of creating an internal European market in which business should be carried out without any restrictions ensuring free movement of goods, services, capital and workers. Public works, supply and services for departments of central, regional and local authorities and public enterprises and organizations are accounted for about 15% of total economic activities of EU member countries. Internal European market requires opening of public sector to European competition.

Public procurement have always been subject of specific discussion and many countries have avoided legislation and implemented business activities in a non-transparent manner. That situation hampered realization and normal functioning of EU Internal market. The main purpose of this paper is to identify main characteristics of EU public procurement and to analyze their importance for successful and transparent functioning of Internal Market.

2. CHARACTERISTICS OF PUBLIC PROCUREMENT IN THE EU

Public procurement play an important role in the national economies of the EU member states. It is estimated that activities related to public procurement occupy about 16% of EU GDP. Public procurement are largely related to public works, energy, transport materials and equipment, aeronautics, telecommunications, etc.. Public procurement services intended for central, regional and local authorities as well as companies and public

organizations are accounted for about 15% of total economic activity of EU Member States. (Kandžija, 2003)

Principles of Internal Market for Public Procurement enable better allocation of economic resources and rational spending of public funds, and preference of best performers at EU level affects positively on competition, transparency, equality and reducing of corruption. (Kandžija and Cvečić, 2008)

Subjects of public procurement in EU are contracting authorities and bidders. Bidder is an economic entity that submits an offer, while the contracting authority is state, regional or local authorities, bodies governed by public law, or associations formed by one or more of such authorities or bodies of public law.

Candidates or tenderers who, under the law of Member State where they are established, are entitled to provide the relevant service, shall not be rejected solely on the basis that, under the law of Member State in which the contract is awarded must be either natural or legal persons.

However, in the case of public service contracts and public works contracts as well as public procurement contracts in addition covering services and/or siting installations, legal entities may be required to tender or request to specify names and relevant professional qualifications of staff which will be responsible for performance of the contract.

Groups of economic entities may submit tenders or put themselves forward as candidates. Contracting entities may not require these groups to assume a specific legal form in order to be able to reject a tender or request for participation. This can only be required for selected group to which contract is awarded in extent that this change is necessary for the successful execution of contract. (Directive 2004/18/EC, Article 4)

Any candidate or tenderer who has been convicted on the basis of a final judgment of which contracting authority have knowledge, shall be excluded from participation in a public procurement contract. Some of reasons for exclusion are also participation in a criminal organization, corruption, financial fraud and money laundering. (Directive 2004/18/EC, Article 45)

Also, any economic entity may be excluded from participation in the contract if it is: bankrupt or in liquidation; his business is administered by the court; in arrangement with creditors; has suspended his business activities; subject of procedure for a declaration of bankruptcy; has been guilty for grave professional misconduct; has not fulfilled obligations relating to the payment of social security contributions in accordance with the legal provisions of the country in which it is established or those in force in the country of contracting authority; has not fulfilled tax obligation; guilty for misrepresentation in submitting of required informations or has not submitted informations. (Directive 2004/18/EC, Article 45)

Objects of public procurement are goods, services and works. In case of public procurement of goods, shall be concluded such public procurement contracts whose object is purchase, taking into rent, lease, credit purchase (with or without an option to purchase) of products. Contract whose subject is delivery of products and which, as a secondary thing includes siting and installation activities, are also regarded as public procurement contracts. (Directive 2004/18/EC, Article 1)

Public works contracts are contracts whose subject is execution of works or projecting or realization of a work corresponding with requirements specified by the contracting authority. The term business indicates the outcome of building or civil engineering works taken as a whole, which is the sufficient of itself to fulfill an economic or technical function. Public service contracts are those contracts which are not work or goods contracts, and which object is providing of services. A public procurement contract having as its object both products and services is considered as public service contract if value of the services exceeds the value of products covered by the contract. A public procurement contract which object are services and which includes works that are only secondary thing to principal object of contract, is considered as public service contract. (Directive 2004/18/EC, Article 1)

Value of public procurement contracts vary depending on whether it is a public works, services or procurement. Highest threshold value belongs to public works contracts (5 million euros). (Table 1)

Table 3: Valid public contracts thresholds in the EU

Type of contract	Threshold in euros (VAT excluded)
Public works	5 000 000
Public services	200 000
Public procurement	200 000
Procurement in water, energy and transport sector	400 000
Contracts that fall under the GATT agreements	130 000

Source: www.simap.europa.eu, 2014

Public works contracts are, on value basis, followed by service contracts and public procurement contracts with a threshold of 200 thousand euros. Regarding procurement in certain sectors, threshold value of procurement in the water, energy and transportation is amounted to 400 thousand euros.

Information system for public procurement in the EU (SIMAP) was established with aim to ensure control of common law and to achieve a higher level of transparency.

In the implementation of EU public procurement are also participate (www.ec.europa.eu, 2010):

1. TED - a multi-lingual database of public procurement contracts published in the amendments of EU official gazette (Series)
2. Common vocabulary for public procurement (CPV) - assists Member States in the transposition of EU directives concerning processing of calls for proposals in the Official Journal of the EU with the help of a single classification system in describing object of public contracts
3. Advisory Committee for opening of public procurement markets, which controls implementation of EU directives, take care of their equal application in the Member States and examines complaints of business entities.
4. Observatory for Public Procurement – controls liberalization of EU and effects in third countries.

Principles of Internal Market for Public Procurement enable better allocation of economic resources and rational spending of public funds, and preference of best performers at EU level affects positively on competition, transparency, equality and reducing of corruption. Subject of public procurement are bidders and contracting authorities and its objects are goods, services and public works. In accordance with this division, there are public work contracts, public goods contracts and Public service contracts.

3. BALANCE OF PUBLIC PROCUREMENT IN THE EU

Value of public procurement contracts published in TED has grown steadily until 2010, when it was amounted to 447 billion euros. In the year 2011 decrease was recorded and total contract value was amounted to 425 billion euros. (Table 1)

Table 2: Value of public procurement published on TED in period 2007-2011 (billion of euros)

Country	2007	2008	2009	2010	2011
Belgium	10,45	12,35	13,53	10,96	10,93
Bulgaria	2,56	2,96	4,14	2,3	2,83
Czech Republic	5,21	7,9	7,11	8,07	9,52
Denmark	7,31	6,92	8,83	10,28	11,75
Germany	27,07	29,65	34,14	32,85	33,79
Estonia	1,13	1,32	1,15	1,51	2,62
Ireland	6,37	4,48	3,52	3,65	3,49
Greece	7,98	6,64	8,7	5,47	4,68
Spain	42,97	39,28	35,45	34,06	25,08
France	63,96	71,86	73,11	66,71	80,66
Italy	35,5	36,32	38,67	53,12	45,91
<i>Cyprus</i>	<i>0,81</i>	<i>0,81</i>	<i>1,41</i>	<i>0,9</i>	<i>0,91</i>
Latvia	2,61	2,21	1,59	2,06	3,55
<i>Lithuania</i>	<i>1,2</i>	<i>1,17</i>	<i>1,29</i>	<i>1,33</i>	<i>1,71</i>
<i>Luxembourg</i>	<i>0,45</i>	<i>0,51</i>	<i>0,57</i>	<i>0,61</i>	<i>0,56</i>
Hungary	4,57	5,45	5,86	5,52	5,13
Malta	0,11	0,07	0,4	0,26	0,29
Netherlands	10,19	11,13	11,6	10,92	9,74
Austria	4,55	6,86	6,4	6,59	5,53

Poland	18,13	25,95	25,54	30,9	28,57
Portugal	2,9	4,33	5,75	7,08	3,67
Romania	9,12	10,29	7,56	7,6	10,37
Slovenia	2,26	1,9	2,12	1,63	1,94
Slovakia	1,97	2,41	4,31	7,62	3,98
Finland	6,39	7,3	8,36	8,25	8,14
Sweden	10,24	11,82	12,43	16,88	15,41
United Kingdom	81,19	80,55	96,89	109,88	94,69
Total	367,2	392,42	420,44	447,03	425,44

Source: www.ec.europa.eu, 2013

Analyzing by each country, greatest value of public procurement contracts were made in Germany, Spain, France, Poland, Italy and the United Kingdom. On the other hand, lowest value of public procurement contracts published on TED were made in Cyprus, Luxembourg, Malta, Slovenia and Lithuania.

Number of public procurement contracts published in TED constantly increased in the period 2007 - 2011 when it reached 168 160 published contract. (Table 3)

Table 3: Number of public procurement contracts published on TED in periodo 2007-2011

Country	2007	2008	2009	2010	2011
Belgium	3553	4450	4371	4557	5477
Bulgaria	953	1777	1323	1397	1821
Czech Republic	2449	2419	2687	2961	3769
Denmark	1707	1979	1873	2169	2619
Germany	16196	17377	20694	21836	22370
<i>Estonia</i>	<i>382</i>	<i>514</i>	<i>417</i>	<i>636</i>	<i>816</i>
Ireland	1801	1572	1292	1296	1356
Greece	3485	2970	2662	3494	2354
Spain	9909	10843	11469	10539	8811
France	41987	42548	43180	45315	45916
Italy	9400	9716	9410	9699	9544
<i>Cyprus</i>	<i>386</i>	<i>446</i>	<i>496</i>	<i>473</i>	<i>458</i>
Latvia	1068	1023	694	790	986
Lithuania	1675	1637	1340	1809	2413
<i>Luxembourg</i>	<i>336</i>	<i>369</i>	<i>390</i>	<i>399</i>	<i>367</i>
Hungary	1904	2354	2777	2741	2640
<i>Malta</i>	<i>187</i>	<i>106</i>	<i>311</i>	<i>166</i>	<i>230</i>
Netherlands	3743	3972	4340	4032	3949
Austria	2971	3188	3089	2941	3042

Poland	11081	13362	14161	18507	21209
Portugal	1246	1445	1539	1798	1623
Romania	5650	5480	3859	3676	4001
Slovenia	1161	1240	1310	1280	1485
Slovakia	505	619	813	781	1164
Finland	2198	2746	2963	3193	3252
Sweden	3909	3936	4185	4948	5479
United Kingdom	12849	13360	13182	11625	11009
Total	142691	151448	154827	163058	168160

Source: www.ec.europa.eu, 2013

Analyzing by countries, agreements have largely covered Germany, France, Poland and the United Kingdom. On the other hand, the smallest number of contracts was related to Estonia, Cyprus, Latvia, Luxembourg and Malta.

Activities of public procurement contracts published on TED in the period 2007 - 2011 realized 3% (2007) to 3.4% of total EU GDP. (Table 4)

Table 4: Public procurement contracts published on TED and GDP of EU member states in period 2007-2011 (%)

Country	2007	2008	2009	2010	2011
Belgium	3,1	3,6	4	3,1	3
Bulgaria	8	8,4	11,9	6,4	7,4
Czech Republic	3,9	5,1	5	5,4	6,1
Denmark	3,2	2,9	3,9	4,3	4,9
<i>Germany</i>	<i>1,1</i>	<i>1,2</i>	<i>1,4</i>	<i>1,3</i>	<i>1,3</i>
Estonia	7	8,1	8,4	10,5	16,4
Ireland	3,4	2,5	2,2	2,3	2,2
Greece	3,6	2,8	3,8	2,5	2,2
Spain	4,1	3,6	3,4	3,2	2,4
France	3,4	3,7	3,9	3,4	4
Italy	2,3	2,3	2,5	3,4	2,9
Cyprus	5,1	4,7	8,4	5,2	5,1
Latvia	12,4	9,7	8,6	11,4	17,6
Lithuania	4,2	3,6	4,8	4,8	5,6
<i>Luxembourg</i>	<i>1,2</i>	<i>1,4</i>	<i>1,6</i>	<i>1,5</i>	<i>1,3</i>
Hungary	4,6	5,2	6,4	5,7	5,1
Malta	2	1,2	6,8	4,2	4,5
<i>Netherlands</i>	<i>1,8</i>	<i>1,9</i>	<i>2</i>	<i>1,9</i>	<i>1,6</i>
Austria	1,7	2,4	2,3	2,3	1,8

Poland	5,8	7,1	8,2	8,7	7,7
Portugal	1,7	2,5	3,4	4,1	2,1
Romania	7,3	7,4	6,4	6,1	7,6
Slovenia	6,5	5,1	6	4,6	5,4
Slovakia	3,6	3,7	6,9	11,6	5,8
Finland	3,6	3,9	4,9	4,6	4,3
Sweden	3,6	3,5	4,2	4,8	4
United Kingdom	3,9	4,5	6,2	6,4	5,4
Total	3	3,1	3,6	3,6	3,4

Source: www.ec.europa.eu, 2013

In the observed period, public procurement had the greatest impact on the GDP in Estonia and Latvia, on the other hand, the lowest impact on the GDP was realized in Germany, Netherlands and Luxembourg.

Expenditure of EU countries for goods, services and works were amounted to 17.6% of GDP (2007) and 19% of GDP in 2011. (Table 5)

Table 5: Expenditure for goods, works and services in EU member states in period 2007-2011 (% of GDP)

Country	2007	2008	2009	2010	2011
Belgium	14,8	15,4	16,6	16,3	16,4
Bulgaria	16,1	19,8	18,6	18	16,8
Czech Republic	22,9	24,3	25,6	24,8	23,5
Denmark	15,2	15,7	17,6	17,4	17,1
Germany	16,9	17,6	19,6	19,4	19,1
Estonia	17,4	18,8	20,9	19,6	18,8
Ireland	14,7	16,5	16,3	16,1	14,6
Greece	12,1	12,2	12,7	10,7	8,8
Spain	16,1	16	17,4	16,9	15,5
France	17,4	17,6	18,9	19	18,5
Italy	14,6	14,9	16,5	16,2	15,9
Cyprus	9,3	9,5	11,2	11	10,3
Latvia	20	16,1	20,2	20,5	20,1
Lithuania	16,3	16,2	16,7	17,8	16
Luxembourg	13,2	14,5	16,1	15,7	15
Hungary	20,7	20,3	23,1	23,2	22,1
Malta	14,1	13,5	13,8	13,4	14
Netherlands	26,5	27,3	30,3	30,2	29,5
Austria	19,5	21	22,6	22,9	21,9

Poland	18,1	18,4	20,3	20,6	19,9
Portugal	18	18	26,2	21,3	19,7
Romania	23,7	24,1	17,3	26,1	24,6
Slovenia	15,2	16	24,1	17,7	16,9
Slovakia	23,6	21,9	19,8	23,6	22
Finland	16,4	17,5	24,1	19,6	19,2
Sweden	17,6	18,4	20,3	19,5	19
United Kingdom	19,5	20,8	24	22,8	21,6
Total	17,6	18,1	20	19,7	19

Source: www.ec.europa.eu, 2013

In the observed period, Czech Republic, Latvia, Hungary, Netherlands and United Kingdom have made greatest expenditures for works, services and goods measured by percentage of GDP. On the other hand, lowest expenditure were achieved in Greece, Malta, Luxembourg and Lithuania.

Since 2008, by Commission's Communication, EU encourage so-called green public procurement as an effective instrument for stimulating production which cares about environment and encourages eco-innovation. Green public procurement is a concept whereby public authorities ensure the procurement of various goods, services and works respecting the environmental standards. Public-private partnership is a form of cooperation between public authorities and economic entities in order to meet public needs, ie. providing a public service under the competence of public authorities. Such partnerships facilitate financing of public interests (infrastructure and cross-border services), sharing the financial risk and reducing costs. They also encourage innovation, research and development, competition and participation of European companies in the public markets of third countries. (COM/ 2008/400 final)

Largest number of tender in the field of public procurement in the EU was published on TED - a multilingual database of public procurement contracts published in amendments of EU official gazette. In 2011, there were about 168160 public procurement contracts published on TED, worth 425 billion of euros, and realized about 3.4% of total EU GDP.

4. EFFECTS OF PUBLIC PROCUREMENT ON REALIZATION OF EU INTERNAL MARKET

Public procurement procedures have a major impact on formation and effective functioning of the EU Internal market. This part of the paper analyze the impact of public procurement on EU Internal market with special attention on reducing corruption and increasing transparency, increasing innovation and impact on clients and business entities.

4.1. Impact on increasing transparency and reducing corruption

Corruption distorts efficient allocation of resources and equitable distribution of income and affects on reduction of economic efficiency and growth. Public sector is largely affected by corruption which reduces government revenues, limiting possibility of financing public services and increase public procurement and reducing efficiency of public administration and economic policy measures. Effect of corruption can be described as "an additional tax on economy", since it increases business costs, undermines competitiveness and increases business risk. (www.javnabava.hr, 2013)

Corruption is present in various forms in all major phases of public procurement procedure: planning, budgeting and preparation of procurement, publishing and evaluation of bids, conclusion and execution of contracts.

In the area of planning, which represents the initial stage of public procurement, corruption can occur in several important forms: an inflated budget, overlapping of budget allocations and misrepresentation of current or future needs. Also, as illegal activities are considered formation of public procurement requirements in a way that favor or harm a particular economic entity or selection of procurement procedures that go his way corruption. (Public Procurement Act, Official Art. 138-145)

In publishing and evaluation process is possible a risk discrimination of some potential bidders through manipulation of received offers and misapplied of criteria for selection. Also, it is possible to provide more comprehensive or premature informations which can favor a particular bidder. (Public Procurement Act, Official Art. 138-145.)

Corrupt activities at the stage of conclusion and execution of contracts are reflected in differences between contract and actual execution. Some of the most common forms are (Public Procurement Act, Official Art. 138-145.): unrealistically low bids with increase in costs after conclusion of the contract through contract amendments; replacement of high-quality products and highly qualified personnel with inferior products or personnel; significant divergences from original terms of contract; scant reporting obligations in purpose of false justification of cost overruns; delivery work confirmation that falsely appear built status; intentional loss or destruction of the supporting documents.

Respecting and accepting goals and principles of the public procurement system, prevention of corruption in public procurement system is based on the following measures (www.vlada.hr, 2008):

1. strengthening the legal framework
2. strengthening control mechanisms
3. collaboration with other supervisory authorities
4. education on anti-corruption measures and ethical issues
5. raising awareness about importance of preventing corruption in public procurement
6. encouraging the use of e-procurement
7. establishment of central public procurement bodies

Strengthen of legal framework aims to subject all procedures in which the state is a partner or counterparty to strict rules and in that way reduce risk of corruption. By amendment to legislation on public procurement will be determined stricter rules and conditions for the participation of economic entities in tenders if they are in any way associated with the client. Strengthening control mechanisms involves implementation of a more efficient monitoring and control through three types of activities (prevention, education and sanctions). In order to improve coordination and joint action of internal and external control and audit institutions, and to avoid any overlapping of jurisdiction, it is necessary to conclude agreements and ensure synergy between State Audit Office, Ministries of Finance and Internal Affairs and state attorney's offices.

By Regulation on the forms, methods and conditions of training in field of public procurement, EU provides educational programs for suppression of corruption in public procurement, with the aim of educating employees in state bodies, local and regional government employees on public procurement.

Independently and in cooperation with the authorities and civil society organizations, EU member states are implementing targeted activities to raise public awareness about importance of public procurement and risks that corruption carries. Activities are conducted through campaigns, round tables, conferences, brochures, videos and posters and organizing specialized seminars for representatives of the media with aim to inform wider public.

Increasing of transparency of public authorities and commercial entities involved in the processes of construction and procurement of new values through the use of new information and communication technologies in all areas of public administration and improving access to information, in accordance with the legislation governing protection of

data confidentiality and other applicable legal regulations related to availability of data, plays an important role in suppression of corruption. In addition to using electronic classifieds, whose use is conditionally mandatory, EU encourages the use of e-auction, e-tendering and advanced electronic signatures, in order to strengthen principles of transparency and publicity and achievement of significant financial savings.

By providing advisory services and implementing pilot projects, EU plans to encourage establishment of central public procurement bodies in Member States with aim of achieving financial savings and reducing number of employees on public procurement activities. Establishment of central bodies decreases risks of corrupt activity.

In addition to above mentioned measures, countries are obliged to follow EU directives on public procurement rules and institutional arrangements for ensuring transparency, which are additionally included in separate directives on legal protection and remedies which are apply to all types of procurement in public sector. In general, rules on procurement in the public sector seeks to fulfill objectives of public procurement, but also to prevent corruption and arranging. Precondition of fulfilling of stated objectives is conclusion of a contract on a truly competitive basis and on the basis of a system which contains clear guidelines with whom are transparency, control, efficiency, accountability and fairness built into entire system of public procurement. (Regvar, 2008)

Since there is still no sufficient number of relevant research on the impact of public procurement on macroeconomic variables, especially GDP and employment, it is not possible to provide empirical information about their correlation.

From aforementioned facts about the importance and share of public procurement in EU GDP and total world trade, it is possible to perform additional conclusions about importance of transparency in public procurement. Following all previously mentioned, organized and transparent public procurement will contribute to GDP growth in EU, and it will result in an increase in total world trade, which will have direct consequences on employment and growth of living standard in the EU and in rest of the world. Organized and transparent public procurement reduces possibility of using "illegal acts" which are especially present in some sectors for example arm industry, and which directly contributes to increasing safety and reducing of risk potential military conflict.

Corruption distorts efficient functioning of markets through increasing business cost and reducing competitiveness of economies. Presence of corruption is especially present in public administration and in public procurement. Measures and EU programs aims to reduce corruption and ensure a transparent and fair procurement procedure, based on competition rules, which will ensure further development of EU internal market.

4.2. Impact on contracting authorities and business entities

E-public procurement have potential for significant improvement of effectiveness of individual public procurement procedures, entire system of public procurement and operations on public procurement markets. Wide use of e-public procurement can accomplished significant benefits and savings in time and money. It can simplify and speed up the procurement which will result in benefits for contracting authorities entities, and business entities.

Compared with systems based on paper documents, e-procurement reducing administrative costs and accelerates individual public procurement procedures. In current financial situation, such efficiency is preferred because it maximizes opportunities which can be gained from limited resources. Systems of e-public procurement in other countries also proved very useful for improving efficiency of spending of funds allocated to public procurement. Bodies of the central public procurement and contracting authorities with a larger number organizational units by using electronic tools can more easily manage public procurement categories. Transition to e-public procurement also provides an opportunity for rationalization of procurement procedures and can be integrated with other (electronic) tools within the organization (stock control, contract management, control procedures) ensuring consistency and efficiency.

E- public procurement, by reducing barriers caused by distance or lack of information, encourages greater participation, increases number of potential candidates and tenderers and potentially increasing market. Although it can not change importance of physical distance in terms of actual performance of contract, e-public procurement offers a way to overcome the costs associated with distance. Advantages of this potential can be experienced within the state borders, when bidders in one region take advantage of opportunities in second region. Easier access to information about possibilities of competition and its process simplification facilitates participation of bidders who are far from the head office.

All of above mentioned should provide better value for public money and increase potential for limited resources, which is very desirable in current financial situation. (www.vlada.hr, 2013)

Impact of introducing new public procurement system have an impact on contracting authorities and business entities. Positive effects are largely reflected in reduction of administrative costs and maximizing opportunities that can be achieved from limited resources. Also, new systems result in improving efficiency in use of public administration resources and rationalization of procedures in addition to providing opportunities to overcome the costs related to distance.

4.3. Impact on inovativeness

EU have a huge untapped potential for stimulating innovation through public procurement procedures and at the same time promoting cross-border cooperation, promotion of "green" economy and ensuring best value for money of public authorities. Public procurement of innovative products and services is important for improving quality and efficiency of public services in situation of budget constraints. EU Directive on Public Procurement adopted a flexible approach, through launching innovation-oriented competition, helping the industry to find new and advanced solutions. However, EU is faced with too small a number of tenders in public procurement aimed at innovation, which stems from a lack of knowledge and capacity needed for successful procurement of new technology innovations, lack of a strategic approach and orientation of most incentives to low-risk solutions.

Innovation-oriented competitions allow clients to launch projects in fields of architecture, engineering or data processing. Above mentioned procedures suggested projects beyond the basic framework, allowing propose innovative ideas that will be used in future procurement procedures. (Directive 2004/18 / EC, Articles 66 to 74)

In case of complex contracts, where the use of open or restricted procurement procedures will contribute to realization of contract, directives provide competitive dialogue. (Directive 2004/18/EC29). Competitive dialogue provides for identification of best ways of meeting needs of client, all in agreement with the bidders. After dialogue, bidders must present ideas and expose the agreed solutions.

According to Article 29 of Directive 2004/18 / EC, a key objective of EU is to protect innovative solutions, and in accordance with the provisions of directive, proposed solutions and other confidential information shall not be disclosed by client to other participants without approval of the bidder.

An important way to foster innovation for clients is development of new products and services, which are not yet available in the market. Under the current legal framework, development of new products and services is realized through pre-commercial procurement, which consists of on procurement of research and development services, which will be used to develop innovative solutions (Article 16, Directive 2004/18 / EC) with respect the potential purchase of the final product or service through normal procurement procedure at a later stage. This approach allows sharing of risks and benefits of designing and testing new limited quantity of products between contracting authorities and supplier, without involvement of state aid. Pre-commercial procurement helps clients in implementation of quality improvement and efficiency of public services, by formation of a new and revolutionary solutions for public sector.

Improving of public procurement procedures is reflected on increase and representation of innovative products and services in market. Also, new procedures are affecting on increase in quality of public services in markets where public sector is a significant purchaser. Stimulation of innovation and research through public procurement procedures require a thorough administrative changes in national, local, regional bodies.

5. CONCLUSION

Effects of public procurement, as a significant part of the EU's GDP, on functioning of EU Internal Market are in this paper analyzed in terms of reducing corruption and increasing transparency, enhancing innovation and impact on contracting authorities and other business entities. Presence of corruption is most common in public administration and public procurement activities, which leads to an increase of business costs and decrease of economy competitiveness. By measures in the field of public procurement, EU aims to ensure a fair and transparent framework of public procurement, based on competition, which will ensure further growth and development of EU Internal Market.

Introduction of new electronic public procurement system affects on contracting authorities and other business entities involved in public procurement, and is reflected in reduction of administrative costs and maximization of the opportunities that can be achieved from limited resources. Also, electronic public procurement increases efficiency in spending public funds, resulting in reduction of prevalence of costs associated with distance between contracting authorities and suppliers.

Stimulation of innovation and research through public procurement procedures, increases quality of public services in markets where the public sector is a significant purchaser. However, further introduction of innovative practices in the public procurement process requires a thorough administrative changes at all levels of public authorities.

REFERENCES

Kandžija, V. 2003. „Gospodarski sustav Europske unije“, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka

Kandžija, V.; Cvečić, I. 2008. «Makrosustav EU», Ekonomski fakultet Sveučilišta u Rijeci, Rijeka

Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, Article 1

Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, Article 4

Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, Article 45

Regvar, M. 2008. «Prilagodba sustava javne nabave u Republici Hrvatskoj», Vlada Republike Hrvatske, dostupno na www.vlada.hr

www.ec.europa.eu, 2010

www.ec.europa.eu, 2013

www.javnabavna.hr, 2013

www.vlada.hr, 2008

www.simap.europa.eu, 2014

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APPLICATION OF REGRESSION ANALYSIS IN TESTING THE IMPACT OF INVESTMENTS IN THE CONSTRUCTION OF HIGHWAYS ON GDP HEIGHT IN EUROPEAN COUNTRIES

ABSTRACT

The paper "Application Of Regression Analysis In Testing The Impact Of Investments In The Construction Of Highways On GDP Height In European Countries," explores the relationship between investments in the construction of highways, as measured by the number of kilometers of highways per hundred square kilometers of certain European countries, and the level of GDP per capita of the country. The hypothesis that this paper attempts to confirm or refute is that increased investments in the construction of highways results in better standards of living for citizens of certain European countries. The paper "Application Of Regression Analysis In Testing The Impact Of Investments In The Construction Of Highways On GDP Height In European Countries," confirms the causality which is based on the assumption that new investments in new kilometers of highways affects the economic position of certain European countries, and its inhabitants. The regression analysis showed a positive and approximately linear relationship between the moderate level of investments in new miles of highways and GDP per capita in PPS in selected countries of the European Union based on values from 2013th year. However, to further confirm proven results and statements in this paper and the importance given to them it is necessary to make further analysis on a larger sample, or in the time series of at least 10 years.

Keywords: regression analysis, GDP, European countries, motor highways, investments

JEL classification: C

1. INTRODUCTION

Increase of the social standards is an imperative that every market oriented economy has to establish through market competitiveness and the removal of inefficient economic entities from the market. High profits are achieved by those undertakings remaining in the market. Croatian Government as regulator of fiscal policy and the Croatian National Bank as a regulator of monetary policy are important factors of the process. However, the Government of the Republic of Croatia, except as a moderator of fiscal policy appears also as a significant investor, creating and influencing the general economic climate. In the past decade, significant fiscal and credit, mainly foreign, funds were invested in the construction of highways, thus creating a modern road network which further connected different regions of Croatia. At the same time, Croatia has opened its natural beauty for foreign tourists who are now able to easily get to Croatian coast, but also the mainland of Croatia.

During the public discussions in the Republic of Croatia in the past decade, the public questioned and defended such high investments in the construction of highways often without valid arguments. So it seemed very interesting and useful to apply the Regression Analysis to test the premise that a larger number of highways on 100 square kilometers of a given country positively correlates with higher income per capita of the same country.

2. REGRESSION ANALYSIS

If the two phenomena occur together it does not necessarily mean that they are interrelated. In order to establish the interdependence of one phenomenon on another phenomenon, the Regression Analysis is used. In the Regression Analysis, phenomena is presented in variables that can be independent and dependent (Šošić, 2006). Dependent variables are those variables whose changes are explained by other variables. These are variables that change due to changes in other variables. Independent variables explain changes in the dependent variable. Connection between phenomena can be functional (deterministic) and statistical (stochastic). The statistical correlation is influenced by stochastic (unpredictable) variations. The Regression Model is thus, an equation or set of equations with a finite number of variables. Data for Regression Analysis is generated in statistical tests by observing or measuring. In certain applications, the regression model data can appear as numerical values for certain economic or spatial units, as a time series or a combination of both (Šošić, 2006).

The regression model consists of a single equation with one dependent and one or more independent variables. When the model consists of one dependent and one independent variable, it is a simple regression model. Multiple regression model has one dependent and two or more independent variables.

The **General model of Simple Regression** is (Kmenta, 1997):

$$Y=f(X)+u$$

The **Simple Linear Regression Model** is the following (Kmenta, 1997):

$$Y=a+bX+u$$

- Y – the dependent variable,
- X - the independent variable,
- a, b - unknown parameters to be estimated,
- u - random variable representing the unknown and ABSTRACTed influences on variable Y .

The model is linear if each variable in the model can result in 1. Except to clarify the interdependence of a phenomena, Regression Analysis is used to predict the value of the dependent variable for the assumed value of the independent variable in a given regression model. The Goal of Regression Analysis is to choose and evaluate the parameters of the function $f(X)$ that will in the best way describe the relationship between variables X and Y . Given that variable u describes unexplained impacts resulting from the statistical correlation of variables X and Y , the best model is the one that minimizes the value of u variable.

3. APPLICATION OF REGRESSION ANALYSIS

The paper will attempt to explore the relationship between investment in the construction of highways, measured by the number of kilometers of highway per 100 square kilometers of selected European countries and by GDP per capita.

Table 1 Highway Density and GDP per capita

Country	Highway Density (km per 100 km ²)	GDP per capita (in PPS for 2013)
Belgium (BE)	5,8	37.800
Czech Republic (CZ)	0,9	26.300
Denmark (DK)	2,6	37.800
Germany (DE)	3,6	39.500
Greece (EL)	0,8	23.600
Spain (ES)	2,9	30.100
France (FR)	2,1	35.700
Ireland (IE)	1,3	41.300
Italy (IT)	2,2	29.600
Luxembourg (LU)	5,8	77.900
Netherlands (NL)	6,3	43.300
Austria (AT)	2,0	42.600
Portugal (PT)	3,2	22.900
Finland (FI)	0,2	35.900

Sweden (SE)	0,4	40.900
United Kingdom (UK)	1,5	37.300
Cyprus (CY)	2,8	24.500
Estonia (EE)	0,3	22.400
Hungary (HU)	1,6	19.800
Lithuania (LT)	0,5	22.600
Poland (PL)	0,4	21.100
Slovakia (SK)	0,8	24.700
Slovenia (SL)	3,8	27.400
Bulgaria (BG)	0,4	14.400
Romania (RO)	0,2	14.400
Croatia (HR)	2,2	17.800

Source: author's compilation based on data from The World Factbook and Eurostat

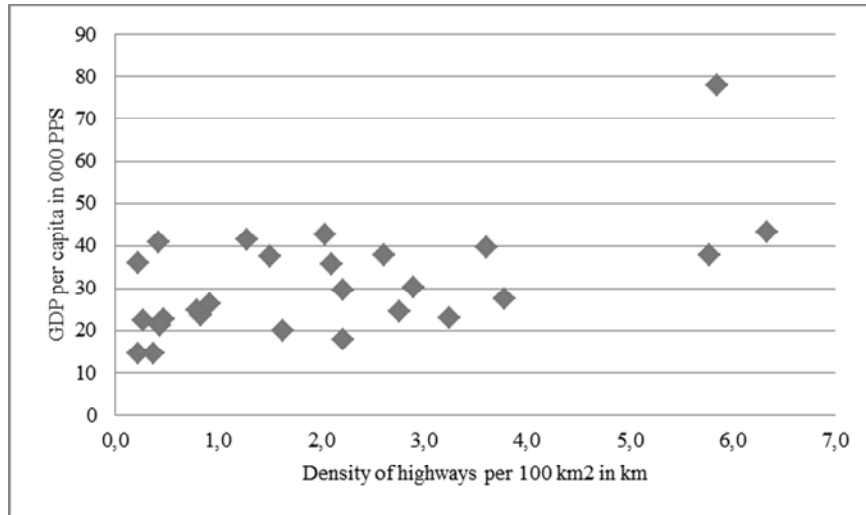
The dependent variable (Y) represents the height of GDP per capita, and the independent variable (X) represents the number of kilometers of highways per 100 square kilometers of selected European countries. The analysis will be carried out according to the data for 2013.

3.1. Scatter Diagram

The aid for the selection of a function form is a scatter diagram. It is a graphical representation, which is constructed in a rectangular coordinate system. The diagram consists of plotted points of which position depends on the values of variables and selected arithmetic benchmarks on the axes.

On the horizontal axis is the arithmetic benchmark for the independent variable (the variable x), and the vertical axis is a benchmark of the independent variable (the variable y). According to the points we can assume the possible orientation of the function $f(X)$. Scatter diagram shows the empirical values graphically, in this case the height of GDP per capita in PPS in 000 on the Y axis and the density of highways per square kilometers in km on the X axis.

Figure 1 Scatter Diagram



Source: authors

Based on the scatter diagram it can be concluded as follows:

- The greater the number of kilometers of highways per square kilometers of individual European countries (independent variable), the higher the GDP per capita (the dependent variable),
- The scatter diagram shows a positive linear relationship.

3.2. Estimation of Parameters in the Simple Linear Regression Model

The Simple Linear Regression Model is appropriate to use in the case of a corresponding change when the independent variable X follows the approximately linear variation of the dependent variable Y. The Simple Linear Regression Model with the estimated parameters is as follows:

$$\hat{Y} = a + bx$$

- a - the constant term, the expected value of the dependent variable when the independent value is equal to 0 (zero),
- b - regression coefficient, indicates the linear change in value of the regression function for unit increase in the value of independent variables.

The Parameters in the Model are estimated using the Least Squares Method.

Table 2 Parameters

Country	GDP per capita (in PPS for 2013)	Highway Density (km per 100 km ²)	x ²	y ²	xy
Belgium (BE)	37,800	5,8	33,41	1.428,84	218,49
Czech Republic (CZ)	26,300	0,9	0,85	691,69	24,30
Denmark (DK)	37,800	2,6	6,87	1.428,84	99,10
Germany (DE)	39,500	3,6	13,01	1.560,25	142,46
Greece (EL)	23,600	0,8	0,70	556,96	19,72
Spain (ES)	30,100	2,9	8,44	906,01	87,45
France (FR)	35,700	2,1	4,44	1.274,49	75,24
Ireland (IE)	41,300	1,3	1,65	1.705,69	53,10
Italy (IT)	29,600	2,2	4,90	876,16	65,51
Luxembourg (LU)	77,900	5,8	34,18	6.068,41	455,42
Netherlands (NL)	43,300	6,3	40,19	1.874,89	274,51
Austria (AT)	42,600	2,0	4,20	1.814,76	87,28
Portugal (PT)	22,900	3,2	10,55	524,41	74,38
Finland (FI)	35,900	0,2	0,05	1.288,81	8,27
Sweden (SE)	40,900	0,4	0,18	1.672,81	17,18
United Kingdom (UK)	37,300	1,5	2,27	1.391,29	56,21
Cyprus (CY)	24,500	2,8	7,64	600,25	67,70
Estonia (EE)	22,400	0,3	0,08	501,76	6,15
Hungary (HU)	19,800	1,6	2,65	392,04	32,25
Lithuania (LT)	22,600	0,5	0,22	510,76	10,69
Poland (PL)	21,100	0,4	0,19	445,21	9,21
Slovakia (SK)	24,700	0,8	0,64	610,09	19,71
Slovenia (SL)	27,400	3,8	14,35	750,76	103,80
Bulgaria (BG)	14,400	0,4	0,14	207,36	5,42
Romania (RO)	14,400	0,2	0,05	207,36	3,32
Croatia (HR)	17,800	2,2	4,91	316,84	39,44

Source: authors

$$\bar{y} = 811,6 \div 26 = 31,22$$

$$\bar{x} = 54,9 \div 26 = 2,11$$

Estimation of the parameter b using the Least Squares Method is given below. Insertion of the appropriate values from the table leads to the regression coefficient b :

$$b = \frac{\sum_{i=1}^n x_i y_i - n \bar{x} \bar{y}}{\sum_{i=1}^n x_i^2 - n \bar{x}^2} = 4,2368$$

Therefore, the Regression Coefficient b is 4,2368. Constant a is as follows:

$$a = \bar{y} - b \bar{x} = 31,22 - 4,2368 \times 2,11 = 22,2681$$

The Regression Coefficient in this case can be interpreted in a way that if the number of kilometers of highways per 100 square kilometers of a given country in the EU is increased

by 1 (one) km, GDP per capita will increase by 4,2368 in PPS. Constant a in the example has no particular significance, except that represents the regression value of the regression variable $x = 0$.

In other words, hypothetically, if a country has 0 (zero) kilometers of motorways, GDP per capita would amount to 22 268 in PPS.

3.3. Regression Function

Therefore, the Simple Linear Regression Model with the estimated parameters obtained using the Least Squares Method is:

$$\bar{y} = 22,3 + 4,2368x$$

In interpreting the Regression Function one should always keep in mind that this function expresses the relationship between phenomena in terms of averages, that does not represent deterministic but rather statistical relationships of the phenomena.

With the insertion of the empirical values of the independent variables in the regression equation, regression values of the dependent variable are obtained.

3.4. Regression Values

Regression Values represent the assessments of the value of the dependent variable for a given real value of the independent variable. The differences in values of the dependent variable and regression values result in residual deviations.

The Residual Deviations are assessments of the random variables in the Regression Model. They are calculated by subtracting the corresponding regression value from the actual value of the dependent variable.

The Residual Deviations are the basis for valuation of the representativeness of Regression. They are used for calculating the variance or standard deviation of the Regression.

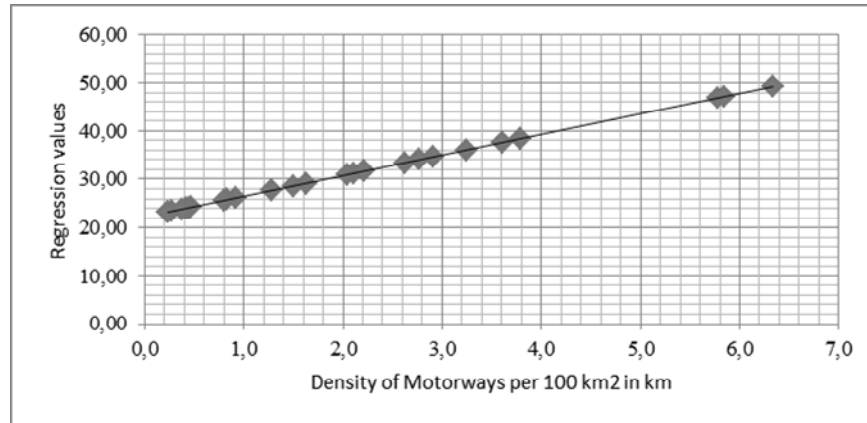
Table 3 Regression Values

Country	GDP per capita in PPS 2013	Regression values
Belgium (BE)	37,800	46,76
Czech Republic (CZ)	26,300	26,18
Denmark (DK)	37,800	33,38
Germany (DE)	39,500	37,55
Greece (EL)	23,600	25,81
Spain (ES)	30,100	34,58
France (FR)	35,700	31,20
Ireland (IE)	41,300	27,72
Italy (IT)	29,600	31,64
Luxembourg (LU)	77,900	47,04
Netherlands (NL)	43,300	49,13
Austria (AT)	42,600	30,95
Portugal (PT)	22,900	36,03
Finland (FI)	35,900	23,24
Sweden (SE)	40,900	24,05
United Kingdom (UK)	37,300	28,65
Cyprus (CY)	24,500	33,98
Estonia (EE)	22,400	23,43
Hungary (HU)	19,800	29,17
Lithuania (LT)	22,600	24,27
Poland (PL)	21,100	24,12
Slovakia (SK)	24,700	25,65
Slovenia (SL)	27,400	38,32
Bulgaria (BG)	14,400	23,86
Romania (RO)	14,400	23,25
Croatia (HR)	17,800	31,66

Source: authors

The Regression Line is shown in the following figure.

Figure 2 Regression Line



Source: authors

Regarding the reliability of the Model, it is necessary to carry out an assessment of the representativeness of the Regression Model, apropos to determine the values of the relevant statistical data.

3.5. Analysis of the Simple Linear Regression Model Representativeness

The Regression equation is an analytical expression that describes the relationship between phenomena in terms of averages. The basis for measuring the representativeness is the dispersion around the regression, which is reflected through residual (unexplained) deviations. The residual variances are the differences between the actual values of the dependent variable and regression values. The lesser deviations of empirical values from the regression values, the better the representativeness of the regression.

3.5.1. Regression Variance

Table 4 Regression Variance and Standard Deviation

Regression Variance	108,5203
Standard Deviation	10,62361

Source: authors

The Standard Deviation of the Regression shows that the average deviation of the actual value of the dependent variable (PPS per capita) from the regression value of GDP per capita is 10,623 in PPS, and represents an absolute indicator of the average degree of

variation of the actual values of the dependent variable in relation to the expected regression values.

3.5.2. Variation Coefficient

The Variation Coefficient is a relative measure of the representativeness of the regression model, which is obtained as the ratio of the standard deviation of the regression and the arithmetic mean of the dependent variable in the model, multiplied by 100 (one hundred) (Šošić, Serdar, 1995). In the analyzed case it is 34.03%, which means that the relative average deviation of empirical values of height of GDP per capita in relation to the regression value is 34.03%.

3.5.3. Coefficient of Determination

The Coefficient of Determination is a measure of representativeness, which is calculated based on the distribution of deviation values of the dependent variable in the regression model of its arithmetic mean. The Coefficient is in range between 0 (zero) and 1 (one). As a rule, the model is more representative as the coefficient of determination is closer to 1 (one). The Coefficient of Determination shows that the proportion of sum of the squares of the total sum of squared deviations is equal to 0.5142, thus the Simple Linear Regression Model was interpreted by 51.42% deviation.

Estimates of the parameters of the Regression Model and calculation of the appropriate representation indicators of the same model leads to the elements by which it is possible to determine the value of the Coefficient of Linear Correlation between the variables X (the amount of investment in the construction of highways) and Y (height of GDP per capita) (Šošić, Serdar, 1995). The result shows that in this case they are correlated in 71.71% of cases. The above shows that the correlation between the two phenomena is of medium strength. Correlation analysis only measures the degree of correlation between two variables without any implication of causality.

4. CONCLUSION

Regression Analysis revealed a positive and approximately linear relationship of medium strength between the amount of investments in new kilometers of highways and height of GDP per capita in PPS in the selected countries of the European Union (based on values from 2013). The analysis resulted in a positive coefficient of linear correlation and with the intensity of 71.71%. The cause for this research was partly stimulated by a public discussion in the Republic of Croatia regarding the possible advantages or disadvantages of investing in highways construction, which actually collaterally meant more credit financing from foreign institutions. The ending result is more than satisfying given the hypothesis is confirmed.

REFERENCES

- Šošić, I. and Serdar, V. (1995), *Uvod u statistiku*, Školska Knjiga Zagreb
- Šošić, I (2006), *Primijenjena statistika*, Školska Knjiga, Zagreb
- Kmenta, J. (1997), *Počela ekonometrije*, Mate d.o.o., Zagreb

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ADJUSTMENT OF BANKING SYSTEM IN BOSNIA AND HERZEGOVINA TO EU BANKING SYSTEM

ABSTRACT

European integration is a strong factor of internationalization of the banking systems and changes in their market structure, as well as the conditions and limits of their activity.

Banking systems in the EU candidate countries, among which is also Bosnia and Herzegovina, are exposed to a constant transformation process and deep reforms.

By opening to the EU, national systems of candidate countries are faced with changes that are occur in the banking and financial systems of developed countries. These changes, caused by information technology and the internationalization of markets, do not just imply mergers and acquisitions of banks, but also change of structure of income from banking activities and the supply of new, diversified financial services to the clients.

Circumstances in developing countries (including Bosnia and Herzegovina), such as undeveloped legislation, limited activities of financial institutions and unstable political situation, affect and limit positive effects of capital market. Also, most of the markets in developing countries are small and as such are not competitive at the European level. In these countries, stability of the banking sector is the basis of overall stability of economy. Unfavorable circumstances results in low turnover and low capital market. Globalization of financial markets leads to the creation of financial conglomerates and stock association, wherein small stock exchanges and domestic financial institutions must adapt to change. Bosnia and Herzegovina and other developing countries must open their goods, services and capital markets, and ensure their free movement for the purpose of achieving greater involvement in European and global economy.

Inclusion of banking systems of candidate countries in the EU internal market opens the question of their competitiveness and general fulfillment of integration condition. Furthermore, integration opens question of conditions and bank operations in the new environment which resulted from constant process of adaptation to EU institutional and legal framework. High quality and timely adjustment of banking system in Bosnia and

Herzegovina to EU standards, through institutional and organizational reforms, can provide certain benefits and reduce costs for users and providers of banking services and the entire banking sector.

Key words: banking system, adjustment, EU, Bosnia and Herzegovina

JEL classification: G21

1. INTRODUCTION

The financial system can be defined as a set of institutions, markets and regulations enabling allocation of resources in time and space. This fundamental objective of financial system is fulfilled by five basic functions: savings mobilization, resources allocation, corporate control, risk management and facilitating exchange of goods and services (Levine, 1997). Developed financial system consists on large number of participants. Most common institutions in structure of financial system are banks, insurance companies, mutual funds, savings and credit organizations and securities market. Depending on orientation of financial system it is possible to differentiate financial systems oriented towards banks, so-called bank-based systems, and exchange oriented financial systems.

The main goal of BiH in the near future is accession to the EU. An economic system of BiH is characterized by a low competitiveness, low share of people with higher education, low education of the labour force, low technological competitiveness, and generally bad governance and economy. All these factors make the accession process difficult. In order to make the mentioned process easier, it is necessary to gradually establish institutions that guarantee democracy and the rule of law and provide other fundamental freedoms. It is also necessary to establish functional market economy capable to fairly compete with competition in the Internal European market and to adapt administrative structures and make them able to implement the EU acquis. Also, an important role in accession process of Bosnia and Herzegovina toward European integration lies on adjustment of banking sector to requirements and standards of EU. Research in this paper is directed to analysis of banking system in Bosnia and Herzegovina and EU banking system and to proposing specific measures to facilitate adjustment of banking system of Bosnia and Herzegovina to EU banking system.

2. CHARACTERISTICS AND REGULATORY FRAMEWORK OF THE EU BANKING SYSTEM

European Central Bank (ECB) is the holder of monetary policy in EU. For a thorough understanding of the EU banking system is necessary to investigate characteristics of the ECB, identify the regulatory framework of the EU banking system, analyze market structure and present changes that have occurred due to changes and developments in global and European financial markets.

2.1. European Central Bank (ECB)

As already mentioned, ECB is the holder of monetary policy in EU and its activities started in 1999, parallel with introduction of third phase of monetary union.

Main tasks of ECB implies maintaining price stability implies (annual price growth which is less than 2%, but close to 2%), creating and implementing of monetary policy, management of foreign exchange reserves of Member States and managing payment transactions (www.ecb.org, 2012)

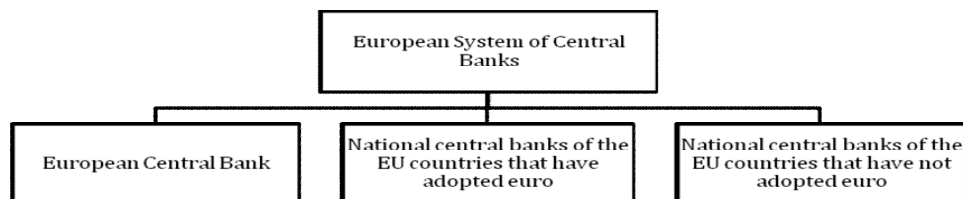
ECB defines monetary policy which is later implemented by the national central banks and from which it is evident system decetralization. (Vujčić, 2003)

Independence of ECB is determined by the institutional independence (arises from independence of the national central banks), operational independence (free choice and use of monetary instruments), personal independence of employees (obligation to act in the direction of realizing ECB interests and ban of emphasis national interest) and financial independence (capital is enrolled only by nationa central banks).

Main authorities of ECB are Board of Directors, Executive Board and General Assembly. Task of Board of Directors, which is composed of six members of Executive Board and the 12 governors of national central banks of Member States which have adopted euro, is the formulation of monetary policy in the eurozone. Board of Directors meets two times a month and it is controled, as Executive Board, by ECB president. At the first meeting focus is on evaluation of monetary and economic situation in the euro area and on making decisions on monetary policy. Focus of second meeting is on discussion about other issues related to functioning of ECB and Eurosystem. Executive Board, composed of President of ECB, Vice-President of ECB and four members is responsible for the implementation of monetary policy in a way formulated by Board of Directors. General Assembly is composed form ECB President, ECB Vice-President ECB and 15 governors of national central banks of all EU member states. General Assembly has an advisory character and coordinate the efforts of ECB and also prepares ECB for a possible enlargement of a common currency. (www.hnb.hr, 2012)

European System of Central Banks (ECSB) is a set of of central Banks, composed from European Central Bank and national central banks of all EU member states, regardless of whether they have adopted the euro (Scheme 1). The European System of Central Banks is a supranational body whose main objective is maintaining price stability.

Scheme 1: European System of Central Banks (ECSB)



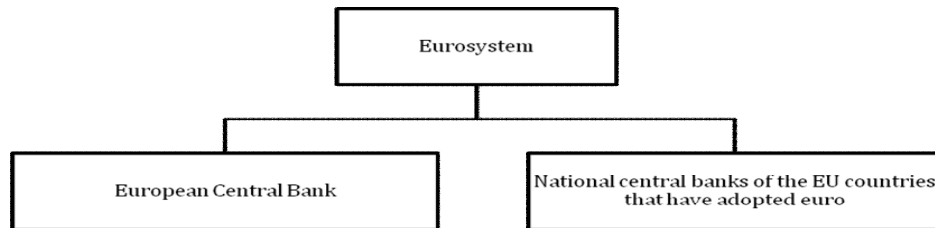
Source: www.hnb.hr, 2012

ECSB was founded in 1998 by Delors report, has no legal personality, but its components operate in accordance with their established objectives, provisions of basic contracts, statute of ECB and ECSB's and decisions taken in the governing bodies of the ECB. ECSB is managed by ECB's decision-making bodies.

As main tasks of European System of Central Banks is possible to determine identification and implementation of monetary policy, conduction of foreign exchange operations, holding and management of official foreign reserves of Member States and promotion of smooth functioning of payment system. (www.hnb.hr, 2012)

Eurosystem is set of central banks composed of European Central Bank and national central banks of Member States which have adopted the euro (Scheme 2). Main objective of Eurosystem is to maintain price stability and support general economic policies in Union in order to achieve a high level of employment and sustainable non-inflationary growth (www.ecb.org, 2012).

Scheme 2. Eurosystem



Source: www.hnb.hr, 2012

In order to achieve tasks of Eurosystem, ECB, supported by the national central banks collects statistics from relevant government or state authorities and economic entities. (www.ecb.org, 2012)

ECB is holder of European monetary policy, whose main objective is ensuring price stability. For the implementation monetary policy of eurozone, in accordance with the objectives of the ECB, are responsible ECB's authorities - Board of Directors, Executive Board and General Assembly. Objectives of ECB in the form of insurance price stability, are followed by European System of Central Banks. Eurosystem requires maintaining price stability and achieving a high level of employment and non – inflationary growth.

2.2. Regulatory framework of EU banking system

Program Basel I was announced in 1988, and has been applied since 1992. Main objective of the Program was to ensure stability of financial system through its adequate capitalization related to risk exposure (capital as risk absorbent). (Smirčić, 2009)

Capital requirements of Basel I Program included credit risk and market risks (Kostašnjak, 2010). Minimum capital adequacy ratio was 8% and was calculated according the formula:

$$\text{capital} / \text{weighted assets} \geq 8\%$$

Weight factors or ponderers were consisted on country (0%, in some cases 20 - 50%), banks (20-50%), corporate loans (100%) and household loans (secured by residential real estate) (50%).

Program Basel II was applied in EU Member States since 2008 and has resulted in numerous changes among which is necessary to point out capital requirements for operational risk and introduction of an advanced method of calculating capital requirements on the credit risk based on internal ratings systems. Also, minimum capital adequacy ratio was amounted to 8% and strict super-auditing processes were implemented. Basel II also introduced public disclosure requirements of prudential information for credit institutions. (Smirčić, 2009)

Capital requirements within the Basel II program included credit risks, market risks and operational risks.

Basel II has brought benefits for Balkan countries through strengthening internal risk management function and development of advanced risk measurement methodology (internal rating system). Effects of Basel II program at the macro level in terms of financial stability, due to the financial crisis that began in 2008 and showed some of his weaknesses, remain questionable.

Present financial crisis has caused introduction of Basel III program in 2010, which represents the biggest change in the global banking system in recent decades. This program requires banks in holding 7% of risk assets, which represents more than a triple increase compared to the previous regulation (2%). Using this framework, banks will have to collect several hundred billion euros in fresh capital in the next decade. Taking into account the complexity of adapting to the new system, banks have been approved a transitional period for acceptance of new rules, which should last until 2019. Aim of new regulatory framework is to force banks to orient to least risky strategy and ensure sufficient reserves to independently face with financial shocks, without help which involves taxpayer money. Implementation of the program should contribute to long-term global financial stability and growth.

Banks think that new rules will reduce amount of money necessary to lend to companies, which could have a negative impact on economic growth in Europe. According to the program rules, banks must hold capital worth at least 4.5% of assets (known as Tier 1) and form a separate system, so-called. buffer zone of capital protect, amounted to 2.5% of assets, thus the total amount of reserves increases to 7%. If buffer zone will be reduced, banks will be faced with restrictions on payment of bonuses and dividends. Protection system slows borrowing money in situations where the credit market is showing signs of excessive borrowing danger (Kostašnjak, 2010)

Harmonization with Basel III requires large amounts of fresh capital. World's biggest banks will have to increase its capital by \$ 556 billion or write off about 5.5 billion american dollars of assets by 2018 to comply with new capital standards. Mentioned banks should

increased their capital in relation to the end of 2002 by 23%, which corresponds triple amount of their total annual income. Requirements of Basel III and need for additional capital is calculated as ratio of capital and risk-weighted assets. Banks can meet this requirements by retaining profits, recapitalization of or reduction of assets. Banks usually use a combination of all three options. Biggest problem of European banks is imprecise definition of capital. If big banks decide to meet capital requirements by issuing new shares, they will reduce the return on invested capital, which was 10.8% till 2008. Also, recapitalization would reduce return on invested capital.

Basel III focuses on the quality capital, ie. capital with greater ability to absorb risk and capital risks are still counted for credit risk, market risk and operational risk. Minimum capital adequacy ratio remains 8%, but Basel III introduces additional capital requirements that include additional protective layer of capital, counter-cyclical layer of capital and additional capital requirements for systemic risk.

Liquidity risk management consists on short-term liquidity insurance and structural liquidity insurance. Other elements of Basel III system consists remuneration policy (salaries and bonuses), leverage ratio and bonus agencies.

Basel III defines minimum standards for liquidity management through two indicators (Smirčić, 2009):

- Liquidity Coverage Ratio (LCR) - short-term liquidity management standard:

$\text{highly liquid assets} / \text{net outflows in 30 days} \geq 1;$

- Net Stable Funding Ratio (NSFR) -structural ie. long-term

Liquidity management standard: $\text{available stable source} / \text{required stable sources} \geq 1$

Available stable sources (capital, long-term borrowings, stable deposits) must be greater than required stable sources, which are estimated based on the maturity and quality of loans. Situation in which bank financing short-term unstable sources, and provides long-term loans is not permitted.

Macroeconomic effects of Basel III program can be summarized as changes in interest rates, changes in GDP and changes in employment. Eurozone is an area that needs biggest adjustment because of present high dependence on the banking sector. (Doyle et al., 2011)

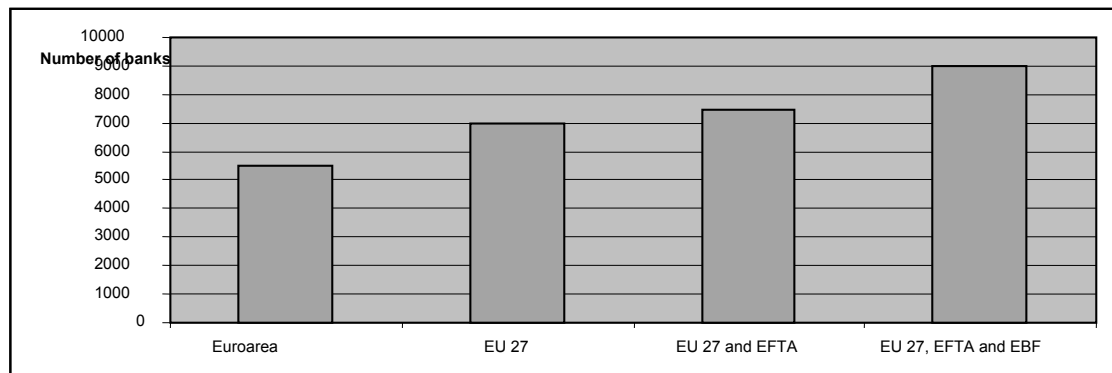
Regulation of banking system in EU is based on the rules of Basel program, which was developed in the period of 1992 (Basel I) until 2010 (Basel III). Main objective of Program is to ensure stability of financial system through adequate capitalization, in relation to conditions to which it is exposed.

2.3. Market structure of EU banking system

The financial crisis that has shaken the whole world has left its mark on European banking sector, which nevertheless still maintains a stable value.

European Banking Federation (EBF) brings together nearly 5,000 commercial banks located in the EU and EFTA countries, accounting for 65% of banks in the European area. (Figure 1)

Figure 1: Size of European banking sector



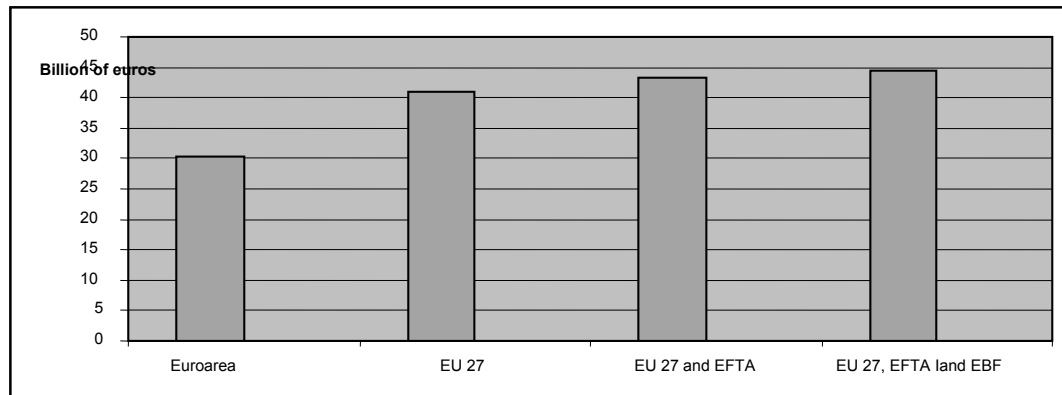
Source: EBF¹ Members and Associates, 2011

There are approximately 8,878 banking units in Europe, 78% of which operating in EU and 62% in the Eurozone.

Total assets of European banks is about 44.5 billion euros. (Figure 2)

¹ European banking federation

Figure 2: Total assets of European banks

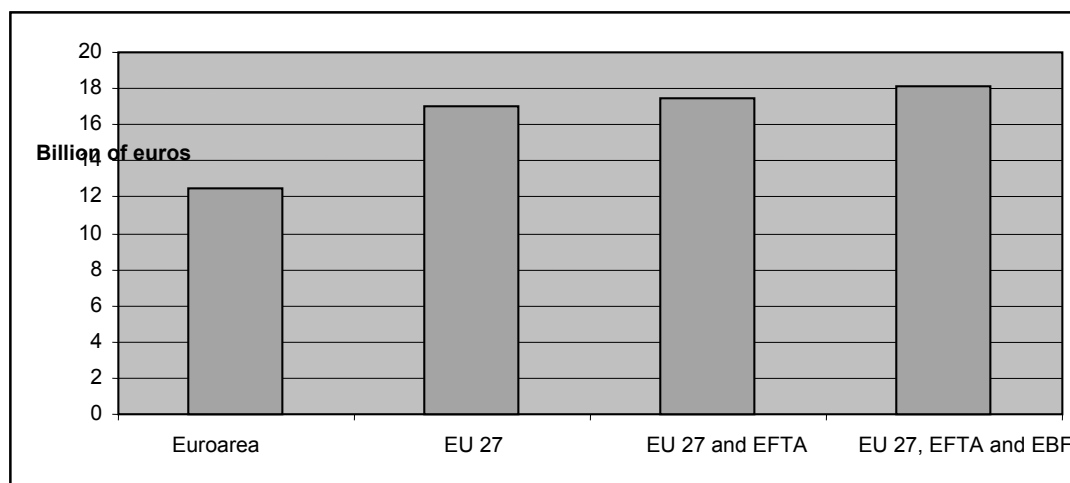


Source: EBF Members and Associates, 2011

More than 2/3 of assets of European banks is concentrated in the Eurozone.

European Bank emitted loans in amount of 18.1 billion euros (Figure 3)

Figure 3: Loans of European banks

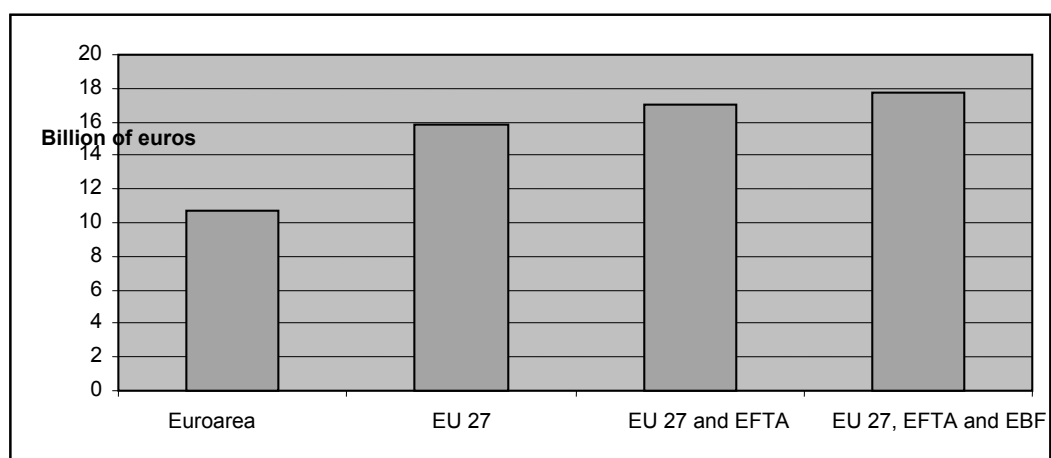


Source: EBF Members and Associates, 2011

More than $\frac{3}{4}$ of European banks loans has been approved by institutions seated in the Eurozone.

Size of bank deposits in the EU is around 15.97 billion. (Figure 4)

Figure 4: European banks deposits

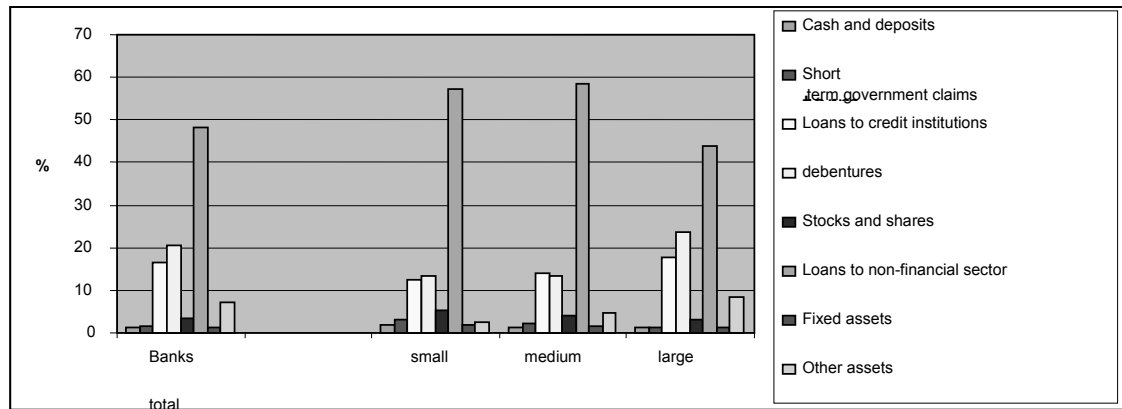


Source: EBF Members and Associates, 2011

Deposits of euro area banks are amounted to about 11.7 billion while banks in EU27, EBF and EFTA countries have deposits in approximate value of around 17.9 billion euros.

Most important component of bank assets in EU are loans to non-financial sector and deposits. (Figure 5)

Figure 5: Assets structure by size of banks in the EU



Source: EU Banking Structures, ECB, 2012, www.ecb.europa.eu

Loans to non-financial sector are accounted for 43.9% of the total assets of large banks, 57.2% of assets off small banks and 58.6% of assets in medium-sized banks.

Deposits are the most important source of funds in small banks (67.5%), while their importance is much less in bank liabilities of medium size bank (46.2%), and especially in large banks (36.9%).

Banking sector is a subject of mergers and acquisitions and changes in ownership and organizational structure. Carried merger increases market power of banks and affecting on increase of their assets and market share. (Table 1)

Table 1: Mergers and acquisitions in Europe by sector from 2007 to 2009

Sector	2007	2008	2009
Other services	9247	6900	6896
Wholesale and retail	3241	2729	2619
Machinery, equipment and furniture	3317	2766	2408
Banking	2079	1775	2066
Chemicals, rubber and plastic	1920	1288	1299

Source: Van Dijk, 2010

Data from Table 1 shows that in the banking sector in 2009 was conducted 2066 activities of mergers and acquisition. Highest share was recorded in other services and retail and wholesale sector.

Mergers and acquisitions in each sectors in Europe have different importance and value for economy and population. (Table 2)

Table 2: Value of mergers and aquisition by sectors in Europe

Sector	2007 (mil. \$)	2008 (mil. \$)	2009 (mil.\$)
Banking	478.956	487.957	356.071
Other services	622.568	319.653	198.976
Gas, water and electricity	262.867	106.552	115.724
Machinery and equipment	181.218	141.488	100.236
Wholesale and retail	184.630	122.117	89.001

Source: Van Dijk, 2010

Data from Table 2 shows that mergers and acquisitions in the banking sector have the highest value. Due to the economic crisis, this value were on the decline since 2007, but held at the level of 356.071 million euros (2009).

Concentration implies merging companies and banks as allowed legal form of the emergence of new companies/banks in a way that two or more companies/banks merge or one company/ bank transfers its assets to another company/bank.

Concentrations are carried out with the aim to through synergies effects increase economic strength and thus to achieve economic goals. (Table 3)

Synergistic effects create the possibility for better use of existing resources and open up prospects for technological development. Problem of concentration occurs in cases where it leads to a reduction of competitors and thus endanger competition and leads to the formation of monopolies in some activity. Merger control is carried by Directorate General of the European Commission for concentration. (Kandžija and Cvecic, 2010)

Table 3: Countries according fluctuation of number of banks and concentration

	Number of banks	
	Drop	Incerase
Concentration drop	Czech Republic Spain Cyprus Luxembourg Hungary Austria Slovenia	Estonia Lithuania Malta Poland Romania Slovakia
Increase of concetration	Belgium Bulgaria Denmark Deutschland France Italy Netherlands Portugal Finland United Kingdom Croatia	Ireland Greece Latvia Sweden

Source: Van Dijk, 2010

Table 3 indicates a concentration drop and decrease in number of banks in Austria, Hungary, Slovenia, etc.. Concentration drop and growth of number of banks was recorded in most of new member states. „Old“ member states are characterized by the growth of concentration and decrease in number of banks.

Level of bank concentration is measured by the HHI index (Herfindalh-Hirschman Index), which represents sum of squares of the share of banks on the market. Since the calculation of the HHI index includes all banks on the market, it provides better information than the concentration index. HHI after the merger shall not exceed 1800 (ie. 0.18) and change in the value shall not exceed than 200 (ie. 0.02). (Table 4)

This indicator is focused on the larger banks because of squaring of market shares. In the case of monopolies its value approaches the value 1. It can be displayed in a way that the maximum value is 100 or 10,000 (Ljubaj, 2005)

Table 4: Level of concetration in EU countries

Concentration		
Low (HHI<1000)	Medium (1000<HHI<1800)	High (HHI>1800)
Bulgaria	Belgium	Estonia
Deutschland	Czech Republic	Lithuania
Ireland	Denmark	Netherlands
Spain	Greece	Finland
France	Cyprus	
Italy	Latvia	
Luxembourg	Malta	
Hungary	Portugal	
Austria	Romania	
Poland	Slovenia	
Sweden	Slovakia	
United Kingdom	Croatia	

Source: Van Dijk, 2010

Most of the banking sector in Europe are characterized by low and medium concentration of banking system. High concentrations was registered only in Estonia, Lithuania, Finland and the Netherlands.

In the EU 27, EFTA and EBF operates approximately 8,878 banking units with total assets of 44.5 billion euros, of which 18.1 billion are loans and 17.9 billion are deposits. Also, banking sector in Europe is characterized by low and medium concentrations.

2.4. Changes in EU banking sector

Increase in productivity of the banking sector in the previous period was result of operational and structural changes in the banking sector. Changes of bussines model are reflected in decrease in the ratio of operating expenses and operating income from 66% to 57%. Also, as the main institutional factors that have influenced development of banking in the previous decade, it is possible to identify a stimulating regulatory environment, development and expansion of banks outside the EU markets and technological change. (Subic, 2008)

An important objective of EU institutions is integration of financial markets since it is considered that increased productivity through integration will yield benefits worth 1% of total EU GDP (130 billion of euros) and an increase in employment of 0.5% (one million jobs). Encouraging market integration resulted in increased competition and better range of banking products and services, under the condition that regulatory costs are higher than the benefits caused by integration.

Technological changes had great inflence on development of banking sector and they lead to improved flow of information between banks and consumers, progress of the risk management process and decrease financial services prices (eg. E-banking). On the other hand, fixed costs (25%-30%) are growing due to greater use of information technology. There are four major trends shaping the banking sector in Europe in the past 15 years, namely the consolidation of banks, internationalization of banks, convergence of business and investment banking and specialization of banks in market niches. (Bakarić, 2009)

Consolidation of banking sector is motivated by the fact that in banking sector is important achievement of economies of scale. Reasons for consolidation in the future must be operational and strategic. Operational reasons include achieving economie of scope in areas where fixed costs are a major factor. Merger of banks increases efficiency of the exchange of best practices and experiences between people, products and processes, resulting in lower prices of banking services and greater competitive advantage. Diversification of business leads to reduction of risks caused by negative developments in individual markets and allows better credit rating and lower financing costs. Big banks can meet the financing needs of significant transactions (up to ten billions of euros).

Strategic reasons for consolidation may be summarized to a high market capitalization, which reduces dependency of management board of one shareholder because of widespread of investment base. Consolidation in Europe has become a reality, as is evident from the fact that the number of credit institutions in the euro area fell by 30% and there has been an increase in market concentration of large banks. (Bakarić, 2009).

Internationalization of banking sector consists on increasing ownership in foreign banks, entry of foreign banks (in developing countries) to the global market and increase of shareholder base of European banks.

Convergence of banking sector resulting in a closer interconnection and complementarity of activities in the capital markets and traditional banking activities. Banking sector is developed from model of financial intermediation to risk mediation model, which resulted in benefits for banks, borrowers, investors and the economy. Completion the current economic crisis, the intermediary risk model will continue to develop and result in further benefits. (Subic, 2013)

Within the specialization, banks examining their business models, identify the comparative advantages and disadvantages, and focus on their own strength, which leads to increased efficiency. Economie of scale and increased competition are forcing banks to focus and specialize in those segments in which they are the best, while the rest of the activities is allocated outside the organization. This process is a long-term perspective in the beginning - the value of products in the banking sector generated inside the house (in - house) is up to 50% - 80%, while the trend in the auto industry fell to 25%. Banking may experience a similar scenario as the automotive industry. (Williams, 2012)

3. BANKING SYSTEM OF BOSNIA AND HERZEGOVINA

Banking system of Bosnia and Herzegovina is a subsystem of bank-centric financial system in which it should be emphasized two-tier organization system through the system of Central Bank and commercial banks system.

3.1. Regulatory framework of banking market in Bosnia and Herzegovina

Central Bank of Bosnia and Herzegovina was established on 20 June 1997 by the Central Bank Law which was adopted by the Parliamentary Assembly. Central Bank of Bosnia and

Herzegovina began with its operations on August 11, 1997. With its activities, Central Bank affects on interest rate, level of lending and money supply.

Main goals and tasks of Central Bank of Bosnia and Herzegovina, defined by the Central Bank Law are (www.cbbh.ba, 2014):

1. to achieve and maintain stability of domestic currency (convertible mark) which is issued, with full coverage in freely convertible foreign currency assets, in accordance with arrangement known as a currency board and according to fixed exchange rate (one convertible mark for 0.511292 euros, or one euro for 1.955830 marks);
2. to define and control the implementation of monetary policy of Bosnia and Herzegovina;
3. to keep official foreign reserves and manage them in a safe and profitable way;
4. to maintain adequate payment and settlement systems;
5. to coordinate activities of entities banking agencies, in charge of issuance of bank licenses and bank supervision;
6. to receive deposits from institutions from Bosnia and Herzegovina, and deposits of entities and their public institutions on the basis of a joint decision of entities, as well as deposits of commercial banks;
7. to issue regulations and guidelines for the performance of Central Bank of Bosnia and Herzegovina, within Central Bank Law;
8. to participate in work of international organizations which are working on determining financial and economic stability, and to represent Bosnia and Herzegovina in intergovernmental organizations on monetary policy issues.

Central Bank of Bosnia and Herzegovina is completely independent of Federation of Bosnia and Herzegovina, Republic of Srpska, and any public agency or body, in order to objectively carrying out its tasks. Activities of Central bank are performed by Governing Board of the Central Bank of Bosnia and Herzegovina, Board of CBBH and staff.

Governing Board of the Central Bank is a body in charge of setting monetary policy and control its implementation, organization and strategy of the Central Bank, in accordance with authorizations provided by Central Bank Law. Governing Board of Central Bank consist of five members appointed by the Presidency of Bosnia and Herzegovina, and between its members elected Governor who is also the chairman. Governor is the executive officer responsible for daily operations of Central Bank of Bosnia and Herzegovina.

Management of Central Bank consists of Governor and three Vice Governors (appointed by the Governor, with the approval of the Governing Board) at the request of the Governor, as chief executive officer, conducts operational activities of the Central Bank and harmonize activities of organizational units. Governor, with the approval of Governing Board, appoints Chief Internal Auditor and the Deputy Chief Internal Audit for risk control.

Operations of Central Bank are conducted through its Head Office in Sarajevo, three main units located in Sarajevo, Mostar and Banja Luka, and branch offices in Pale and the Brcko District (www.cbbh.ba, 2014)

In Bosnia and Herzegovina, banking sector is considered as the most organized and most successful segment of the economy. At the end of the nineties, under the leadership of the international community was adopted legislation that established an agency whose purpose is issuance and revocation of banking licenses, bank supervision and regulation of banking market. Unlike other emerging markets, in BiH there is no legal framework for banking operations at the state level or state regulator. Banking Law exists at the entity level and two entity Banking Agency.

In the Federation of Bosnia and Herzegovina was established Federal Banking Agency (FBA) as an independent and autonomous institution for banks supervision and licensing.

FBA Law basic tasks are, in short, related to issuance of licenses for the establishment and operation of banks, adoption of regulatory bylaws, supervising banking operations, microcredit organizations and leasing companies and taking measures in accordance with the Law, including introduction of procedures interim administration and liquidation of banks or initiating bankruptcy of banks (www.fba.ba, 2014).

On the territory of Republic of Srpska is established Banking Agency of Republic of Srpska. Main task of the Agency is to preserve and strengthen stability of the banking system in Republic of Srpska, and to improve its secure, quality and operations regularity.

Main responsibilities of Agency are (www.abrs.ba, 2014):

1. issuing licenses for establishment and operation of banks, license statutory changes, changes in the organizational structure and in type of activities which they are perform;
2. bank supervision – by direct and indirect control and taking appropriate measures in accordance with the law;
3. revocation of licenses to banks;
4. introduction of an interim administration in banks, management and control of process of interim administration and liquidation of banks, submission of applications for bank liquidation procedures;
5. evaluation of compliance with conditions and granting approval for issuance of shares of following emissions;
6. supervising and taking necessary actions regarding prevention of money laundering and financing of terrorist activities relating to the banks;

7. adoption of laws and taking action to ensure the protection of consumers' rights, or natural persons users of financial services in the banking system;
8. issuing and revocation of licenses, permits and approvals to microcredit, savings and loans and other financial organizations and exercise control of their business in accordance with the Agency Law and other laws
9. other responsibilities defined by the Law.

3.2. Market structure of banking sector in Bosnia and Herzegovina

As already mentioned, banking system of Bosnia and Herzegovina is divided into two entities, so therefore will be analyze banking market Federation of Bosnia and Herzegovina, and in particular banking market of Republic of Srpska.

In Federation of Bosnia and Herzegovina, on December 31 2013 operated 17 banks. In the private and predominantly privately owned, there were a total of 16 banks (94.1%), of which six banks were owned by local companies and individuals, while 10 banks were in majority foreign ownership. One bank was in the country and majority state-owned (5.9%).

Table 5: Ownership structure by total capital (000 of Convertible Mark)

Banks	31/12/2011		31/12/2012		31/12/2013		Index	
1	2		3		4		5(3/2)	6(4/3)
State banks	50.499	2%	51.114	2%	51.668	2%	101	101
Private banks	2.029.566	98%	2.166.261	98%	2.269.387	98%	107	105
Total	2.080.065	100%	2.217.375	100%	2.321.056	100%	107	105

Source: Federation of Bosnia and Herzegovina Bank Agency, 2014

At the end of 2013, total capital of banks was amounted to 2.321 million Convertible marks, which represents an increase in the amount of 104 million Convertible marks compared to the previous year. Share of state-owned banks was accounted for 2% of the total capital of 51,668 million Convertible marks compared to 98% of private banks with total capital amounted to 2,269,387 million Convertible marks.

Table 6: Market share of banks by type of ownership

Banks	31/12/2012			31/12/2013		
	Share in total assets	Share in total capital	Number of banks	Share in total assets	Share in total capital	Number of banks
1.With majority state-owned capital	1,4	2,3	1	1,6	2,2	1
1.With majority demestic capital	7,6	10,5	6	7,4	9,2	6
2.With majority foreign private capital	91,0	87,2	11	91,0	88,6	10

Source: Federation of Bosnia and Herzegovina Bank Agency, 2014

Market share of banks with majority foreign capital is accounted for 91%, share of domestic private capital was 7.4%, while the share of banks with majority state capital was only 1.2%.

Table 7: Share of different groups of banks in total assets

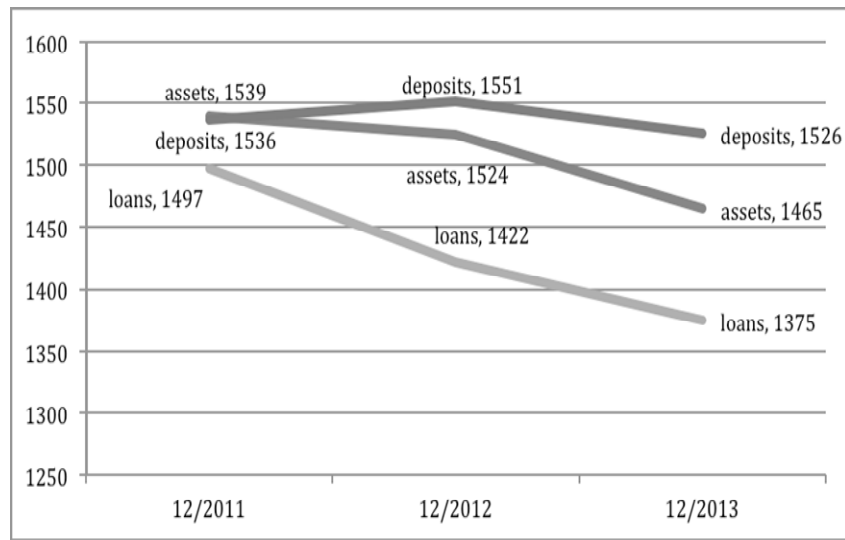
Assets (million of Convertible marks)	31/12/2013			31/12/2013		
	Amount (million of Convertible marks)	Share (%)	Number of banks	Amount (million of Convertible marks)	Share (%)	Number of banks
over 2000	7.476	49,8	2	7.545	48,8	2
1000 to 2000	2.741	18,3	2	2.556	16,5	2
500 to 1000	2.379	15,9	3	3.195	20,7	4
100 to 500	2.280	15,2	9	2.020	13,5	8
Below 100	115	0,8	2	73	0,5	1
Total	14.991	100,0	18	15.449	100,0	17

Source: Federation of Bosnia and Herzegovina Bank Agency, 2014

In Federation of Bosnia and Herzegovina four banks have a share of 65.3% with assets ranging from 1.2 billion to 3.8 billion Convertible marks. Four banks have assets between 500 million and one billion Convertible marks and a market share of 20.7%, while nine banks have assets of less than 500 million and a market share of 14%. Only one bank has assets of less than 100 million and an insignificant percentage of 0.5%. It is estimated that six to seven large banks will in the future control 90% of the market, while the smaller banks will be oriented to local and regional areas.

Concentration of banking market is shown by Harfindahlovim index in assets, loans and deposits

Figure 6: Herfindahl index of concentration in assets, loans and deposits in Federation of Bosnia and Herzegovina



Source: Federation of Bosnia and Herzegovina Bank Agency, 2014

Harfindahl concentration index in 2013 decreased in all three categories (assets, loans and deposits), and at the end of 2013 was amounted 1,465 units for assets, 1,375 units for loans and 1,526 units for deposits, showing a moderate concentration. Specifically, if the value of Harfindahl index is less than 1000, then the market concentration is not present, if the value of the index is between 1000 and 1800, then the market is in moderate concentrations, and if the index value is above 1800, it is an indication of high concentration.

Banking system of Republic of Srpska consist on ten banks with majority private capital and with a dominant share of foreign private capital

Table 8: Equity structure on 31/12/2013 (000 convertible marks)

No .	Bank	Private capital		State-owned capital		Cooperative capital	
		Share	%	Share	%	Share	%
1.	Nova banka a.d. Banja Luka	85.494	99	0	2	291	0
2.	NLB Razvojna banka a.d. B.Luka	62.003	100	0	0	0	0
3.	Hypo Alpe-Adria-Bank a.d. B. Luka	156.936	99	1	0	4	0
4.	UniCredit Bank a.d. Banja Luka	96.980	99	0	0	75	0
5.	Sperbank a.d. B.Luka	38.728	100	0	0	0	0
6.	Bobar banka a.d. Bijeljina	34.548	85	6.000	14	0	0
7.	Komercijalna banka a.d. B.Luka	60.000	100	0	0	0	1
8.	Pavlović International Bank a.d. Bijeljina	18.247	78	5.000	21	128	0
9.	Banka Srpske a.d. Banja Luka	19	0	35.000	99	0	0
10.	MF banka a.d. Banja Luka	26.000	100	0	0	0	0
	TOTAL	578.955	93	46.001	7	498	0

Source: Republic of Srpska Bank Agency, 2014

Table 9 shows bank market share in total assets, capital and deposits, by type of ownership.

Table 9: Bank market share in total assets, capital and deposits (by type of ownership)

Banks	31/12/2012				31/12/2013			
	Share in total assets	Share in total capital	Share in deposits	Number of banks	Share in total assets	Share in total capital	Share in deposits	Number of banks
1. With majority domestic capital	5.7	7.0	5.5	2	11.3	10.7	9.8	3
2. With majority foreign private capital	94.3	93.0	94.5	8	88.7	89.3	90.2	7

Source: Republic of Srpska Bank Agency, 2014

Seven banks with majority foreign private capital have a share around 89% of the banking market of Republic of Serbian, measured by share of assets and deposits, and 90.2% measured by share of capital. Three banks with majority domestic private capital have a share in total assets and deposits of about 11%, and its share in the total capital of 9.8%.

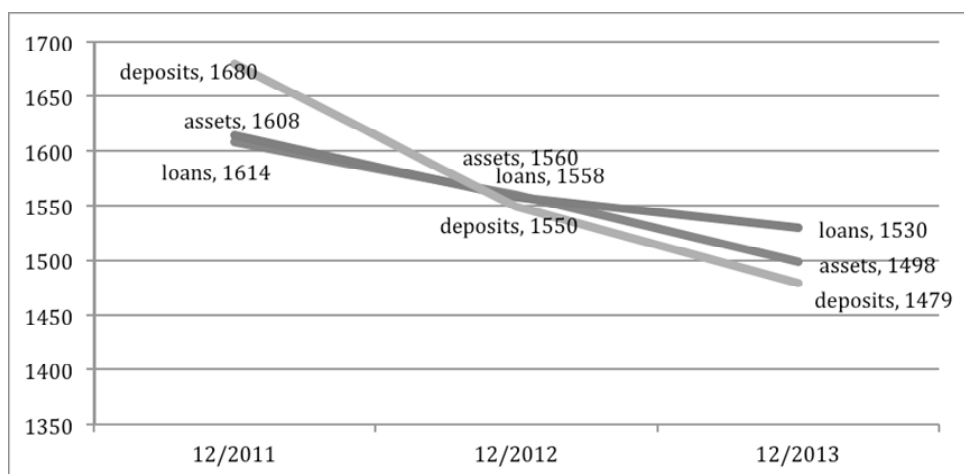
Table 10: Participation of each groups of banks in total assets (000 of convertible marks)

ASSET (million of convertible marks.)	31/12/2012			31/12/2014		
	Amount	Share %	Number of banks	Amount	Share %	Number of banks
Over 500	5.436.506	83	5	5.744.816	81	5
300 to 500	-	0	-	352.059	5	1
150 to 300	1.037.506	16	4	976.746	14	4
Under 150	106.147	1	1	-	0	-
TOTAL:	6.580.159	100	10	7.073.621	100	10

Source: Republic of Srpska Bank Agency, 2014

In Republic of Srpska market five banks have assets of over 500 million of convertible marks and with a market share of 81%. One bank have assets of 300-500 million with a market share of 5%. This bank is followed by four banks with assets of 150 to 300,000,000 convertible marks and a market share of 4%. This group can barely follow large banks, especially in terms of long-term funds and the possibility of increasing business.

Figure 7: Herfindahl index of concentration in assets, loans and deposits in Republic of Srpska



Source: Republic of Srpska Bank Agency, 2014

Herfindahl index of concentration in 2013 had a decreasing trend in all three categories (assets, loans and deposits), and at the end of 2013 was amounted to 1,498 units for assets, 1,479 units for loans and 1,530 units for deposits, showing a moderate concentration, which represents reduction in contrast from the previous year when the HHI index showed a high concentration.

4. ADJUSTMENT OF BANKING SYSTEM OF BOSNIA AND HERZEGOVINA TO EU STANDARDS

Bosnia and Herzegovina is using currency board as a currency regime. Currency board is an arrangement with a fixed exchange rate, which is linked to currency "anchor", gold or even a basket of currencies, where all the money in circulation can be freely convertible into reserve currency and where basic functions of the central bank is clearly defined by central bank law (Kozaric, 2007). Main characteristic of currency board is its simplicity because it is define by precise rules.

Main characteristics of the currency board are (Kozaric, 2007):

- a fixed exchange rate to the reserve currency;
- automatic convertibility at the request of the holder of the domestic currency;
- prohibition of granting loans to banks or state bodies and institutions;
- legal regulation (usually by a special law).

In Bosnia and Herzegovina basic rules of currency board are incorporated into the Central Bank of Bosnia and Herzegovina Law.

Exchange rate of the national currency (convertible mark), is fixed to euro as a reserve or anchor currency, in proportion of 1 EUR = 1.955830 convertible mark. Exchange rate is a fixed nominal variable which influences on public inflation expectations, ensuring price stability in economy. Full convertibility of domestic currency to reserve currency - euro and vice versa, and thus, indirectly into other foreign currencies is guaranteed. CBBH issuing and withdrawing money buying and selling convertible marks in exchange for foreign currencies. Transactions of purchase and selling of convertible mark are done by CBBH with commercial banks and government institutions which have deposits at Central Bank. Other economic agents receive cash in local currency through commercial banks. CBBiH net foreign exchange reserves must at any time fully cover its monetary liabilities in convertible marks, which include all bills and coins in circulation, balance accounts of reserve of commercial banks at Central Bank and other demand deposits at Central Bank. CBBH has no possibility to monetise fiscal deficits or lending possibility of economic agents, and therefore does not serve as ultimate lender to resolve problems related to liquidity of commercial banks.

CBBH does not appear as a supervisor of banking system, or as a lender of last instance and level of mandatory reserves is only instrument that CBBH has available. But so far there have been many secondary objectives which CBBH tried to achieve with goal of ensuring parity exchange rate stability and to all targets operated using required reserves (Krstic, 2007, CBBH, 2014):

- Inflation rate was limited to 4% per year in 1999, as a result of implementation of CBBiH monetary policy;
- In 2003, CBBiH first time took a measure to reduce reserve requirement rate from 10% to 5%, and deposit base to which it expanded, in order to slow down rapid growth of bank loans, especially to household sector in 2002 and 2003. This illustrates two very important facts. Firstly, it indicates that banking sector has been improved so that its operations entail macroeconomic consequences for Bosnia and Herzegovina. Second, it shows that CBBiH is no longer a "currency board", but also behaves as a "central bank". This natural course of events will continue. However, CBBiH will make sure that none of extended functions is not

in conflict with its fundamental role, i.e. maintaining integrity of currency board of CBBH;

- Since September 1, 2004, CBBiH increased reserve requirement rate from 5% to 7.5% and since October 1 to 10%. This change is occurred as a result of high credit growth rates and, consequently, high current account deficit;
- After analysis of credit growth and its effects on deficit of foreign trade (70% of loans are dedicated for financing of imports), CBBH increased mandatory reserve rate from 10% to 15% at the beginning of December 2005;
- Due credit growth that occurred during 2007, CBBH increased reserve requirement rate to 18% , since January 1, 2008;
- A significant slowdown of credit activity caused by global financial crisis in late 2008 and early 2009, forcing Central Bank to reduce reserve requirement rate from 18% to 14% at the end of 2008. From January 1, 2009, differentiated rate of required reserves to is started to apply, and for all liabilities with maturity up to one year rate stood at 14%, while for liabilities with a maturity of one year began to apply rate of 10%, which, in April of same year, was reduced to 7%.
- From February 1, 2011, started to apply a reduced rate of 10% on base with maturities of less than one year, while on basis of which for maturity of over one year, rate stood at 7%.

Currency board arrangement in Bosnia and Herzegovina is sustainable in long term, provided that establishment of an efficient control on the growth of wages in the public sector which was detected in recent years. In fact, public sector wages are growing faster than labor productivity due to which public sector is the main driver of potential inflationary pressure and cause weakening of competitiveness of BiH economy, which is not negligible, due to the fact that 35% of employees working in public sector. (Krstic. 2007).

Currency board model represents a good basis for future integration. Bosnia and Herzegovina as a country with a currency board, with euro currency as an anchor sees its future in the European Union, and in the future Euroisation is imposed as a final solution.

Regulation of EU banking system is based on rules of Basel program, starting with the Basel I program that was established in 1992 until 2010, and Basel III. Banking market in Bosnia and Herzegovina still operates under the framework of Basel I. Minimum capital adequacy ratio is prescribed by law and is 12% and is higher than in EU countries.

Table 11: Capital adequacy

Year	2009	2010	2011	2012	2013
Capital adequacy in %	16.1	16.2	17.1	17.0	17.7
Adequacy ratio above required level	4.2	4.2	5.1	5.0	5.7

Source: Central bank of Bosnia and Herzegovina, 2014

Precisely because of high minimum capital adequacy ratio of 12%, banking system of Bosnia and Herzegovina was evaded of more serious consequences of global economic and financial events. However, Bosnia and Herzegovina tends to EU membership and is obligatory until that moment make arrangements for adoption of Basel II program. Banking Agency of Federation of Bosnia and Herzegovina and Banking Agency of Republic of Srpska and the BiH Central Bank adopted in 2009 a document entitled "Strategy for implementation an International Agreement on capital measurement and capital standards" which defines the ways of adopting and implementing Basel II standards, whose primary purpose is to strengthen capital requirements of banks, increase liquidity and strengthen banking system. Adjustment to EU market demands implementation of reform measures and the introduction of new standards in banking. Adoption of Basel III programs requires a long, gradual and detailed procedure of harmonization of domestic regulation and supervision with international standards. First of all, it is necessary to harmonize entity laws and by laws of banking agencies and Central Bank basic settings with international standards introduced by the Basel Committee.

Also, it should be noted that banking market of Bosnia and Herzegovina is characterized by a polarization, and division of markets through legislation passed separately at the entity level, which leads to problems of legal regulation, that raises question of law harmonization between two entity banking agencies.

4. CONCLUSION

Middle and Eastern Europe banking sectors are not sufficiently competitive in comparison with developed EU markets. Also, these countries must open their markets of goods, services and capital and insure their free movement, which will make them more involved in global economic flows. West-European markets are already mature and have a high degree of concentration.

Integration of banking system in EU Internal banking market have an impact on the performance of banking system of candidate countries, and thus on their activities. Entering into EU internal market raises the question of competitiveness of banks and whole economy and their effectiveness and compliance with the prerequisites of integration. Integration also opens question of conditions and operations of banks in new environment which is result of constant process of adaptation to EU institutional and legal framework in the field of banking.

It is certainly necessary to create conditions for the integration by adapting administrative structures through the implementation of regulations with the support of appropriate administrative and judicial structures, which requires full engagement of state and entity institutions, NGOs and whole society. High quality and timely adjustment of banking system in Bosnia and Herzegovina to EU standards, through institutional and organizational reforms, can provide certain benefits and reduce costs for users and providers of banking services and the entire banking sector.

REFERENCES

- Doyle, C., Weale, M. 2007 Do We Really Want an Independent Central Bank?, Oxford Review of Economic Policy; vol. 10
- European Banking Federation, The EBF Banking Sector Statistics Database 2011
- Kristić, I. 2007, Održivost aranžmana valutnog odbora u BiH, Sarajevo, Direkcija za ekonomsko planiranje Vijeća ministara BiH
- Kostašnjak, P. 2010. „Banke će morati utrošiti svoje rezerve“, Vjesnik, Zagreb
- Kozarić, K..2007, Modeli monetarne politike sa osvrtom na valutni odbor Bosne i Hercegovine, Sarajevo, Centralna Banka Bosne i Hercegovine
- Levine, R. 1997, Financial Development and Economic Growth: Views and Agenda, Journal of Economic Literature Vol. XXXV, pp. 688-726.

Smirčić, I. 2009. „Domaće banke nude dvostruko više kamate nego one u EU“, Vjesnik, Zagreb

Van Dijk, D. 2010, ZEPHYR M&A Report

Vujičić, B. 2003. „Europska monetarna unija i Hrvatska“, str.74., Masmedia, Zagreb

www.abrs.ba

www.cbbh.ba

www.ecb.org,

www.fba.ba

www.hnb.hr

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IMPLEMENTATION OF MEASURES FOR PUBLIC TRANSPORT SYSTEM QUALITY IMPROVEMENT FROM THE ECONOMICAL FEASIBILITY STANDPOINT

ABSTRACT

Increased capacity occupancy leads to traffic flow congestion and an increase in travel times. The aforementioned problem with traffic congestion is particularly expressed in urban areas where possibilities for physical increment of capacity are limited or impossible. One approach of solving this problem is significant usage of public transport, which is achieved by applying measures that can improve the quality of public transport. Within this research, review and description of listed measures will be given, with description of implementation possibilities in urban traffic systems. Economic feasibility and profitability of previously listed measures will also be presented from the standpoint of multiple level comparison – from the limited (local) implementation to comprehensive implementation (whole public transport network).

Keywords: economic feasibility, measures of public transport system quality improvement, multiple level implementation

JEL classification: R4

1. INTRODUCTION

Increased capacity occupancy leads to traffic flow congestion and in travel times increment. The problem with traffic congestion is particularly expressed in urban areas where possibilities for physical increment of capacity are limited or impossible. One approach of solving this problem is significant usage of public transport. Public transport (or mass transport) is defined as a set of traffic services which are accessible to everyone as an alternative transport mode in relation to personal modes of transport (personal cars, etc.).

To encourage the greater use of the public transport systems, certain conditions must be satisfied [1]:

- reliability – there should not be significant deviations from defined timetables,
- economic justification – related to personal transport, public transport service should be even or cheaper,
- speed – public transport should be comparable or more efficient than private transport,
- ease of usage – accessibility for all user categories should be provided,
- comfort – public transport should enable minimal comfort parameters.

To meet those conditions it is necessary to apply certain measures on the transport network, or on parts of the public transport network. With the systematic analysis and with the proper selection of measures (regarding specific needs of observed network) it is possible to improve the quality of public transport service. In the professional literature and in applicative point of view, measures for improvement of public transport quality service can be divided in four categories [2], [3]:

1. roadway improvement – simplest kind of measure which includes minor operations on roads, relocation of PT stops, new traffic regulations, etc.,
2. adaptive traffic control – it includes PT priority strategies on signalized intersections along public transport network,
3. public transport system improvement – improvements in PT management center, improved PT vehicle design, etc.,
4. administrative measures – proof of payment, congestion charging, limitations in delivery times and locations, reserved parking zones, etc.

According to aforementioned system design needs and measures for PT service quality improvement, it is possible to define certain benefits of such as improved system [4]:

- traffic congestion reduction – increase in transport possibilities regarding personal transport,
- reduction of operational PT travel times throughout urban traffic network,
- environmental benefits – reduction of emission of gases, etc.

2. MEASURES FOR IMPROVEMENT OF PUBLIC TRANSPORT SYSTEM QUALITY

In the last two decades in urban areas significant increase in traffic volume is detected, resulting in urban traffic system quality reduction. One approach of defined problem is significant usage of public transport services with the main goal of reduction in number of

personal vehicles in urban zones. It is necessary to improve the quality of public transport service with implementation of some measures.

Office of Transportation in the State of Oregon, USA, released extensive analysis of public transport system condition in USA and Canada [5] according to which 31% to 39% of the total travel times of PT vehicles is wasted on travel, while the rest includes waiting time at stops, intersections and traffic delays. According to their analysis, 27% of the total travel time involves waiting on signalized intersections.

In addition to before mentioned measure classification, local authorities of three German cities (Krefeld, Wuppertal and Buchum) developed guidelines for improvement of PT service quality [6]. The main goal of the guidelines is recognition of public transport service benefits and positive consequences.

According to aforementioned analysis, measures for improvement of PT system quality were divided on external measures (which are not in the domain of PT operator), and measures which can be performed by PT operator. Division of measures is described in

Table 1 Division of measures according to types of action

external measures
<ul style="list-style-type: none">- changes in pavement/road configuration- changes in signal plans on signalized intersections- right turn restrictions for personal vehicles- parking restrictions along the PT routes- regulation of delivery times and locations
measures performed by PT operator
<ul style="list-style-type: none">- timetable adjustments- synchronized time headway between PT vehicles on the same route- curb extensions- relocation of PT stops- proof of payment methods- enhanced PT vehicle design- enhanced traveler information system

Next step (after implementation of selected measures) according to mentioned guidelines is evaluation procedure based on Cost Benefit Analysis (CBA). The procedure is defined so that certain measures of similar characters can be compared (assuming that financial funds are limited).

After described documents and studies, and partial measure classification, full classification of measures is defined in next section.

2.1. Roadway infrastructure improvements

Roadway infrastructure improvements are the simplest measure of PT service quality improvement which includes smaller changes in roadway form (construction changes, changes in traffic regulation, etc.) in order to increase operating performance of public

transport (PT operative speed increase, reduction in total PT travel times, etc.). Roadway improvements include the following measures:

- location/relocation of PT stops,
- boarding islands,
- curb extensions,
- right turn limitations (for personal vehicles),
- reserved PT lanes.

2.2. Public transport system improvement

Measures for public transport system improvement are physical, ICT and institutional changes which include the whole PT system in addition to enhance operative PT vehicle speed and reduction in vehicle delays. Since such measures should be implemented to the entire PT network, their implementation is not simple and easily enforceable (for economic and institutional issues). However, with careful planning their introduction in the long term development of public transport can be very effective. Public transport system improvement measures include:

- definition and implementation of PT management centre,
- enhanced payment of PT services,
- enhanced PT vehicle design.

2.3. Administrative measures

Administrative measures include only changes in operative PT system work and also in traffic regulations on the parts of the urban network where PT vehicles operate. In combination with other defined measures, administrative measures can be very effective, but independently they are not perceived as effective type of measures. Administrative measures include:

- congestion charging in urban zones,
- regulation of delivery times and locations,
- parking restrictions along the PT routes.

2.4. Adaptive traffic control on signalized intersections

Delays of PT vehicles on signalized intersections make up circa 50% of all delays caused by interaction between PT vehicles and personal vehicles. Adaptive traffic control includes green lights on signalized intersections whenever is possible. According to the equipment possibilities and traffic situation along the PT corridor, it is possible to implement different measures:

- **passive PT priority strategies** – correction of green light duration, phase splitting, cycle duration correction, coordination of PT timetables, etc.
- **active PT priority strategies** – extension of green time duration, red truncation/early green technique, additional PT phase, selective strategies, etc.

3. LEVELS OF MANAGEMENT AND IMPLEMENTATION OF MEASURES FOR PT QUALITY IMPROVEMENT

In order to understand the concept of adaptive traffic control, the details concerning the basic operational and implementation concepts of signalized intersections are described below. Concepts of traffic control on signalized intersections in urban areas are divided by level of management [7], [8]:

- **single intersection management** – techniques for traffic control are implemented on single intersection, not taking into account the influence of adjacent intersections and traffic that is directed to the observed intersection
- **small space intersection management** – traffic control is limited on two adjacent intersections with relatively small distance between them. Only one signal controller is used for both intersections
- **arterial corridor management** – coordination of signal controllers on strategic corridors of urban network is enabled where traffic volumes are high
- **closed network management** – traffic control is derived through coordination and interaction of group of signal controllers on a part of urban traffic network, and determined number of signal controllers are perceived as isolated traffic network
- **area wide traffic management** – entire urban traffic network or the major part of it is observed as one traffic system. Hierarchical derivation of traffic control is possible (as to say, coordination of existing levels of traffic control/management).

Depending on the level of management, architecture and operation of control systems is defined. For management of arterial corridors and closed networks, there are two basic ways of coordination: distributed control systems and centralized control systems. For full management of wider area, or the entire network, centralized and distributed architecture is also used.

According to Nash and Sylvia [4], four different levels for measure implementation are defined, ranging from limited application of individual improvements to comprehensive application of full range of improvement types throughout the network. Defined implementation levels are shown in Table 2.

Table 2 Implementation levels of defined measures

Level	Improvements
Limited	Specific Locations
Route Level	Entire PT route
Areawide	Specific points of PT network
Comprehensive	All Network and System Routes

Source:

Limited implementation level – consists of implementation of measures individually in various locations in the PT network. It includes individual roadway improvements or changes in traffic regulations for helping to speed up PT service. Limited implementation is not effective, but most individual improvements cause only a small reduction in transit vehicle delay so elimination of single significant sources can be helpful to particular route operations.

Route level implementation – consists of implementation of measures along PT route or segment and include building exclusive PT lanes (reserved lanes) and providing PT priority on signalized intersections along the route or segment.

Areawide implementation – consist of implementation of defined measures in a particular area of PT network. Some examples are construction of transit malls and introduction of neighborhood traffic calming for the goal of improvement PT service.

Comprehensive implementation – consists of two main aspects: implementation of the basic PT priority improvements to all parts of the PT network, and implementation of measures improvement and operating changes that makes PT network faster and/or more efficient (at system level changes). Comprehensive improvements include citywide traffic signal control coordination and programs, PT operations and dispatching centres, improvement of PT service payment, etc. The comprehensive approach is the most effective way for PT service improvement, but also, it's the most expensive and the most lasting one.

Also, according to Mid-West Area Strategic Plan – Public Transport Feasibility Study, Limerick City, UK, 2012., main group of growth scenarios are defined for the purpose of

strategy development and the modelling of identified public transport infrastructure and service measures as follows:

1. **"do minimum"** – growth of PT network with no changes to the current transport provision which basically doesn't include any changes in PT network at all
2. **"do something" (low cost)** – this scenario uses the same population projections as first scenario ("do minimum"), but includes improvements to the PT network according to population growth and growth of the road network
3. **"do something" (high cost)** – it is an extension of scenario 2 which uses the same population projections as scenarios 1 and 2, but has been developed to achieve a significant growth in the use of more sustainable modes of PT network.

As described before, dynamic PT priority along the PT route is one of the most efficient measure for PT quality improvement. The main purpose of PT priority on signalized intersections is to provide high capacity networks emulating the advantages of light rail systems but at lower costs. PT priority scheme has a number of advantages, but also and disadvantages:

Advantages:

- lower capital costs than light rail
- new image of reliable and modern service
- high capacity of PT systems with less operating vehicles

Disadvantages:

- suited for high concentration urban areas with great number of signalized intersections
- can be costly if extensive infrastructure is required
- cooperation between PT operators, department of transport and other stakeholders is required.

Also, some difficulties regarding PT priority techniques implementation are defined:

- low technical competence and lack of expertise on PT priority implementation
- lack of support or direct opposition by different agencies and departments
- difficulties of coordination between agencies and departments
- pressure and resistance for changes by road (automobile) users
- low public understanding about the benefits of PT priority techniques.

In the City of Zagreb, Zagreb Electric Tramway (ZET) is the operator of public transport services. According to aforementioned levels of implementation, and their strategic development plans, the improvement of public transport would be divided in four main steps:

1. development of quality improvement model,
2. aquisition and installation of equipment, driver and operator education,
3. PT vehicle and infrastructure equipment,
4. second level PT vehicle and infrastrucutre equipment and driver education.

According to strategic plans, with the completion of this four year layout, the quality of PT service should be drastically improved, the price of service should be reduced by 0.4€ and/or PT capacity should be increased by 12%. Also, PT vehicle operation speed should be increased to 18km/h, and electric energy consupcion should be reduced for 6%.

4. CONCLUSION

In the last two decades in urban areas significant increase in traffic volume is detected, resulting in urban traffic system quality reduction. One approach of solving this problem is significant usage of public transport, which is achieved by applying measures that can improve the quality of public transport. Measures for improvement of PT system quality were divided on external measures (which are not in the domain of PT operator), and measures which can be performed by PT operator.

Depending on the level of management, architecture and operation of control systems is defined. For management of arterial corridors and closed networks, there are two basic ways of coordination: distributed control systems and centralized control systems. Four different levels for measure implementation are defined: limited implementation level, route level implementation, areawide implementation and comprehensive implemenatation. In wider city with greater traffic demand and with implemented and working public transport system, it is hard to decide which strategy and level of implementation is the most suitable one. New technologies and public transport solutions should be implemented on test corridor and/or small amount of PT network to calibrate and validate the effects of selected technology, and then gradually increase the scope and portion of PT network. Also, increment of PT service quality should be done in collaboration with city authorities (mostly traffic and urban departments) to achieve the true effect of implementation of measures for public transport system quality increment.

REFERENCES

Iles, R.: Public Transport in Developing Countries, Elsevier Ltd., 2005.

- Vujic, M.: Dynamic Priority Systems for Public Transport in Urban Automatic Traffic Control, PhD Thesis, University of Zagreb, Faculty of Transport and Traffic Sciences, Zagreb, 2013.
- Ekeila, W.: Dynamic Transit Signal Priority – Master of Applied Science, University of Sharjah, 2002.
- Nash, B., A., Sylvia, R.: Implementation of Zurich's Transit Priority Program, Mineta Transportation Institute, San Jose State University, 2001.
- City of Portland, Oregon, Office of Transportation: Transit Preferential Streets Program, Final Report, 1997.
- Fischer, H., Grund, R., Lindner, P.: Leitfaden zur ÖPNV-Beschleunigung, SNV Studiengesellschaft Nahverkehr, 1988.
- Dunn Engineering Associates: Traffic Control Systems Handbook, Federal Highway Administration, Office of Transportation Management, 2005.
- Hall, C.H.: A Framework for Evaluation and Design of an Integrated Public Transport System, Linköpings Universitet, Institute of Technology, Licentiate Thesis No. 1257, Norrköping, 2006.

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IMPACT OF REAL EFFECTIVE RATE ON EXPORT COMPETITIVENESS OF GERMAN MANUFACTURING INDUSTRY

ABSTRACT:

The goal of this research is to analyze the impact of the real effective exchange rate on Germanys manufacturing industry export activity. The research methodology is based on the implementation of the dynamic panel data analysis - two step GMM estimator. The subject of the research includes manufacturing of Germany and its major sectors and areas. For analytical purposes, comparisons of trends (real effective) exchange rate, the value of production, the share of exports in the imports and export activities of German manufacturing industry were also used. The main results of the research provide an answer about the significance of the impact of the real effective exchange rate on export competitiveness of German manufacturing industry in the period from 2000 until 2008 and coming up with recommendations, suggestions for reaching a higher level of export competitiveness. The main conclusion of the research is the need to create conditions and defining measures to increase export activities of German manufacturing.

Key words: German manufacturing industry, system GMM estimator, dynamic panel estimator, Export competitiveness, real effective exchange rate

JEL classification: L60, F30, F20

1. INTRODUCTION

Manufacturing is a vital and strategically significant industrial activity of the European Union. Manufacturing also occupies the position of one of the main generators of employment, added value and technological achievements. German manufacturing industry is one of the key industries that drives the German economy, but also the economy of the European Union.

Before the global economic crisis, European and German manufacturing industry registered very satisfactory results. Market liberalization, reduction of tariff barriers, the opening of foreign markets, monetary and fiscal stability and growth were one of the initiators of the industrial activities of the European and German manufacturing activity. However, global economic crisis from year 2009 had serious repercussions in the manufacturing of the European Union, and the German manufacturing industry. Contraction in demand, investment, loss of market share, world foreign policy, strengthening the manufacturing activities of competing countries, an increase in unemployment are just some of the implications which seriously affected the production and trade flows.

After a certain period, the European economy (and manufacturing industry) began to recover. Not long after, the Euro zone faced some serious problems. Accumulated monetary and fiscal undisciplined policies of individual Member states of the European Union had further shaken the stability of the euro currency as the world's major currency. Moreover, it brought the future of the Euro zone into question.

On the other hand, the question is while someone is losing, is someone else winning? Can the real depreciation really help the world renowned exporters such as Germany's manufacturing industry, while other countries like Greece, Italy, Portugal, Spain record unfavorable and discouraging trends of their economic and foreign trade activities? It can be assumed that Germany with a high level of productivity, independence, technology, and an experienced and big market benefits from the European market environment. Alternatively, small, import-dependent, (former) transition and other countries with uncontrolled high ratio of external debt, dependence on intermediary goods and energy are forced to face the negative macroeconomic and microeconomic impacts.

In this paper, the fundamental hypothesis is that impact of the real effective exchange rate and other relevant variables on the export competitiveness of selected sectors and sub-sectors of German manufacturing industry can be proved using dynamic panel data analysis. The fundamental goal of this research is to systematically investigate the movement of the exchange rate, production and export activities of German manufacturing industry, then analyze measure and objectively assess the impact of the real effective exchange rate on export competitiveness of manufacturing industries of Germany and to propose measures to strengthen export competitiveness of German manufacturing industry. The main contribution of this paper is providing main conclusions about real exchange rate and other factor's activities on export competitiveness of basic manufacturing subsectors of Germany.

The paper consists of four parts. After the introduction, the second part of the paper presents current research of real effective exchange rate and export competitiveness. The third section covers the methodological framework of the research. The fourth part consists of the analytical framework and the results of the export competitiveness based on a dynamic panel analysis of the impact of the real effective exchange rate and other key variables of the model. At the end of the paper concluding remarks, suggestions and recommendations are given.

2. PREVIOUS RESEARCH

A certain number of studies have examined the role of relative exchange rate and its volatility on the export competitiveness of the countries studied. We should note that the literature contains divided opinions which will be discussed in the next chapter.

Smith (2004) proposes the use of the real exchange rate as a general indicator of competitiveness. The real effective exchange rate is calculated by multiplying the nominal exchange rate with the ratio of domestic and foreign prices. Under his empirical study, author noted greater elasticity of exports of New Zealand, which is higher compared to the real effective exchange rate of the New Zealand dollar.

In support of this we can consider research done by Tandrayen-Ragoobur and Emamy (2011), which used of the real exchange rate in measuring export competitiveness. The empirical results based on the ARDL analysis showed that real exports are cointegrated with foreign economic activity, real effective exchange rate and volatility of real exchange rate. Their findings reveal that exchange rate volatility has a positive and significant short run effect on exports, whilst in the long run; volatility adversely affects the Mauritian exports.

Additionally, Bayoumi (1999) found a positive effect of depreciation on export of 21 industrial economies in the period of four years. Thapa (2005) analyzed the economy of Nepal and thereby confirmed the significant impact of the depreciation of the real exchange rate on export competitiveness. Stučka (2004) estimates ongoing devaluation which can lead to elastic improvement of the trade balance.

Alternatively, Abeyisnghe and Yeok (1998) suggested a weaker impact of the real exchange rate which is especially pronounced in the case of smaller economies whose export shows a high dependence on imports of intermediate goods. Their analysis of the economy of Singapore shows relatively weak impact of currency appreciation due to the reduction in import prices by reducing production costs. Similar findings were obtained by Fang and Miller (2004) which consider that depreciation does not significantly affect export as foreign exchange risk has certain implications for the export activity of Singapore. They propose to stabilize the exchange rate, and to put the depreciation policy into the background. Furthermore, Fang, Lai and Miller (2005) studied the relationship between exchange rate depreciation and exports within 8 Asian countries. At the same time, they show the weak impact of the depreciation of the exchange rate on export growth.

A large number of studies are devoted to the observation of exchange rate volatility and analysis of the impact of currency on the foreign flows. Cushman (1983, 1986, 1988), Akhtar and Hilton (1984), Kenen and Rodrick (1986), Thursby and Thursby (1987), De Grauwe (1988), and Pere Steinherr (1986), Koray and Lastrapes (1989); and Arize (1995) support the hypothesis where the volatility of the exchange rate tends to decrease the volume of international trade. In support of this statement, there are empirical researches conducted by Bahmani-Oskooee (1984, 1986); Coesa (1981), and Rana (1983) that

highlight the impact of exchange rate volatility on export growth in the observed developed countries. On the other hand, Hooper and Kohlhagen (1978), Gotur (1985), Bailey et al. (1987) and Asseery and Peel (1991) point to the absence of the impact of currency volatility on international trade.

3. METHODOLOGY

The methodology of implemented dynamic panel is based on the characteristics and dynamics of the concept of competitiveness. Proof can be found in the research of most of the relevant studies (Davies and Geroski, 1997; Hay and Liu, 1997; Halpern and Koros, 2001; Skrzypacz and Mitchell, 2005; Borbely, 2007; Stojčić et al., 2011; Stojčić and Hashi, 2011; Stojčić et al. 2012) that emphasize the dynamic dimension of competitiveness. Since there is evidence of possible existence of an extended period of realization and incomplete information (export) competitiveness can be realistically measured by including lagged variables of the model.

In other words, dynamic concept (export) competitiveness confirms the importance of choosing the estimator of dynamic panel data analysis as a reference model through inclusion of lagged (time-shifted) variables. According to Harris and Moffat (2011) there may be the effect of so-called or "learning by export", through knowledge of export-oriented enterprises on foreign technology and knowledge. Such effects can produce results like economies of scale and ability to cover fixed costs. It is important to emphasize that this can be one of the potential causes of the problem of causality.

The mechanism by which the "learning by exporting" gives access to knowledge is generally described through considerations of Grossman and Helpman (1991, 1993). Specifically, businesses based on export can generate knowledge in interaction with foreign customers or through their exposure to the inputs of knowledge that are not available to other companies, which are oriented to the domestic market.

A more detailed analysis of the effect of "learning by exporting" (Bernard and Jensen, 1999) found that firms based on export achieve a higher level of productivity in relation to companies focused on the domestic market. In detail, Bernard and Jensen considered (1999) that "learning by exporting" effect is especially pronounced within the entry of new companies into the market, while Kraay (2002) holds that the effects of "learning by exporting" most often can be seen in the case of more experienced exporters whose transformation of knowledge requires some time.

Bernard and Jansen (1999) conclude that while an increased likelihood of survival in the market is a major advantage for exporters. The authors added that while sales in foreign markets can be "broken" or "strengthen" the company, precisely because it is evident that the competition is tougher in relation to domestic competition. Additionally, the arguments

in favor of the effect of "learning by exporting" can be found in higher wages, higher sales growth and productivity, diversification of risk, etc (Richardson and Rindal, 1995).

If we consider a dynamic model, endogenous and measured errors can be eliminated by using instrumental variables, where time-lags of independent variables are used as the instruments. Effective solution to the problem of endogeneity is the use of Arellano - Bond (1991) GMM estimator proposed by Holtz-Eakin et. al (1988), Mileva (2007), Stojčić et al. (2011), and Stojčić Hashi, (2011) Stojčić et al. (2012). These endogenous variables are predetermined and uncorrelated with the error term. Consequently, in the framework of the analysis, a system estimator developed by Arellano and Boveri (1995) and Blundell and Bond (1998) is used.

Getting the most appropriate framework assessment in the context of the aforementioned problems is a dynamic panel (Arellano and Bond, 1991; Arellano and Boveri, 1995, Blundell and Bond, 1998) which represents a frequently used method of group GMM estimators. Methods uniqueness is reflected in unbiased and consistent estimates of instrumental variables.

Based on GMM methods two forms of dynamic assessors are developed; differentiated GMM estimator (Arellano and Bond, 1991) and system GMM estimator (Arellano and Boveri, 1995, Blundell and Bond, 1998).

Dynamic model with only one time-shifted (lagged) variable can be shown as follows:

$$y_{it} = \beta y_{it-1} + u_i + v_{it}, |\beta| < 1$$

where y_{it} value of the dependent variable i in period t ; y_{t-1} is the dependent variable displacement (lag) for one period; u_i are time-invariant individual effects, and v_{it} are idiosyncratic errors. The individual time-invariant effects are by definition correlated with the past realisations of the dependent variable, which leads to a problem of endogeneity. However, in the absence of serial correlation in idiosyncratic errors, the lagged differences or lagged levels of the endogenous variable can be used as its instruments (Arellano and Bond, 1991, Greene, 2002; Stojčić et al. 2011; Stojčić and Hashi, 2011; Stojčić et al., 2012).

On the other hand, differentiated GMM estimator solves the problem of time-invariant effects by transformation of the equation. Transformed model is shown by the following equation:

$$y_{it} - y_{it-1} = \beta y_{it-1} - \beta y_{it-2} + v_{it} - v_{it-1}, |\beta| < 1$$

Since the time-invariant effects are removed, the problem of endogeneity remains due to the presence of correlation between the lagged variables and random errors, which is especially evident in the variables y_{it-1} and v_{it-1} (Greene, 2002, p 309). However, in light of the assumption of absence of serial correlation in the original random error, Arellano and Bond (1991) propose the use of the difference ($y_{it-2} - y_{it-3}$) and level (y_{it-2}) endogenous

variable with a time shift (lag) as instruments, which would obtain efficient estimator that takes into account all available moment restrictions. In accordance with the opinion of Green (2002, p 309), instruments with oversized sliding imply a lack of information on subsequent changes.

Moreover, inconsistency and ineffectiveness differentiated GMM estimators in cases where the time lag is too close to the level of a random walk (Blundell and Bond, 1998; Roodman, 2009b) has been determined. Alternatively, the system GMM estimator reveals advantages in such a case (Arellano and Boveri, 1995, Blundell and Bond, 1998). Specifically, the data calculated has twice the number of observations, some for untransformed and other for the transformed equations. Inclusion of untransformed equation can be justified in the previous updates.

Specifically, previous change of the current levels may be sooner predicted than the changes in future levels when the time lag is too close to a random walk. Furthermore, the system assessor is seen as an equation sits the same linear relationship between equal coefficients that are believed to have applied to untransformed and transformed variables (Roodman, 2009b). An additional advantage of the system in relation to the differentiated GMM estimator lies in the possibility to include time-invariant variables that differ by fixed effects. Ultimately, adding instruments of transformed to untransformed equations, system estimator provides greater volume of information used in the assessment and at the same time increases efficiency.

Despite its many advantages compared to the differentiated assessors, system GMM estimator has its drawbacks. In most cases, the sensitivity on the number of instruments and unconfirmed initial assumptions are underlined. Roodman (2009a) notes that a large number of tools can make the diagnostics (e.g. Hansen test) unreliable in the sense of rejecting the null hypothesis of validity of instruments.

It is believed that there is no optimum number of instruments used in the assessment, but the prevailing rule is that their number does not exceed the number of groups (time series data). Also, the recognized problem is the condition that the initial assumptions must be confirmed. The coefficient of lagged dependent variable must have an absolute value less than 1 to make the process converging, and as such should not be correlated to the time-fixed effects.

Dynamic estimators can be used by applying the procedure in one step and two-step procedure. GMM estimator in one step implies on compromise assumptions (such as the homoscedasticity) of weighted matrix. However, the appraiser, as such, does not show the robustness to heteroscedasticity and cross-correlations. Accordingly, the procedure of the robust estimator involves an extra step where you use the residuals from the first step to identify the optimal weighted matrix. The matrix is an integral part of GMM estimators that shows robustness to heteroscedasticity and cross correlation (Roodman, 2009b, p 9). However, it is necessary to draw attention to the inconsistency of standard errors, then

when too many instruments are involved. This problem can be overcome by using a function of asymptotic standard errors.

Additionally, the key argument applying to the GMM estimator is in fact where the GMM estimator developed under the assumptions of a small number of years and the relatively large number of observed variables. Specifically, using a relatively small period of observation and a number of countries makes the Arellano - Bond estimator is suitable for assessment (Mileva, 2007). Previously proposed claim in favor of applicability GMM estimators because of the small number of years, and a relatively large number of observations in the variables that are used in a doctoral dissertation.

The aim of this paper is to examine the importance of the real effective exchange rate and the selected independent variables on export activity data obtained based on a set of data on the coverage of imports by exports (*EXP_IMP*), the index of the real effective exchange rate (*RER*), gross fixed capital formation (*INV*) and productivity hourly workers calculated as the ratio of real value added and total hours worked (*LPROD*). The impact will be tested using the system GMM dynamic panel estimator model in two steps. In the analysis we use annual data for the manufacturing sector that is its main area and for the period between the 2000 and 2008. Data used was obtained by consulting the OECD and Eurostat statistical databases using ISIC Rev.3. Classification (Appendix 2).

Significant influence of the real exchange rate on export competitiveness of sectors and sub-sectors of German manufacturing (H1) is expected. However, not so significant but positive impact of investment in fixed capital (H2) and productivity per worker hour (H3) in the context of increasing the export competitiveness of the German manufacturing industry is not expected. Ultimately, it is assumed that the export competitiveness is a process that develops over a period of time (H4).

Proving the hypothesis, one can get the answer to the question about the significance of the impact of the real effective exchange rate on export competitiveness of manufacturing companies of Germany. At the same time, we can find out to which extent obtained information explains in terms of the real effective exchange rate as a predictor of movement of export activity. These hypotheses will be subjected to econometric testing in which they will accept or reject this hypothesis.

Because research goals and assumptions of the model (H1, H2, H3, H4) are defined, the relevant variables of the model are selected, we can specify and test the set model, which reads as follows:

$$\ln EXP_IMP_{it} = \beta_0 + \beta_1 \ln EXP_IMP_{it-1} + \beta_2 \ln RER_{it} + \beta_3 \ln INV_{it} + \beta_4 \ln LPROD_{it} + \sum_{t=2002}^{2008} year + u_{it} + v_{it}$$

The dependent variable $\ln EXP_IMP$ is the natural logarithm of dynamic coefficient of export to import. $\ln EXP_IMP$ variable represents a measure of export specialization and it is calculated as the ratio of exports to imports of a country with the world. It also represents an export orientated manufacturing industries of Germany. Export value represents

logarithms export industry statistics. This variable enters the equation with the value from the previous year. The index $i = 1 \dots 26$ denotes the selected sectors and sub-sectors, while t stands for different periods of time in the years 2000. to 2008. Independent variable $\ln RER$ represents the natural logarithm of the real effective exchange rate with 41 trading partner (CPI, 1999 = 100), while the independent variable $\ln INV$ denotes the natural logarithm of real gross fixed capital formation. Consistent with most theoretical perspectives in this area, we expect a positive impact of investment in physical capital (INV) on exports. Natural logarithm $\ln LPROD$ includes work productivity measured by working hours. Variable u indicates the individual time-fixed effects; v is the random error model, while the impact of discharges of variables is measured by the effects of constant β_0 .

The aforementioned features of the system GMM estimators indicate its validity in the methodology used. Given the characteristics of the variable itself, it is expected to confirm the relationship between certain variables and random errors. In order to overcome the problems and to control the variables, initially preferred lag dependent variable EXP_IMP is chosen and is treated as an endogenous variable of an applied model.

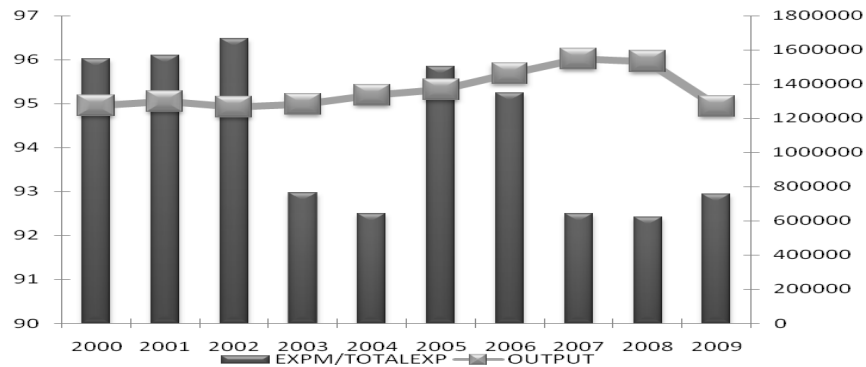
3. RESULTS

Dynamic panel analysis precedes trend display selected dependent and independent variables of the model including the real effective exchange rate. The real exchange rate is an indicator of competitiveness. Real depreciation may be due to nominal depreciation of the domestic currency and / or a faster rate of growth of prices (and costs) in foreign markets than in the domestic market. With weaker realistic currency domestic producers are price-competitive on a given level of productivity. The real appreciation is due to nominal appreciation and / or faster growth in prices (and costs) in the country than abroad. Real appreciation is sustainable if it is followed by higher productivity. If not, the currency is overvalued.

It is useful to mention that Germany is one of the biggest countries in the Eurozone and one of the largest manufacturers and exporters in the global automotive industry. Alongside with cars, Germany exported goods such as machinery, chemicals and foodstuffs, as well as textile products. Parallel to this, Germany has a top foreign trade with France, the U.S. and the Netherlands.

The following Chart 1 parallelly shows an output trend denominated in millions of euros (output) and the share of manufacturing industry in the total exports of the economy of Germany ($EXPM / TOTALEXP$) in the period from year 2000 to 2009.

Figure 1 Output and manufacturing industry exports in total exports of Germany ratio

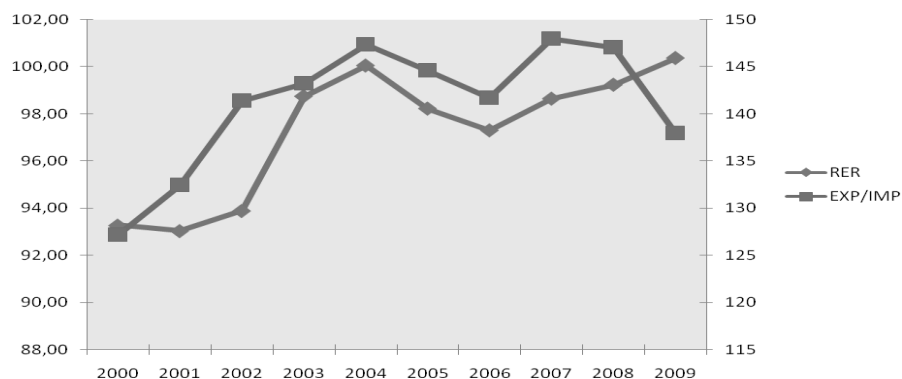


Source: author's calculations

Figure shows variability of the export processing industry in total exports of the German economy. The fall in exports is particularly noticeable in 2003, 2004, 2007 and year 2008. It can be assumed that in the observed period, exports grew faster other industries and the service sector than in manufacturing. The analysis shows that output of manufacturing industry reported mostly upward trend, except for the year 2009. It could be easily concluded that a characteristically sharp decline could be caused by the global economic crisis.

The answer to the question what is the relationship between the index of the real effective exchange rate (*RER*) and the share of exports in exports (*EXP / IMP*) in the German manufacturing industry like, can be found in Figure 2.

Figure 2 Real effective exchange rate and the coefficient of import to export from 2000 to 2009

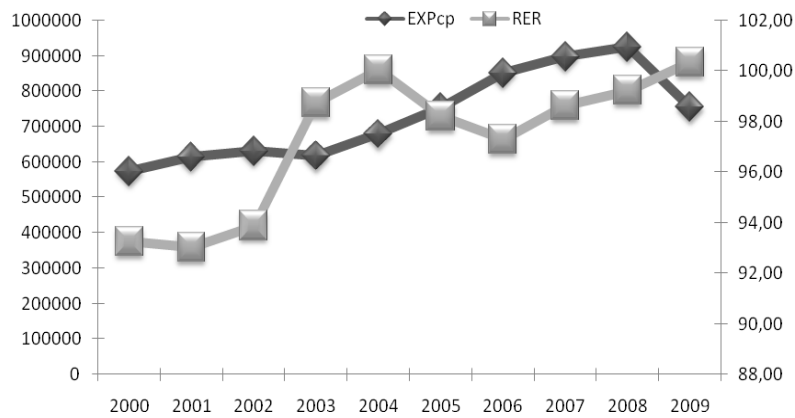


Source: author's calculations

Figure 2 shows a similar trend in the real exchange rate and the share of exports to imports in almost all years of the studied period. In parallel, it is evident that the depreciation of the real effective exchange rate and export growth in the export of manufacturing industry of Germany formed at approximately the same time and has an almost identical trend. The exception is year 2009 with a pronounced decline in the share of exports to imports. The cause itself is visible; the global economic crisis has led to changes in foreign policy, reduced demand, which had repercussions on the foreign trade activities of German manufacturing.

In addition, Figure 3 illustrates the movement of export activity in current prices (EXPcp) and the real effective exchange rate (*RER*) index, the German manufacturing industry in the period from 2000 to 2009. Current prices of export activities are denominated in millions of euros.

Figure 3 Exports and real effective exchange rate of the German manufacturing industry from 2000 to 2009



Source: author's calculations

Previous conclusions can be projected to conclusions of the Chart 3. Specifically, there is an evident trend similar to the real effective exchange rate of manufacturing industry of Germany in the observed period. However, year 2002 is specific because it is characterized by the relative inelasticity of exports relative to the real effective exchange rate. Relative inelasticity is inherent for 2009 where the effects of the global economic crisis had negative implications for the export activity of German manufacturing industry.

Because of the analytical aspects of dependent variable and the index of the real effective exchange rate as the relevant variables of the model are briefly presented, next is the dynamic panel analysis. Specifically, it is a table which traces the influence of independent variables on the dependent variable *EXP_IMP* (Table 1). The main results of the assessment are presented in the following tabular view, while a detailed printout of the results of the system GMM estimator in two steps can be found in Appendix 1.

In addition, Table 1 shows the results of the assessment and diagnosis of dynamic panel models of long and short term in the case of the dependent variable *EXP_IMP*.

Table 1 The results of the dynamic panel system two step GMM estimator manufacturing of Germany in the period from 2000 to 2008 (dependent variable *EXP_IMP*)

<i>EXP_IMP</i>	<i>Coefficients</i>
Lagged depended variable (<i>EXP_IMP</i> (-1))	0,362(0,000)***
<i>RER</i>	0,352 (0,02)**
<i>LPROD</i>	0,009 (0,000)***
<i>INV</i>	0,009 (0,000)***
Constant term	-1,03 (0,081)*
<i>Model Diagnostics</i>	<i>Results</i>
Number of observations	127
Number of instruments	39
Wald test	3999,24
Prob>chi2	0,000
Sargan test	15,1824
Prob>chi2	0,451
Arellano-Bond test for AR(1) in first differences	-2,28
Prob>chi2	0,022
Arellano-Bond test for AR(2) in first differences	-0,093
Prob>chi2	0,925

Note: p-values in parentheses and symbols ***, ** and * indicate levels of 1, 5 and 10% level. P-values were obtained by calculating the dynamic two-step procedure using the function asymptotic standard errors.
Source: author's calculations

Before we begin with the interpretation of model results, it is necessary to consider the diagnostic model whose details are shown in Appendix 1. Correctness of used instruments is confirmed with the Sargan test. In other words, there is not enough evidence to reject the validity of null hypothesis of the models instruments. Through the Arellano-Bond test the existence of autocorrelation of the first and second order errors in first differences equations examined. Results Arellano-Bond test indicates the presence of autocorrelation of the first order, but the null hypothesis about no second order autocorrelation is accepted. AR test or m1/m2 correlation test (Arellano and Bond, 1991) examines the lack of autocorrelation of the errors of the first and second order equations in the first differences. It is expected that the differences errors are correlated within the MA (1) process, i.e. there is negative autocorrelation. However, it is also expected the absence of autocorrelation of the second order, i.e. without MA (2) process, which is the second, time-shifted, potentially

endogenous variable as a valid instrument. In other words, it was confirmed by the absence of endogeneity instrument models.

Ultimately, the results of the Wald test showed high explanatory power to the model variables. Using the results of diagnostics it can be concluded that the model is specified in the appropriate manner.

Since the diagnostic results of the model are tested, next is an interpretation of the results of assessment. Consequently, there is an evident positive and highly significant coefficient of lagged dependent variable *EXP_IMP* that supports the thesis that the current values are positively related to the previous realizations.

The magnitude of the coefficient indicates that 1% increase in the value of export to import for the prior period results in an increase of 0.36% in the current period under the condition of constancy of the other variables of the model. Export-import ratio will increase by 0.35% if the variable *ln RER* increases by 1%, provided *ceteris paribus*.

Respecting the condition of constancy of other model variables, one can also conclude that the growth of variable *ln INV* by 1% results in growth of the dependent variable *ln EXP_IMP* by 0.09%. Export-import ratio will increase by 0.09% if the productivity of labor (*ln LPROD*) increases by 1% with all other variables invariance condition models.

Calculated and interpreted the model coefficients have the expected signs and significance satisfactory. In other words, variables such as ratio of export to import for the previous period and the real effective exchange rate showed a significant effect on the dynamic ratio of export to import. Gross fixed capital formation and productivity had a smaller, but significant effect on the share of exports to imports of German manufacturing industry.

4. CONCLUSION REMARKS

The basic hypothesis of the paper is confirmed and it points out that it is possible to assess the impact of the real effective exchange rate and other relevant variables on export competitiveness of selected sectors and sub-sectors of German manufacturing industry. Confirmation of the underlying hypothesis stems from the following conclusions.

Consequently, the results of the dynamic panel data analysis confirm the hypothesis H1. In other words, the results indicate a positive and statistically significant relationship of the real effective exchange rate on export competitiveness of German manufacturing industry. In parallel, the hypothesis H2, where the impact of gross fixed capital formation is measured, is accepted. According to the previous assumption, this effect is relatively weak but significant.

Results of the system GMM estimator indicate to a modest but statistically significant impact of labor productivity on export competitiveness in relation to the real effective exchange rate. Therefore, the assumption H3 is not rejected. In accordance with previously

adopted conclusions and results of the evaluation it is obvious that the export competitiveness is a process that develops over time. In doing so, the presumption H4 was confirmed. We should not ignore the fact that the export competitiveness is due to the export competitiveness of previous years.

Pursuant to the conclusions of the study, the following suggestions for the improvement and evaluation of the export competitiveness of the manufacturing industry of Germany are made:

- The real effective exchange rate of Germany is of great importance both for manufacturing industry and for the economy. Currency depreciation or increased costs abroad should be a chance that the German economy should certainly take advantage of;
- Further efforts in monetary, fiscal and trade policies are required in order to achieve a leading position in the German manufacturing industry worldwide. Favorable credit policy, subsidies (e.g. Saudi Arabia in the chemical industry) may have positive implications for the growth of the export competitiveness of the German manufacturing industry;
- Create an attractive environment for the growth of profitable investment activities;
- Raising awareness of the increasing competitive forces from countries such as the Middle and Far East. Development and implementation of a strategic plan based on the current status and future projections of the German manufacturing activity should contribute to improving the export competitiveness of Germany. Dating with own advantages, limitations, but also with the benefits and limitations of markets and competitive forces should yield positive results;
- Increasing levels of worker productivity as the key to cost competitiveness. Competitors in the international market often compete with lower prices. Raising productivity to a higher level would create space for improving the export competitiveness of the German manufacturing industry.

With the obtained results, this research has contributed to the scientific approach in analyzing the impact of the real effective exchange rate and other factors on the export competitiveness of the German manufacturing industry through the presentation of new facts (overview of the current situation, prospects and guidance for further development of the German manufacturing industry and related areas), their interpretation and adopted a methodological approach (using dynamic panel analysis).

One of the key objectives of the study was to determine the significance of the impact of the real effective exchange rate on export competitiveness of the manufacturing industry of Germany. This goal was achieved. However, the methodology presented models can be complement, develop and, depending on the objectives of the interests of the concerned experts, it is possible to add new variables in them.

The analysis results indicate that Denmark, Lithuania, Hungary, The Netherlands and Poland are the most competitive EU Member States in the food, beverages and tobacco industry.

The Croatian food, beverages and tobacco industry has a valuable role in the Croatian manufacturing - it generates 20.5% of Croatian GDP and exports products like Vegeta (food seasoning), biscuits and wafers, chocolate, canned fish, soups, olive oil, cigarettes, beer and alcoholic beverages. In order to achieve bigger level of competitiveness and international trade, the Croatian food, beverages and tobacco industry has to use EU possibilities and overcome economic challenges. Croatia imports a significant portion of the food it consumes. Therefore, slow but continued economic reforms as a result of the EU accession process potentially make Croatia a significant, long-term performer.

BIBLIOGRAPHY

Abeyasinghe T., Yeok T.L., (1998), "Exchange rate appreciation and export competitiveness. The case of Singapore," *Applied Economics*, Taylor and Francis Journals, vol. 30(1), p. 51-55.

Akhtar, M., Hilton, R. S. (1984), "Effects of Exchange Rate Uncertainty on German and U.S. Trade", Federal Reserve Bank of New York Quarterly Review, 9, p.7-16.

Arellano, M., Bond, S., (1991), Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *The Review of Economic Studies*, 58, p. 277 – 297

Arellano, M., Bover, O., (1995), Another Look at the Instrumental Variable Estimation of Error-Components Model, *Journal of Econometrics*, 68(1), p. 29-51

Arize, A. (1995), "The Effects of Exchange Rate Volatility on U.S. Exports: An Empirical Investigation," *Southern Economic Journal*, 62, 34-43.

Asseery, A., Peel, D. A. (1991), "The Effects of Exchange Rate Volatility on Exports," *Economic Letters*, 37, 173 -177.

Bahmani-Oskooee, M. (1984), "On the Effects of Effective Exchange Rates on Trade Flows," *Indian Journal of Economics*, 256, 57-67.

Bailey, M. J., Tavlas, G. S., and Ulan, M. (1987), "The Impact of Exchange Rate Volatility on Export Growth: Some Theoretical Consideration and Empirical Results," *Journal of Policy Modeling*, 9, 225-243.

Bayoumi, Tamim, May, 1999, Estimating Trade equations from Aggregate Bilateral Data. *IMF Working Paper* No.74. IMF, New York.

Bernard, A.B., Jensen, J.B., (1999), Exceptional exporter performance: cause, effect or both?, *Journal of International Economics* 47 (1), 1–25.

Blundell, R., Bond, S., (1998), Initial Conditions and Moment Restrictions in Dynamic Panel Data Models, *Journal of Econometrics*, 87(1), p. 115-143

Borbely, D., (2007), What Drives Trade Specialization in the New EU Member States?, in Iraj Hashi, Paul J. Welfens and Anna Wziatek-Kubiak, eds., *Industrial Competitiveness and Restructuring in Enlarged Europe*, p. 225-241, Basingstoke: Palgrave Macmillan.

- Coes, D. (1981), "The Crawling Peg and Exchange Rate Uncertainty," in J. Williamson (ed) New York: SDT. Martin's Press, 113-136.
- Cushman, D. O. (1983), "The Effects of Real Exchange Rate Risk on International Trade," *Journal of International Economics*, 15, 45-63.
- Cushman, D. O. (1986), "Has Exchange Risk Depressed International Trade? The Impact of Third Country Exchange Risk," *Journal of International Money and Finance*, 5, 361-379.
- Cushman, D. O. (1988), "US Bilateral Trade Flows and Exchange Rate Risk During the Floating Period," *Journal of International Economics*, 25, 317-330.
- Davies, S. W., Geroski, P. A., (1997), Changes in Concentration, Turbulence and the Dynamics of Market Share, *The Review of Economics and Statistics*, 79(3), p. 383-391
- DeGrauwe, P. (1988), "Exchange Rate Variability and the Slowdown in Growth of International Trade," *IMF Staff Papers*, 35, 63-84.
- Fang, W. and Miller, S. M. & Lai, Y. (2005), Export Promotion through Exchange Rate Policy: Exchange Rate Depreciation or Stabilization? Internet Slide. [http:// www.unlv.edu/faculty/smiller](http://www.unlv.edu/faculty/smiller).
- Fang, W. and Miller, S. M., (2004), Exchange Rate Depreciation and Exports: The Case of Singapore Revisited. Internet Slide [http://www.unlv.edu/faculty/similar/Singapore revisited](http://www.unlv.edu/faculty/similar/Singapore%20revisited).
- Gotur, P. (1985), "Effects of Exchange Rate Volatility on Trade: Some further Evidence," *IMF Staff Papers*, 32, 475-512.
- Greene, W. H. (2005), *Econometric Analysis* (5th International Edition), Prentice Hall
- Grossman, G. M., Helpman, E., (1990), The "New" Growth Theory: Trade, Innovation, and Growth, *American Economic Review* 80.
- Grossman, G. M. and E. Helpman, (1991), "*Trade, Knowledge Spillovers, and Growth*,"
- Grossman, G. M., Helpman, E., (1993), *Innovation and Growth in the Global Economy*, Cambridge (USA): The MIT Press
- Harris, R., Moffat, J., (2011), R&D, innovation and exporting, SERC Discussion Papers, SERCDP0073. Spatial Economics Research Centre (SERC), London School of Economics and Political Sciences, London, UK
- Hay, D. A., Liu, S. G., (1997), The Efficiency of Firms: What Difference Does Competition Make?," *The Economic Journal*, 107(402), p. 597-617
- Holtz-Eakin, D., Newey, W., Rosen H. S., (1988), Estimating vector autoregressions with panel data, *Econometrica* 56, p. 1371 – 1395
- Hooper, P., and Kohlhagen, S. W. (1978), "The Effects of Exchange Rate Uncertainty on the Price and Volume of International Trade," *Journal of International Economics*, 8, 483-511.
- Kenen, P. T., and Rodrick, D. (1986), "Measuring and Analyzing the Effects of Short Run Volatility in Real Exchange Rates," *The Review of Economics and Statistics*, 68, 311-315.
- Koray, F., Lastrapes, W. D. (1989), "Real Exchange Rate Volatility and U.S. Bilateral Trade: A VAR approach," *The Review of Economics and Statistics*, 71, 708-712.

- Kraay, A., (2002), Exports and Economic Performance: Evidence from a Panel of Chinese Enterprises, in China and its Regions, Economic Growth and Reform in Chinese Provinces, Edward Elgar Publishing, p.278
- Mileva, E., (2007), Using Arellano – Bond Dynamic Panel GMM Estimators in Stata, Economics Department, Fordham University
- Mitchell, M. F., Skrzypacz, A., (2005), Network Externalities and Long-run Market Shares, *Economic Theory*, 29(3), p. 621-648
- Pere, E., and Steinherr, A. (1989), “Exchange Rate Uncertainty and Foreign Trade,” *European Economic Review*, 33, 1241-1264.
- Rafayet Alam (2010), The Link between Real Exchange Rate and Export Earning: A Cointegration and Granger Causality Analysis on Bangladesh, *International Review of Business Research Papers*, Vol.6, No.1 February 2010, p.205-214.
- Rana, P. (1983), “The Impact of Generalized Floating on Trade Flows and Reserve Needs, Selected Asian Developing Countries,” New York Garland Publishers.
- Richardson, J.D., Rindal, K., (1995), Why Exports Really Matter!, The Institute for International Economics and the Manufacturing Institute, Washington D.C.
- Roodman, D., (2009), A Note on the Theme of Too Many Instruments, *Oxford Bulletin of Economics and Statistics*, 71 (1), p. 135-158
- Roodman, D., (2009b), How to Do xtabond2: An Introduction to Difference and System GMM in Stata, *The Stata Journal*, 9 (1), p. 86-136
- Statistical base Eurostat, available on: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/> or www.eurostat.eu (2.5.2012)
- Statistical base of OECD, available on: <http://www.oecd.org> (2.5.2012)
- Smith, M., (2004), “Impact of the exchange rate on export volumes.” *Reserve Bank of New Zealand Bulletin*, 67(1): 5-13.
- Stojčić, N., Bečić, M., Vojinić, P., (2012), The Competitiveness of Exports from Manufacturing Industries in Croatia and Slovenia to the EU-15 Market: A Dynamic Panel Analysis, *Croatian Economic Survey*: Vol. 14 : No. 1, p. 69-105
- Stojčić, N., Hashi I., Shqiponja, T., (2011), Innovation Activities and Competitiveness: Empirical Evidence on the Behaviour of Firms in the New EU Member States and Candidate Countries, *CASE Network Studies and Analyses*, No. 424, Warsaw: CASE – Center for Social and Economic Research
- Stojčić, N., Hashi, I., (2011), The Structure and Quality Upgrading of Croatian Exports to EU15 Market, paper presented at the 9th International Conference, Challenges of Europe: Growth and Competitiveness – Reversing the Trends, organized by the University of Split, Faculty of Economics, Bol, Croatia, May 26-28
- Stučka, T., (2000), “The Effects of Exchange Rate Changes on the Trade Balance in Croatia”. *IMF Working Paper*, WP/04/65.
- Tandrayen-Ragoobur V., Emamy N. (2011), Does Exchange Rate Volatility Harm Exports?, Evidence from Mauritius, *Journal of Emerging Trends in Economics and Management Sciences (JETEM)* Scholarlink Research Institute Journals, p.146-155.
- Thapa, N.B. (2002), An Econometric Analysis of the impact of Real Effective Exchange Rate on Economic Activities in Nepal. Internet Slide. [http://www.nrb.org.np/red/publication/Economic Review](http://www.nrb.org.np/red/publication/Economic%20Review)

Thursby, M. C., Thursby, J. G. (1987), "Bilateral Trade Flows, Linders Hypothesis, and Exchange Risk," *The Review of Economics and Statistics*. 69, p.488-495.

**APPENDIX 1 THE RESULTS OF DYNAMIC PANEL ANALYSIS (SYSTEM GMM
ESTIMATOR IN TWO STEPS)**

Model 1: 2-step dynamic panel, using 127 observations

Included 18 cross-sectional units

Time-series length: minimum 6, maximum 7

Including equations in levels

H-matrix as per OX/DPD

Dependent variable: *EXP_IMP*

Asymptotic standard errors

	Coefficient	Std. Error	z	p-value	
<i>EXP_IMP</i> (-1)	0.362583	0.072381	5.0094	<0.00001	***
Const	-1.03253	0.592024	-1.7441	0.08115	*
<i>RER</i>	0.352808	0.156297	2.2573	0.02399	**
INV	0.0971086	0.0113082	8.5874	<0.00001	***
<i>LPROD</i>	0.0992548	0.013531	7.3354	<0.00001	***

Sum squared resid	3.393130	S.E. of regression	0.166771
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Number of instruments = 39

Test for AR(1) errors: z = -2.28192 [0.0225]

Test for AR(2) errors: z = -0.0935263 [0.9255]

Sargan over-identification test: Chi-square(34) = 15.1824 [0.9978]

Wald (joint) test: Chi-square(4) = 3999.24 [0.0000]

**APPENDIX 2 LIST OF SELECTED SECTORS AND AREAS OF THE
MANUFACTURING INDUSTRY ACCORDING TO ISIC REV.3.
CLASSIFICATION**

Industry
C15T37 MANUFACTURING
C15T16 Food products, beverages and tobacco
C15 Food products and beverages
C16 Tobacco products
C17T19 Textiles, textile products, leather and footwear
C17T18 Textiles and textile products
C19 Leather, leather products and footwear
C20 Wood and products of wood and cork
C21T22 Pulp, paper, paper products, printing and publishing
C21 Pulp, paper and paper products
C22 Printing and publishing
C23T25 Chemical, rubber, plastics and fuel products
C23 Coke, refined petroleum products and nuclear fuel
C24 Chemicals and chemical products
C25 Rubber and plastics products
C26 Other non-metallic mineral products
C27T28 Basic metals and fabricated metal products
C27 Basic metals
C28 Fabricated metal products, except machinery and equipment
C29T33 Machinery and equipment
C29 Machinery and equipment, n.e.c.
C30T33 Electrical and optical equipment
C34T35 Transport equipment
C34 Motor vehicles, trailers and semi-trailers
C35 Other transport equipment
C36T37 Manufacturing n.e.c. and recycling
C36 Manufacturing n.e.c.
C37 Recycling

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THE INTERNATIONAL TRADE OF EU FOOD, BEVERAGES AND TOBACCO SECTOR

ABSTRACT:

This study focuses primarily on international trade and competitiveness of food, beverages and tobacco of 27 European countries. Furthermore, food, beverages and tobacco industry of Croatia will be discussed as well. The EU food, beverage and tobacco industry is globalized in terms of international specialization and rising world integration and represents an industry which is one of the most competitive and its market share is showing an increasing trend. The methodology of this research is on the application of various indicators like intra-industry trade, trade balance, import penetration indicator, composition of manufacturing exports and other relevant indicators. Analysis is concluded with recommendations and proposals in order to reach a higher level of competitiveness. The main aim of this study is to evaluate international competitiveness and international trade of the food, beverages and tobacco industry of chosen countries. The main results of research indicate international competitiveness trends detected by measuring, evaluation of the international trade of the EU food, beverages and tobacco industry.

Key words: Food, beverages and tobacco industry, European Union, international trade, international competitiveness

JEL classification: Q40, Q41, Q47

1. INTRODUCTION

The EU-27's food, beverages and tobacco manufacturing sector comprised 308.6 thousand enterprises in 2006 and employed 4.7 million persons. This sector generated EUR 197

billion of value added in 2006, which was equivalent to 3.5 % of the value added generated across the non-financial business economy.

According to EUROSTAT (2013), the largest activity within the food, beverages and tobacco manufacturing sector was the manufacture of bread, sugar, confectionary and other food products; it contributed almost EUR 72.0 billion of value added (36.6% of sectoral value added) and employed 2.1 million persons (43.8% of sectoral employment).

According to Bezić et. al (2012), the EU food industry has become a more important segment of the manufacturing industry. The food industry is often located, for which Europe is well suited, close to production and/or close to consumption. With the declining of some other industries, the relative importance of the European food industry is growing within manufacturing. However, its importance in the overall economy keeps declining. A fair number of world-leading food enterprises are located in the EU. Nevertheless, competitiveness of the European food industry is weak when compared to USA and Canada.

The main goal of this study is to measure the level of international trade and competitiveness of EU's food, beverages and tobacco sector while implementing different group of various indicators, including intra-industry trade, trade balance, import penetration indicator, composition of manufacturing exports and other relevant indicators.

After the introduction, the second section briefly presents the general characteristics of the EU food, beverages and tobacco industry. The third part includes methodology which is based on the application of various indicators like intra-industry trade, trade balance, import penetration indicator, composition of manufacturing exports and other relevant indicators. It starts with a brief presentation of the methodological framework and continues with the use of analysis of international trade and competitiveness of the food, beverages and tobacco industry and finally presents the results. At the end of the paper, the authors give proposals and recommendations, as well as the concluding remarks.

2. THE BASIC CHARACTERISTICS OF EU FOOD, BEVERAGES AND TOBACCO SECTOR

In the European Union the food and drink industry is a significant economic sector whose competitive position has recently been questioned. The sector flourished over the years, but is now facing new risks and challenges. Important is the fact that recent competitiveness studies have shown the need to address the challenge of decreasing competitiveness facing the European food and drink industry.

The food and drink industry is one of Europe's most important and dynamic industrial sectors (EU Commission, 2013). It is made up of about 310 000 companies, and provides jobs for more than 4 million people. With an annual turnover in excess of €900 billion, this diverse sector is a strong exporter and is responsible for countless end products in

extremely competitive domestic and international markets. But room for improvement still exists (EU Commission, 2013).

Generally speaking, tobacco products consist of cigarettes, cigarette tobacco, cigars, pipe tobacco, chewing tobacco and snuff. The number of enterprises across the EU-27 with tobacco manufacturing (NACE Division 16) as their main activity was just 0.3 thousand in 2006, demonstrating that this activity is particularly dominated by a few, extremely large multi-national enterprises. There were an estimated 64.0 thousand persons employed within the EU-27's tobacco manufacturing activities in 2006, which equated to just 1.4 % of the food, beverages and tobacco manufacturing workforce. Nonetheless, these activities generated EUR 8.3 billion of value added, which was a significantly higher share (4.2 %) of sectoral value added.

Tobacco manufacturing was highly concentrated within the EU-27 in geographical terms too, with almost two thirds of the EU-27's value added coming from Poland (26.1 % in 2005), the United Kingdom (20.4 % in 2006) and Germany (18.0 % in 2006). The Netherlands is also a key tobacco manufacturing Member State, although data are not yet available for years later than 2004 (when it accounted for 15.5 % of the EU-27 total).

3. METHODOLOGY

Analytical approach is based on scientific results of several indicators which measure the level of international trade competitiveness of the EU food, beverages and tobacco industry. The above-mentioned indicators have been frequently used in contemporary economic research, which evaluate economy's structural strengths and weaknesses *via* the composition of international trade flows (Bezić and Galović, 2013). In another words, these indicators address the question of trade specialization and performance in international markets. The aim of implemented methodology also shows the importance of the foreign market for EU food, beverages and tobacco industry in a country and what degree of domestic demand is satisfied by imports. Moreover, the most commonly used indicators, indices, and ratios that are to assess trade patterns and characteristics, and changes in them. Besides elementary and well known indicators, this research uses basic indicators which are suggested by OECD Statistical Database (2013) and World Bank (2013).

Some analyses of factors influencing the success or failure of efforts to promote industrialization and growth conclude that a growing level of intraindustry trade (plays an important positive role (World Bank, 2013). Intraindustry exchange produces extra gains from international trade over and above those associated with comparative advantage because it allows a country to take advantage of larger markets.

Intra-industry trade (IITR) represents the value of total trade remaining after subtraction of the absolute value of net exports or imports of food, beverages and tobacco industry. For

comparison between countries and industries, the measures are expressed as a percentage of each industry's combined exports and imports. According to OECD Statistical Database (2013), intra-industry trade of food, beverages and tobacco industry is calculated as follows:

$$IITR_i = \left(1 - \frac{|expo_i - impo_i|}{expo_i + impo_i} \right) \times 100$$

wherein:

$expo_i$ - export activity of sector "i"

$impo_i$ - import activity of sector "i"

This index varies between 0 and 100. If a country exports and imports roughly equal quantities of a certain product, the index value is high. Whereas if trade is mainly one-way (whether exporting or importing), the index value is low.

The "contribution to the trade balance" or „CMTB“ makes it possible to identify an economy's structural strengths and weaknesses *via* the composition of international trade flows (OECD Statistical Database, 2013). It takes into account not only exports, but also imports, and tries to eliminate business cycle variations by comparing an industry's trade balance with the overall trade balance. It can be interpreted as an indicator of "revealed comparative advantage" (Balassa, 1965:93; Balassa, 1978:203) as it indicates whether an industry performs relatively better or worse than the manufacturing total, no matter whether the manufacturing total itself is in deficit or surplus. If there were no comparative advantage or disadvantage for any industry i , a country's total trade balance (surplus or deficit) should be distributed across industries according to their share in total trade. The "contribution to the manufacturing trade balance" is the difference between the actual and this theoretical balance:

$$CMTB_i = \left[\frac{(expo_i - impo_i) - (expo_{manuf} - impo_{manuf}) \frac{expo_i + impo_i}{expo_{manuf} + impo_{manuf}}}{expo_{manuf} + impo_{manuf}} \right] \times 100$$

wherein:

$expo_i$ - export activity of sector "i"

$impo_i$ - import activity of sector "i"

$expo_{manuf}$ - export activity of total manufacturing sectors

$impo_{manuf}$ - import activity of total manufacturing sectors

A positive value for an industry indicates a structural surplus and a negative one a structural deficit. The indicator is additive and individual industries can be grouped together by summing their respective values: by construction, the sum over all industries is zero.

Next indicator called “Export import ratio” shows exports as a percentage of imports. EXIM ratio can be calculated as follows:

$$EXIM_i = \frac{expo_i}{impo_i} \times 100$$

wherein:

$expo_i$ - export activity of sector “ i ”

$impo_i$ - import activity of sector “ i ”

Another simple indicator is used within this paper. Hence, this indicator (TBAL) is calculated in real numbers of national currencies and highlights the trade pattern of each industry. It can be seen in the following formula:

$$TBAL_i = expo_i - impo_i$$

Trade balance is one of the macroeconomic indicators which are used to gauge the competitiveness of a sector at national level. When exports exceed imports, the balance is in surplus, and when imports exceed exports, the balance is in deficit.

Furthermore, composition of manufacturing exports of goods indicator (XSHM) shows the exports in a given manufacturing industry (in this case EU food, beverages and tobacco industry) as a percentage of total manufacturing exports. XSHM indicator is calculated as follows:

$$XSHM_i = \frac{expo_i}{expo_{manuf}} \times 100$$

wherein:

$expo_i$ - export activity of sector “ i ”

$expo_{manuf}$ - export activity of total manufacturing sectors

Finally, import penetration (MPEN) indicator can be calculated as a ratio of imports to the sector's production adjusted for the foreign trade balance (difference between exports and imports) according to the following formula:

$$MPEN_i = \frac{impo_i}{prod_i - expo_i + impo_i} \times 100$$

For a given country, a value close to 100 in a certain industry, implies that domestic demand is mainly fulfilled by imports and domestic production tends to be exported (OECD Statistical Database, 2013). A value close to 0 means self-sufficient, i.e. domestic demand is mainly satisfied by domestic production. A value above 100 illustrates measurement problems which may occur when combining production and trade data. It is important to bear in mind that exports can exceed production.

4. RESULTS

In the analysis of the outlined problem, the starting point is identification of international trade and competitiveness of the European food, beverages and tobacco industry of 27 EU member countries in the period between 2001 and 2012. In order to analyze European food, beverages and tobacco industry, it is important to study ongoing trade within its countries. Several indicators, which are based on export and import, can be used to measure the performance and competitiveness of a certain sector for each country.

In a given year, the values of an indicator can differ between countries, which allow an international comparison. The value of an indicator may also differ between different years, within a different country. When evaluating at Germany for example, one can examine the evolution of these values over recent history.

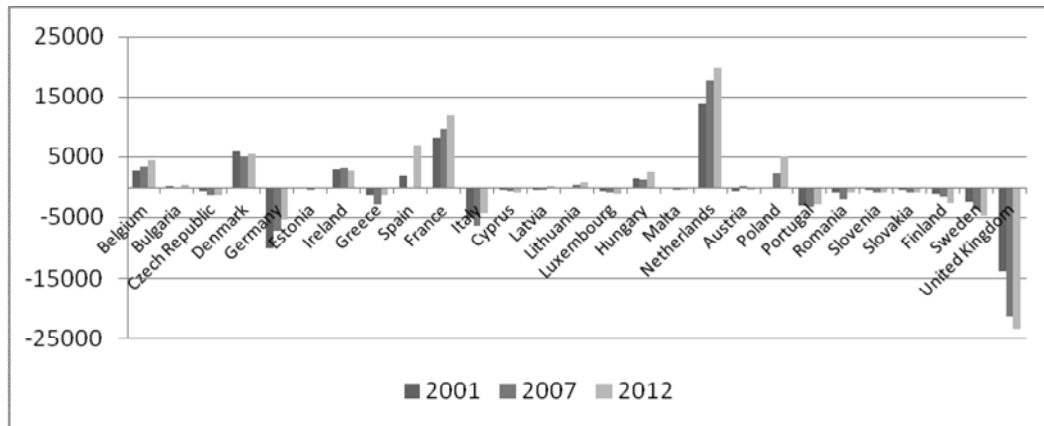
In this particular study, six indicators will be calculated for the EU27 member states: IITR, CMTB, EXIM, TBAL, XSHM and MPEN. (All of the calculated indicators can be found in Annex I). Only data from 2001 until 2012 is to be taken into account while calculating. According to the availability of data, this research separately includes Croatia as a new member of European Union.

The data is extracted from Eurostat Database. Import and export tables show the member states' contribution to the EU27 trade for a certain sector, in millions of EUR. The tables of export and import show that for all countries, import and export rise steadily every year.

Therefore it is useful to follow only at 2001, 2007 and 2012 in order to clearly represent the evolution of the indexes.

Figure 1 shows trade balance indicator results (TBAL) in the EU27 countries, for years 2001, 2007 and 2012.

Figure 1 Trade balance (TBAL) indicator in the food, beverage and tobacco industry of the EU27 countries in years 2001, 2007 and 2012



Source: Eurostat, (22/06/2013)

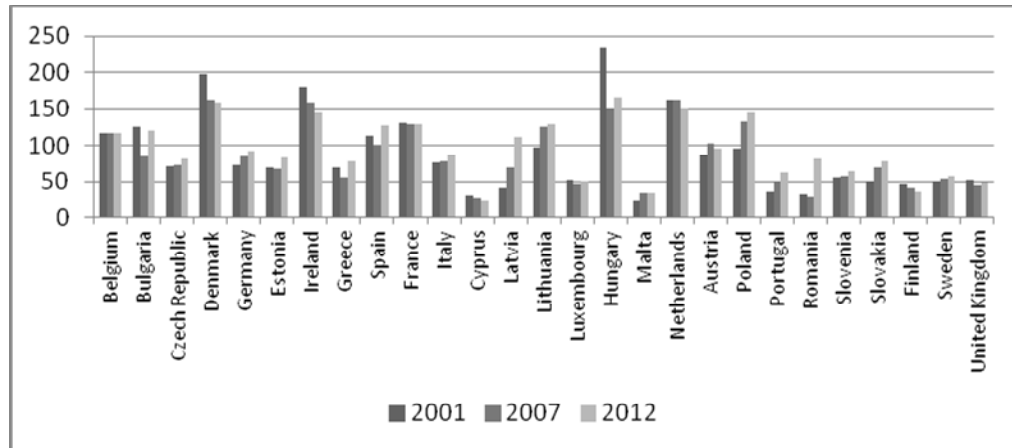
Authors calculated the trade balance of food, beverage and tobacco industry of 27 EU countries in 2001, 2007 and 2012 to compare. It can be emphasized that during this period of time the trade balance of food, beverage and tobacco industry was in surplus for Belgium, Denmark, Ireland, France, Hungary, Lithuania and the Netherlands. In 2012 the situation did not change significant.

In a recession, countries used to export more, creating jobs and demand. In a strong expansion, countries prefer to import more, providing price competition, which limits inflation and, without increasing prices, provides goods beyond the economy's ability to meet supply. Thus, a trade deficit cannot be seen as a positive activity during a recession but may help during an expansion. The balance of trade is also part of a nation's current account, which includes income from the international investment positions, as well as international aid and other cross-border transactions. Factors that could affect the balance of trade include exchange rate movements, relative production costs between trading partners, the availability of raw materials, various taxes or restrictions on trade, the availability of adequate foreign exchange or reserves to pay for imports, and the domestic prices of goods that are exported. Small trade deficits are not viewed as harmful, but large trade deficits are seen as problematic for a country's domestic economy.

In the Figure 1, it can be concluded that Germany has relatively getting smaller in years, as far as for Czech Republic, Cyprus, Luxembourg, Slovenia, Slovakia, Finland, Sweden and GB trade deficit of food, beverage and tobacco industry is getting bigger. Greece, Italy, Romania and Portugal experienced some gaps during the crisis, now their trade deficit of food, beverage and tobacco industry is getting smaller.

Furthermore, Figure 2 shows the results of “Export import ratio” as one of the export specialization indicators.

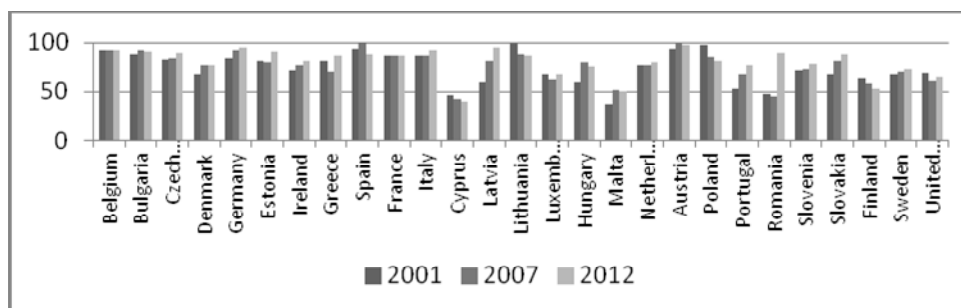
Figure 2 Export import ratio of EU27 food, beverage and tobacco industry in years 2001, 2007 and 2012 (EXIM)



Source: Eurostat, (27/10/2013)

In general, it appears that the crisis did shift negative growth rates significantly. In year 2001, data on majority of the EU27 countries demonstrate relatively high and stable level of export import ratio. Furthermore, the majority of observed countries haven't maintained year-to-year growth in terms export import ratio throughout the decade. One of the sources of this unstable trend could be found in the fact that big group of EU27 countries dipped into negative growth. EU food, beverage and tobacco industry results showed the biggest shares of export in import in Hungary, Denmark, Ireland, Netherlands and Poland. On the other side, in terms of export import ratio, the worst performers are food, beverage and tobacco industries of Malta, Cyprus and Finland. In addition, Figure 3 presents intra-industry trade of the food, beverage and tobacco manufactures in the EU27 Member countries for years 2001, 2007 and 2012.

Figure 3 The EU food, beverage and tobacco intra-industry trade for the years 2001, 2007 and 2012 (IITR)

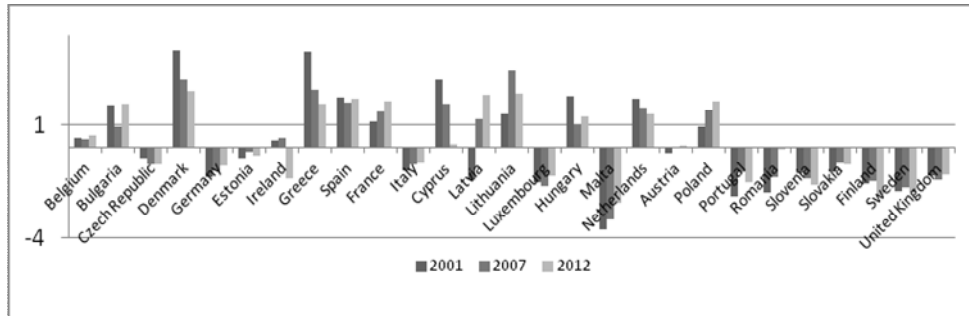


Source: Eurostat, (27/10/2013)

Looking at the findings, it is possible to conclude that there are some differences between the EU member states. Most of the Member states have a high intra industry trade index. But there are some exceptions, for example Malta and Cyprus have intra industry trade indexes, which are below 50 for the year 2001 till 2012. This means that the quantity of food, beverages and tobacco they are exporting are not the same as the quantity of food, beverages and tobacco they are importing. This can be explained by the fact that both countries are islands so their imports will be much higher compared to their exports of food, beverages and tobacco. Malta is one of the smallest EU members and it is heavily dependent on EU trade. These could be easily seen in the sector of food, beverages and tobacco as it only produces 20% of food itself.

Furthermore, the final results of the contribution to the trade balance (CMTB) are presented in Figure 4. Export and import values of the EU27 food, beverages and tobacco industry sector are taken into consideration for the years 2001, 2007 and 2012.

Figure 4 EU food, beverages and tobacco industry contribution to the trade balance for the years 2001, 2007 and 2012 (CMTB)



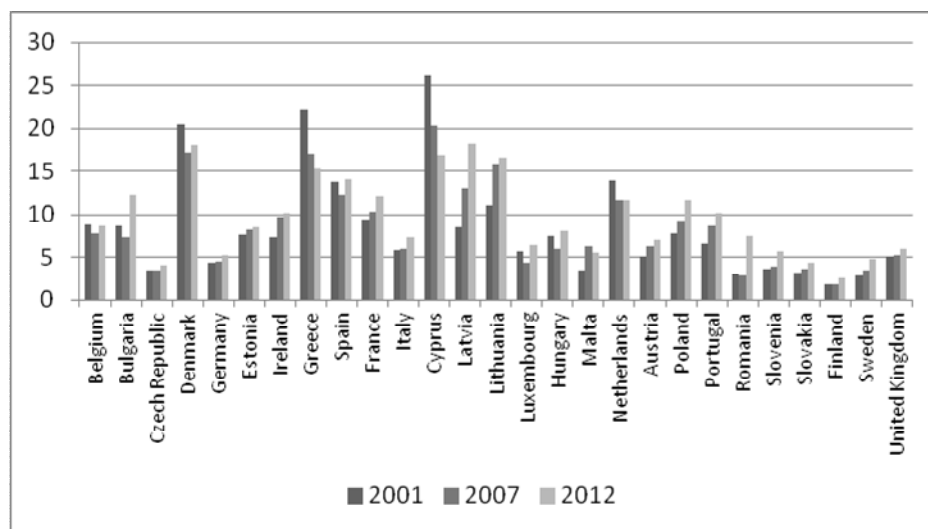
Source: Eurostat, (27/10/2013)

Figure 4 gives some indication of how the contribution to the trade balance has evaluated over a period from 2001 till 2012. It is emphasized that each EU member state has relatively consistent numbers, which means that their comparative advantage stays roughly the same. So there are some countries with a structural surplus on the trade balance such as Denmark, Greece and Lithuania. Therefore it can be concluded that these countries have a comparative advantage in the food, beverages and tobacco industry relative to the other manufacturing sectors. This can be explained by the fact that these countries are very specialized in the manufacturing of food beverages and tobacco.

For example Denmark has some tax exemptions, which attract foreign investors. They also have very flexible labor rules in comparison with the rest of the EU members, which allows companies to easily change the scale of their production without making excessive costs. Malta has the largest structural deficit. But a clear positive evolution through the years can be seen. Starting from 2001 till 2012 the structural deficit of Malta has decreased; this can be explained by several structural measures Malta took to reduce their deficit.

The results of composition of manufacturing exports of goods are shown in Figure 5.

Figure 5 Composition of manufacturing exports of goods (XSHM) in the years 2001, 2009 and 2012



Source: Eurostat, (27/10/2013)

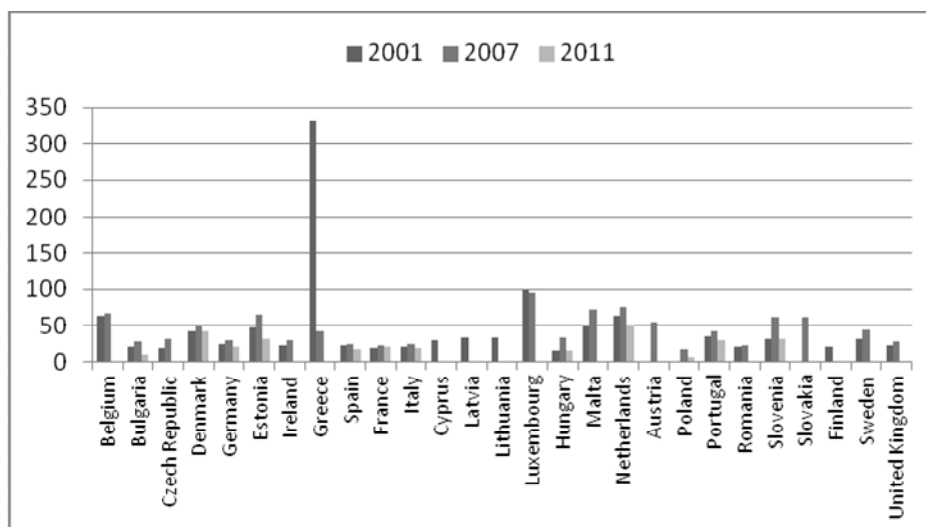
From 2001 through 2011, total exports of food, beverage and tobacco from the EU as a share of total manufacturing exports was very different from 3% in Finland to 23% in Cyprus. Not surprisingly, food, beverage and tobacco industry accounted for the huge part of total manufacturing exports for Denmark (accounting for 17.6 % in 2007), Greece (14.7 %) and Cyprus.

The graph illustrates that in 2001, the total amount of export of food, beverage and tobacco industry as a percentage of total manufacturing exports for Denmark, Greece and Cyprus and the Netherlands was much higher than in next 10 years. For Czech Republic, Slovakia, Finland and Sweden these exports represented only less than 5 percent of total export value in the manufacturing sector.

The United States, Russia, Japan and Switzerland were key export markets for EU-27 food, beverage and tobacco products in 2007, although the relative share of exports to the United States declined from 21.2 % in 2006 to 19.6 % in 2007. Russia accounted for 9.7 % of all EU-27 exports of food, beverage and tobacco products, which was higher than the Russian share of all EU-27 industrial exports (7.2 %). The share of imports of food, beverages and tobacco products into the EU-27 from Brazil and Argentina continued to grow, accounting for a little over one fifth (20.6 %) of the total in 2007.

In addition, Figure 6 presents import penetration of food, beverage and tobacco sector in the EU27 countries in years.

Figure 6: Import penetration of EU27 food, beverage and tobacco sector in the years 2001, 2009 and 2012(MPEN)



Source: Eurostat, (27/10/2013)

In 2001 in Greece MPEN indicator was more than 300 which states about the measurement problems which might occur when combining production and trade data. In this case exports might exceed production. It can be stated that in Luxembourg, Malta and Austria domestic demand is mainly fulfilled by imports and domestic production tends to be exported. Opposite situation can be seen in Spain, Italy, Portugal and Malta which means that domestic demand is mainly satisfied by domestic production.

Furthermore, Croatia's long awaited accession to the European Union took place on the 1 st of July 2013. Despite the ongoing problems that the EU is facing, entry will no doubt have a positive impact on the Croatian economy and especially the the food, beverages and tobacco manufacturing sector.

Croatian industry is an important sector of the Croatian economy, but one that has been declining. It is however expected to become much more competitive with rival countries following EU accession and the recent government initiatives (An Investor's Guide to Manufacturing and Logistics, 2013). The manufacturing industry can be considered to be an underdeveloped sector of the Croatian economy where the main focus is on the service sector. It contributes approximately 25% to Croatian GDP and employs approximately one quarter of the workforce.

The Croatian food industry generates the largest revenue and employs the highest number of people. The manufacture of food and beverages comprises 21% of the gross value added in the Croatian manufacturing industry, whilst tobacco production accounts for 2.5%. The food, beverages and tobacco industry contains over 1,200 companies, which employ 47,000 people or 20% of the total number of people employed in the manufacturing industry. Food manufacturing generates the largest total income and provides the highest number of jobs.

Food and drink production is an important field of economy in all countries. The most profitable within those sectors in Croatia are the cigarette production and tobacco processing, fish processing, beer production, processing of milk, tea, coffee and the production of soft drinks.

Food products account for 74% of Croatia's total exports of agricultural and food products. Important export products are food, beverages, tobacco: sugar, cigarettes, Vegeta (seasoning), baby food products, salted anchovies and beer for example. The major import of food products includes oil cakes, cigarettes, sugar, mineral water and frozen pork. The most important export destinations are the neighboring countries of Bosnia and Herzegovina, Italy, Slovenia and Serbia, while the majority of imported products come from Germany, Italy, Brazil, Hungary and the Netherlands.

According to presented facts, it can be stressed out that within the next middle term period Croatia has to provide a framework for restructuring and modernization of food, beverages and tobacco industry in order to achieve more competitive as well as more export oriented position. Due to the new EU customs legislative, some segment of the markets (Bosnia and Herzegovina, Serbia) could be lost, but there are EU market opportunities for Croatian food, beverages and tobacco industry.

5. CONCLUSION

The food, beverages and tobacco manufacturing sector in the EU is comprised of a relatively small number of enterprises that have a considerable global market presence, which operate alongside a high number of relatively small enterprises that serve more local, regional and national markets. At a detailed level, the largest EU-27 trade surplus (EUR 12.8 billion) was recorded for beverages.

Indeed, the surplus for beverages was more than the combined surpluses of the next two largest contributors – bread, sugar, confectionary and other food products and dairy products. In contrast, there was a considerable trade deficit in the EU-27 for fish and fish products, valued at EUR 11.7 billion.

The value of EU-27 exports and imports of food, beverages and tobacco products grew strongly in 2007 (up by 5.0 % and 8.8 % respectively on 2006), maintaining the growth in the trade of these products with non-EU countries that has been in evidence since 2003.

During the five-year period through until 2007, the main structural change in exports concerned the increase in the relative importance of beverages, whose share of total exports rose by almost two percentage points to 31.5 % in 2007 (mainly at the expense of meat and meat products and tobacco).

The analysis results indicate that Denmark, Lithuania, Hungary, The Netherlands and Poland are the most competitive EU Member States in the food, beverages and tobacco industry.

The Croatian food, beverages and tobacco industry has a valuable role in the Croatian manufacturing - it generates 20.5% of Croatian GDP and exports products like Vegeta (food seasoning), biscuits and wafers, chocolate, canned fish, soups, olive oil, cigarettes, beer and alcoholic beverages. In order to achieve bigger level of competitiveness and international trade, the Croatian food, beverages and tobacco industry has to use EU possibilities and overcome economic challenges. Croatia imports a significant portion of the food it consumes. Therefore, slow but continued economic reforms as a result of the EU accession process potentially make Croatia a significant, long-term performer.

BIBLIOGRAPHY

An Investor's Guide to Manufacturing and Logistics 2013, http://www.aik-invest.hr/wp-content/uploads/2013/01/Made_In_Croatia_FINAL_.pdf (1/12/2013)

Balassa, B. (1965). Trade Liberalisation and 'Revealed' Comparative Advantage, *The Manchester School*, 33 (2), 99-123.

Balassa, B. (1978). Export and Economic Growth: Further Evidence. *Journal of Development Economics*, 5, 181-189.

Bezić, H., Cvečić, I., Galović, T., (2012), *The Analysis of the Export Competitiveness of the EU Food Manufacturing sector*, Economic Integration, Growth Prospects and Enlargement Faculty of Economics University of Rijeka

Bezić, H.; Galović, T., (2013), The International Trade of OECD and EU ICT Sector, *Advances in Business-Related Scientific Research Conference - ABSRC 2013*, GEA COLLEGE – Faculty of Entrepreneurship, Slovenia

EUROSTAT,
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Food_beverages_and_tobacco_statistics_-_NACE_Rev._1.1, (1/10/2013)

EUROSTAT database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database, (22/06/2013)

EU Commission, <http://ec.europa.eu/enterprise/sectors/food/competitiveness/>, (21/06/2013)

EU Commission, <http://ec.europa.eu/enterprise/sectors/food/>, (20/06/2013)

OECD Statistical Database (2013), <http://stats.oecd.org/>, (14/06/2013)

World Bank, <http://go.worldbank.org/BK80KIXUQ0>, (27/06/2013)

**ANNEX 1 THE RESULTS OF TBAL, EXIM, IITR, CMTB, XSHM, MPEN
INDICATORS FOR EU FOOD, BEVERAGES AND TOBACCO INDUSTRY**

TBAL	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	2796	2626	2582	2883	3238	3377	3429	3411	3828	4109	3845	4353
Bulgaria	104	211	117	154		76	-176	-58	-27	293	287	437
Czech Republic	-518	-689	-710	-853	-730	-999	-1166	-943	-1147	-1342	-1263	-1109
Denmark	5852	5479	5142	5020	5028	5248	4952	4924	4831	5448	5475	5545
Germany	-10114	-10016	-9510	-8236	-7465	-8029	-7170	-5618	-5504	-5926	-6314	-5413
Estonia	-129	-158	-203	-225	-249	-229	-325	-326	-262	-208	-267	-208
Ireland	3006	2884	3026	3150	3043	3513	3233	2482	1934	2556	2975	2836
Greece	-1240	-1745	-1983	-2353	-2140	-2272	-2752	-2709	-2401	-1921	-1873	-1247
Spain	2000	1919	2483	1149	223	727	-192	1049	2247	3523	4090	6831
France	8161	9147	9202	8468	8319	9265	9621	10060	6177	8071	11867	11848
Italy	-5072	-4555	-5549	-6333	-6258	-6741	-6340	-5339	-5414	-5366	-6546	-4384
Cyprus	-297	-302	-291	-340	-388	-455	-549	-680	-614	-682	-683	-703
Latvia	-264	-284	-287	-313	-279	-340	-350	-309	-251	-159	-172	197
Lithuania	-14	-26	42	68	191	232	410	292	399	491	549	868
Luxembourg	-599	-617	-695	-791	-782	-810	-870	-901	-885	-914	-911	-956
Hungary	1467	1278	1188	879	687	775	1401	1403	1192	1669	2127	2642
Malta	-238	-199	-213	-233	-239	-237	-292	-326	-368	-313	-345	-368
Netherlands	13760	14998	14337	15043	16024	16606	17837	18008	17224	19505	19366	19839
Austria	-597	-505	-184	-160	134	408	147	108	-337	-291	-218	-422
Poland	-165	4	779	1194	1992	2502	2360	2123	2722	3109	3541	5125
Portugal	-3141	-2859	-2792	-2832	-2937	-3014	-3265	-3239	-3069	-3193	-3294	-2832
Romania	-850	-676	-1023	-1123		-1587	-2121	-2182	-1609	-936	-826	-752
Slovenia	-292	-278	-298	-455	-520	-549	-671	-735	-748	-725	-851	-819
Slovakia	-432	-409	-324	-418	-532	-391	-677	-908	-971	-1039	-959	-775
Finland	-993	-1074	-1211	-1300	-1476	-1512	-1656	-1921	-2065	-2195	-2401	-2580
Sweden	-2338	-2654	-2705	-2815	-2914	-3251	-3598	-3823	-3731	-4026	-4579	-4695
United Kingdom	-13963	-14302	-14398	-16524	-18485	-20050	-21264	-21120	-19702	-20436	-20775	-23528

EXIM	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	117,5	115,9	115,4	116,7	117,9	117,8	116,3	114,7	118,1	118,7	115,5	116,8
Bulgaria	126,1	148,8	125,1	126,8		109,6	85,02	96,3	98,2	117,1	114,1	120,7
Czech Republic	70,9	65,1	66,3	67,6	76,7	72,2	72,7	80,1	74,8	73,2	77,7	82,1
Denmark	198,3	188,1	183,7	177,6	172,5	169,1	161,5	157,1	161,1	165,2	161,2	159,6
Germany	73,1	73,6	75,3	78,8	82,3	82,6	85,8	89,5	89,3	89,3	89,6	91,4
Estonia	68,6	64,1	57,8	59,8	62,1	69,1	67,1	68,4	69,7	78,3	77,5	83,8
Ireland	179,4	174,1	178,8	180,2	168,5	172,1	159,1	145,1	137,2	147,3	151,1	144,2
Greece	69,7	57,1	53,5	51,8	57,7	57,5	54,6	57,5	60,1	66,8	68,4	77,3
Spain	112,6	111,6	114,6	106,3	101,1	103,5	99,16	104,4	110,3	115,2	116,2	127,1
France	131,2	134,4	133,8	130,4	129,1	130,8	129,2	128,4	117,8	121,9	129,7	128,5
Italy	76,1	78,8	75,2	73,4	74,7	74,6	77,5	81,7	80,6	82,3	80,4	86,6
Cyprus	29,9	29,9	32,4	35,1	32,2	28,4	27,2	24,1	23,2	23,1	25,3	24,4
Latvia	41,9	45,2	43,3	47,2	62,5	63,4	69,3	77,2	78,8	88,1	88,7	110,8
Lithuania	97,4	95,3	107,1	109,1	120,1	118,2	125,9	113,9	123,1	123,2	121,6	129,1
Luxembourg	51,1	51,5	49,6	44,8	47,6	46,7	45,7	46,5	46,9	48,8	50,8	50,3
Hungary	234,7	206,8	191,8	148,9	132,4	132,5	149,8	141,7	140,1	150,4	154,1	166,5
Malta	22,9	36,4	30,1	31,4	32,2	35,4	34,9	33,1	16,3	30,2	27,8	33,4
Netherlands	162,3	167,3	162,7	164,1	166,2	163,9	161,6	155,1	155,5	157,5	150,9	149,7
Austria	87,1	89,5	96,3	97,1	102,2	106,2	102,1	101,3	95,61	96,47	97,57	95,62
Poland	94,9	100,1	126,1	131,7	141,8	144,8	133,2	124,1	133,7	132,3	132,9	144,3
Portugal	36,1	40,7	41,6	42,1	45,2	48,3	50,2	53,6	54,1	55,1	56,7	61,9
Romania	31,7	37,4	27,1	27,8		27,7	28,7	42,1	52,1	71,5	77,9	81,6
Slovenia	55,8	58,3	56,3	43,8	48,5	55,6	56,3	57,4	57,7	61,1	57,3	63,5
Slovakia	50,6	53,8	62,9	63,1	66,8	77,6	69,6	64,1	61,9	63,5	70,8	78,4
Finland	47,1	45,7	42,1	40,2	37,1	40,5	41,3	38,8	33,5	35,1	37,2	35,6
Sweden	50,9	49,8	50,8	52,6	54,9	55,3	54,3	55,3	54,6	57,6	55,9	57,8
United Kingdom	52,4	52,4	51,8	48,2	45,5	44,4	44,3	44,7	45,2	47,7	50,1	48,4

IITR	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	91,9	92,6	92,8	92,2	91,7	91,8	92,4	93,1	91,7	91,4	92,7	92,5
Bulgaria	88,4	80,3	88,8	88,1		95,4	91,9	98,1	99,1	92,1	93,4	90,5
Czech Republic	83,1	78,8	79,7	80,6	86,8	83,8	84,2	88,9	85,5	84,5	87,4	90,1
Denmark	67,1	69,4	70,4	72,1	73,3	74,3	76,4	77,7	76,5	75,3	76,5	77,1
Germany	84,5	84,8	85,9	88,1	90,3	90,5	92,3	94,4	94,3	94,3	94,5	95,5
Estonia	81,4	78,1	73,3	74,9	76,6	81,6	80,3	81,2	82,1	87,8	87,3	91,1
Ireland	71,5	72,9	71,7	71,3	74,4	73,5	77,1	81,6	84,2	80,8	79,6	81,8
Greece	82,1	72,6	69,7	68,3	73,1	73,1	70,6	73,0	75,1	80,1	81,2	87,2
Spain	94,1	94,5	93,1	96,9	99,4	98,2	99,5	97,8	95,1	92,9	92,4	88,1
France	86,4	85,3	85,5	86,7	87,3	86,6	87,2	87,5	91,8	90,1	87,1	87,5
Italy	86,4	88,1	85,8	84,7	85,5	85,4	87,3	89,9	89,2	90,3	89,1	92,8
Cyprus	46,1	46,1	49,1	51,9	48,8	44,3	42,8	38,8	37,7	37,5	40,4	39,3
Latvia	59,1	62,3	60,5	64,1	76,9	77,6	81,9	87,1	88,1	93,6	94,1	94,8
Lithuania	98,7	97,5	96,6	95,6	90,8	91,6	88,5	93,4	89,6	89,5	90,2	87,2
Luxembourg	67,7	68,1	66,3	61,9	64,5	63,6	62,7	63,5	63,8	65,6	67,4	67,1
Hungary	59,7	65,1	68,5	80,3	86,1	85,9	80,1	82,7	83,2	79,8	78,7	75,1
Malta	37,3	53,3	46,3	47,8	48,8	52,3	51,8	49,6	28,1	46,4	43,5	50,1
Netherlands	76,2	74,8	76,1	75,7	75,1	75,7	76,4	78,3	78,2	77,6	79,6	80,1
Austria	93,1	94,4	98,1	98,5	98,8	96,9	99,1	99,3	97,7	98,2	98,7	97,7
Poland	97,4	99,9	88,4	86,3	82,6	81,6	85,7	89,2	85,5	86,1	85,8	81,8
Portugal	53,1	57,8	58,7	59,1	62,3	65,2	66,9	69,8	70,2	71,1	72,4	76,5
Romania	48,1	54,5	42,6	43,5		43,4	44,6	59,1	68,5	83,4	87,5	89,9
Slovenia	71,7	73,6	72,1	60,9	65,3	71,4	72,1	72,9	73,2	75,8	72,9	77,6
Slovakia	67,2	69,9	77,2	77,3	80,1	87,4	82,1	78,1	76,5	77,7	82,9	87,9
Finland	63,9	62,7	59,1	57,3	54,1	57,6	58,5	55,9	50,2	51,8	54,2	52,6
Sweden	67,5	66,5	67,4	68,9	70,9	71,2	70,4	71,2	70,6	73,1	71,7	73,2
United Kingdom	68,8	68,7	68,3	65,1	62,5	61,5	61,4	61,8	62,2	64,63	66,7	65,2

CMTB	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	0,4	0,2	0,2	0,3	0,4	0,4	0,3	0,4	0,5	0,5	0,4	0,5
Bulgaria	1,8	2,6	1,88	2,0		1,1	0,9	1,7	1,8	1,9	1,3	1,9
Czech Republic	-0,4	-0,7	-0,6	-0,7	-0,6	-0,7	-0,7	-0,5	-0,9	-0,7	-0,7	-0,7
Denmark	4,3	3,7	3,5	3,3	3,1	3,1	3,1	2,7	2,8	2,8	2,4	2,5
Germany	-1,3	-1,4	-1,4	-1,2	-1,1	-1,1	-1,12	-0,8	-1,1	-0,8	-0,7	-0,8
Estonia	-0,4	-0,4	-0,7	-0,6	-0,6	-0,1	-0,1	-0,5	-1,2	-0,8	-0,8	-0,3
Ireland	0,3	0,1	0,1	0,2	0,2	0,6	0,4	-0,1	-1,3	-1,2	-1,1	-1,3
Greece	4,2	3,3	3,1	2,9	3,1	2,8	2,5	2,7	3,3	2,8	1,9	1,9
Spain	2,2	2,1	2,3	2,1	2,1	2,2	2,1	2,2	2,1	2,2	1,9	2,1
France	1,1	1,2	1,3	1,3	1,4	1,4	1,6	1,7	1,5	1,6	2,1	2,1
Italy	-1,1	-0,9	-1,1	-1,1	-0,9	-0,7	-0,7	-0,5	-0,8	-0,4	-0,5	-0,6
Cyprus	3,1	3,2	3,9	3,1	1,3	1,4	1,9	1,6	1,5	1,3	0,8	0,1
Latvia	-1,4	-1,1	-1,1	-0,7	0,2	0,8	1,2	1,3	0,1	0,5	0,6	2,3
Lithuania	1,4	1,2	1,6	1,6	2,1	2,4	3,4	2,4	2,4	2,3	2,1	2,3
Luxembourg	-1,5	-1,7	-1,8	-1,9	-1,7	-1,5	-1,7	-1,5	-2,1	-1,7	-1,3	-1,2
Hungary	2,3	1,8	1,7	1,1	0,7	0,7	1,1	0,9	0,8	0,9	1,1	1,4
Malta	-3,6	-2,8	-2,9	-3,1	-2,8	-2,3	-3,1	-3,2	-4,8	-3,2	-3,1	-2,4
Netherlands	2,2	2,4	2,2	2,1	2,1	1,8	1,7	1,7	1,8	1,8	1,5	1,5
Austria	-0,2	-0,31	-0,01	-0,1	0,1	0,1	0,1	0,1	-0,005	0,1	0,1	0,1
Poland	0,9	0,9	1,4	1,4	1,7	1,8	1,6	1,5	1,7	1,6	1,7	2,1
Portugal	-2,1	-1,9	-2,1	-1,8	-1,2	-1,1	-1,1	-0,5	-0,7	-0,7	-1,3	-1,5
Romania	-1,9	-1,4	-2,1	-1,7		-1,4	-1,3	-0,8	-1,2	-0,3	-0,1	-0,1
Slovenia	-1,1	-1,1	-1,1	-1,4	-1,5	-1,3	-1,3	-1,2	-1,9	-1,5	-1,6	-1,6
Slovakia	-1,1	-0,9	-0,7	-0,7	-0,7	-0,4	-0,7	-0,8	-1,2	-1,1	-0,8	-0,7
Finland	-1,6	-1,7	-1,8	-1,7	-1,6	-1,4	-1,4	-1,5	-2,4	-2,1	-1,9	-2,1
Sweden	-1,9	-2,1	-2,1	-2,1	-1,9	-1,8	-1,7	-1,8	-2,3	-1,9	-1,9	-1,9
United Kingdom	-1,2	-1,2	-1,3	-1,4	-1,5	-1,4	-1,4	-1,5	-1,5	-1,3	-1,3	-1,2

XSHM	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Belgium	8,8	8,3	8,5	8,1	7,9	7,6	7,7	8,2	9,3	8,4	8,3	8,6
Bulgaria	8,7	10,6	8,72	9,1	8,9	7,3	7,3	10,1	13,3	12,8	11,5	12,2
Czech Republic	3,4	3,1	3,2	3,2	3,8	3,4	3,4	3,7	4,2	3,6	3,7	4,1
Denmark	20,4	19,2	19,1	18,5	17,4	17,4	17,2	17,1	18,8	18,9	17,9	18,1
Germany	4,3	4,2	4,3	4,2	4,4	4,3	4,5	4,8	5,7	5,2	5,1	5,2
Estonia	7,6	7,7	6,9	7,1	6,5	6,6	8,2	8,3	9,3	8,6	7,6	8,5
Ireland	7,3	7,2	8,3	8,4	8,4	9,6	9,8	9,3	8,5	9,1	9,7	10,1
Greece	22,2	21,1	19,3	19,2	19,5	17,8	17,1	17,2	20,5	18,4	16,6	15,4
Spain	13,6	13,8	14,1	13,1	12,9	12,3	12,3	12,8	14,6	13,8	13,3	14,1
France	9,4	10,1	10,5	9,9	9,9	9,9	10,4	10,8	11,7	11,3	12,1	12,1
Italy	5,9	6,3	6,3	6,1	6,1	5,9	6,1	6,4	7,7	7,4	7,1	7,3
Cyprus	26,1	28,7	33,2	24,1	15,7	17,1	20,2	19,4	20,6	19,3	17,7	16,8
Latvia	8,5	9,7	8,6	8,6	11,2	12,1	13,1	15,1	16,8	16,2	14,4	18,3
Lithuania	11,1	9,5	10,4	10,8	12,1	13,3	15,9	14,8	17,9	16,6	15,2	16,6
Luxembourg	5,7	6,1	5,8	4,9	4,6	3,8	4,3	4,4	5,1	5,8	6,1	6,4
Hungary	7,5	6,7	6,5	5,9	5,5	5,2	6,1	6,4	6,9	6,9	7,5	8,1
Malta	3,4	5,3	4,6	5,2	5,9	5,8	6,2	6,8	3,5	5,1	4,2	5,5
Netherlands	13,9	14,4	14,2	13,4	12,3	11,5	11,6	11,6	13,5	12,3	11,9	11,7
Austria	5,1	5,1	5,7	5,6	6,1	6,3	6,2	6,5	7,4	6,	6,8	7,1
Poland	7,7	7,5	7,9	8,2	9,3	9,1	9,2	9,4	11,1	10,5	10,5	11,6
Portugal	6,5	7,1	7,1	7,1	7,8	7,9	8,6	9,6	11,4	10,5	10,1	10,1
Romania	3,1	2,7	2,4	2,2	2,3	2,3	2,8	4,6	6,1	6,2	6,4	7,4
Slovenia	3,5	3,5	3,4	2,6	3,1	3,7	3,9	4,2	5,4	5,1	4,5	5,6
Slovakia	3,1	3,1	2,8	3,2	4,1	4,1	3,6	3,3	3,9	3,7	4,1	4,4
Finland	1,8	1,8	1,8	1,7	1,6	1,6	1,7	1,8	2,3	2,2	2,5	2,5
Sweden	2,8	3,1	3,1	3,1	3,3	3,4	3,4	3,8	4,7	4,5	4,3	4,7
United Kingdom	5,1	5,3	5,7	5,5	4,9	4,4	5,2	5,3	6,3	5,9	5,7	5,9

MPEN:	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Belgium	62,6		62,9	63,8	67,7	66,3	67,1	70,4			
Bulgaria	20,2	21,7	20,3	21,8		22,5	28,1	32,7	8,8	9,6	9,9
Czech Republic	19,7	18,9	21,3	24,6	29,9	30,3	32,1				
Denmark	41,8	43,1	41,1	46,9	47,6	51,5	50,7			43,9	41,8
Germany	24,4	24,5	24,5	22,9	26,6	27,8	29,2	30,1	21,9	21,1	20,6
Estonia	46,7	47,3	48,5	49,9	53,9	56,5	64,5	62,4	32,1	32,6	31,6
Ireland	23,4	23,8	21,2	22,9	26,4	28,4	30,1				
Greece	330,3	233,1	38,6	39,5	41,9	40,1	41,9		28,8		
Spain	23,7	24,1	23,9	23,1	23,5	23,9	25,5	25,1	18,5	18,7	18,1
France	19,9	20,3	20,9	20,6	21,5	22,1	23,2	24,5	19,3	19,6	20,5
Italy	20,3	20,6	20,5	20,6	23,1	25,5	24,7	23,7	18,6	18,2	18,5
Cyprus	30,7	29,7	30,1	33,5	34,5	38,8					
Latvia	33,1	36,4	37,5								
Lithuania	33,6	32,9	36,1	39,9							
Luxembourg	98,5	97,7	97,2	91,3	91,8	96,7	94,6				
Hungary	15,3	14,6	15,2	20,5	24,4	28,9	33,3	36,9	14,3	15,3	15,1
Malta	48,8	52,7	50,1	55,3	57,1		72,7				
Netherlands	63,2	68,4	69,1	69,3	76,1	78,1	76,5	79,4	51,4	57,6	51,1
Austria		38,9	42,7	45,1	49,1	52,2	54,5				
Poland			11,1	13,4	14,6	15,6	16,9	19,1	8,1	7,3	6,2
Portugal	35,2	35,9	35,3	34,8	38,6	40,5	41,8	43,3		31,1	29,8
Romania	20,5	18,2	21,4	21,2		21,5	23,6				
Slovenia	32,3	30,9		37,5	46,1	53,5	61,6	74,1	32,3	32,8	31,8
Slovakia			32,9	39,9	53,8	58,7	62,3	58,5			
Finland	21,1	21,7	22,1	22,8	24,8	25,3		26,9			
Sweden	30,8	33,3	34,1	36,2	39,2	41,8	43,8	45,2			
United Kingdom	23,4	23,8	25,3	25,1	26,2	27,5	28,8	29,3		24,1	

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THE COMPETITIVENESS AND ECONOMIC DEVELOPMENT OF BOSNIA AND HERZEGOVINA IN THE PROCESS OF EU INTEGRATION

ABSTRACT

The global economic recession has lead to decrease of economic activities in B&H. Total socio/economical situation has, under these circumstances, deteriorated, especially when 2008 is compared with year 2013. In addition, in international rankings and reports on competitiveness by World Economic Forum (WEF) and the World Bank (WB) is at the bottom of those lists. In this paper we wanted to define the sectors that are most competitive B&H in order to know what to support and strengthen especially having in mind the EU integration process. Methodology of analysis uses specific composite competitiveness index that was created, calculated as an average of five indexes: export index, income index, productivity index, index return on assets and employment index. In addition, we had some qualitative analysis of sectors of economy. The results showed that metal industry is definitely the most competitive sector. Sector of information/communication technologies and rubber and plastics sector have the highest degree of profitability, but according to other criteria (employment, income, export), they lag. The food and wood industry is one of the more competitive sectors according to both qualitative and quantitative sector analyses. The leather and footwear sector has a great potential because this production is moving from the Far East to areas closer to EU, and there B&H has competitive advantage. The overall assessment is that the economy of B&H functions well, since financial indicators show globally positive performance. However, where does all those economic problems, that we all witness, come from? Our analysis shows that if we compare B&H with 8 companies per 1,000 inhabitants with the nearby Varazdin County that has the average of 19 companies per 1,000 inhabitants, we can see how much we are left behind. That means that B&H should have at least twice as many companies and additional 500,000 jobs to even come close to the development level of the Varazdin County. So, it is clear that the key problem is not the bad economy, but too small one, and it cannot generate

the sufficient number of jobs. So if B&H does not radically improve economic activities, it will face very difficult situation concerning living standard of its inhabitants and endanger future EU integration process.

Keywords: competitiveness, economic development

JEL classification: O

1. INTRODUCTION

In the period prior to the global financial and economic crises, the real growth rates in Bosnia and Herzegovina (B&H) amounted to over 5%. However, the global economic recession has lead to decrease of economic activities in B&H. After the drop of the real GDP in 2009 by 2.9% and two years of crises, with very modest growth rates, the economy in B&H did not mark economic growth in 2012 and 2013 either. Contrary, in both years there was a drop of the GDP by 1.1%, which presents going backwards compared to the modest 0.7% of 2010 and 1% of 2011. This is far from pre-crisis growth rates of above 5%, necessary to achieve the living standard not only of developed but also of the majority of transitional countries as well as those in the region. Not to mention that we have a decreasing number of enterprises, which is now 8 enterprises per 1000 inhabitants.

Total socio/economical situation has, under these circumstances, deteriorated, especially when 2008 is compared, as the last 'pre-crisis year' with 2013. During this period of crisis, a significant increase of the number of unemployed in B&H was marked. The rate of administrative unemployment has increased from 42.1% (2008) to 44.1% (2013), while according to the Labor Force Survey (LFS), the real unemployment rate in B&H has increased from 23.4% to 28% in the same period.

In addition, in international rankings and reports on competitiveness by World Economic Forum (WEF) and the World Bank (WB) is at the bottom of those lists. According to the report on global WEF competitiveness, BH is on the 100th place in the general competitiveness among 139 ranked economies and in rankings of WB according to ease of doing business, BH is 125th out of 183 ranked economies. This means that B&H is in front of huge challenges especially because of EU integration process. If it's economy does not radically improve competitiveness, it will face very difficult situation in future integration process.

In this paper we want define the sectors that are most competitive B&H in order to know what to support and strengthen especially having in mind the EU integration process. It must be emphasized that this paper is an attempt to diagnose the competitiveness in a special, chaotic, transitional time for B&H. Therefore, we believe that collected, compiled

and processed data about 8,300 companies, from two statistically completely separate entity systems, is a kind of a step forward in all such activities.

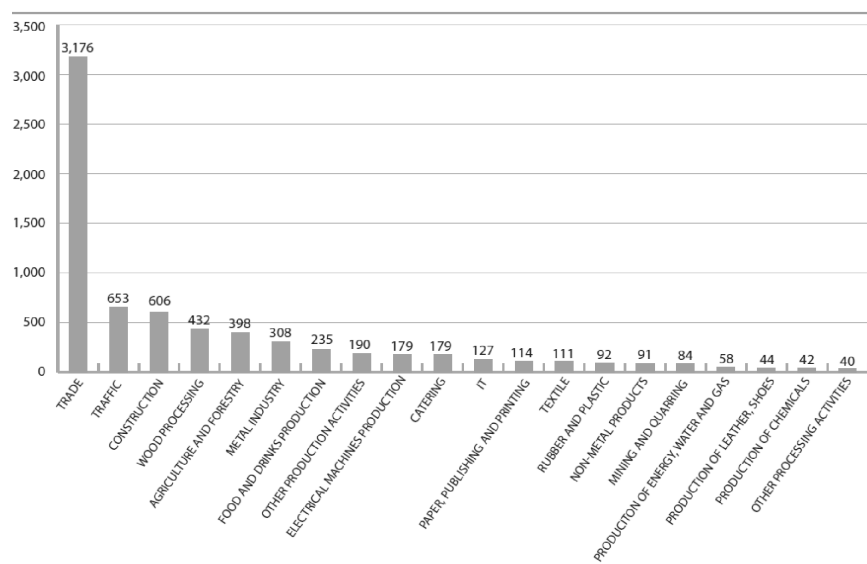
Methodology of analysis is relatively simple. In one part, it is based on some standard forms, while in the other part it is based on specific needs concerning EU integration. In addition to the standard indicators (total income, profit, etc.) some which are rarely used in BiH are also analyzed (value added per employee as proxy for productivity, ratio of productivity and gross salaries of the employee or, simply speaking, ratio of value added that an employee creates for a company and his/her salaries), and some are completely innovative (composite competitiveness index, calculated as an average of five indexes: export index, income index, productivity index, index return on assets and employment index).

1. Data and methodology

1.1 Data

Total sample consisted of 8255 companies operated in Bosnia and Herzegovina, which is 25% of all enterprises in B&H in 2011. The structure of the sample follows the structure of B&H economy. In the structure of sample, 38.4% of all the companies make trading companies. These are followed by the following sectors: traffic, construction, wood processing and agriculture and forestry. The average profit rate is 4.5%, the amount of value added per employee is around 6,000 KM, the average gross salary is around 1,200 KM or the net salary around 700 KM, etc.

Chart 1. Number of companies by sectors in the sample, 2011



Source: AFIP FBiH and APIF RS, Institute of Statistics of the FBiH, Institute of Statistics of the RS and municipalities

In the area of processing industries, the biggest number of companies is in the wood processing sector (432), metal industry and mechanical engineering industry (metal and metal products and machines and appliances – 308), production of food and beverages (235). Tourism and electrical engineering industry are not to be neglected (at 179).

1.2. Competitiveness criteria and methodology

In order to select the industry sector with the greatest growth potential for SMEs, the following criteria were defined:

- Sector's export
- The sector size according to employment and capacity for (new) employment
- The sector size according to the income and potential for income growth
- Sector's productivity level
- Sector's return on assets

Methodology of sector performance measuring is based on index numbers. Namely, for each of the indicators the whole sample average is measured and expressed as an index

number 100. The performance of every sector is then expressed as deviation from the average, also expressed as an index number. In the case of the agriculture, fishery and forestry sector, it looks as follows:

- Employment index 113, meaning the employment in the sector is 1.13 times higher than the average
- Income index 133.8, meaning the total income of the sector is 1.34 times higher than the average
- Productivity index 70.5, meaning the sector's productivity is 70.5% of the average value
- Return on assets index 16, meaning the return on assets is only 16% of the average value
- Export index 53.7, meaning the total export of the sector is 53.7% of the average value

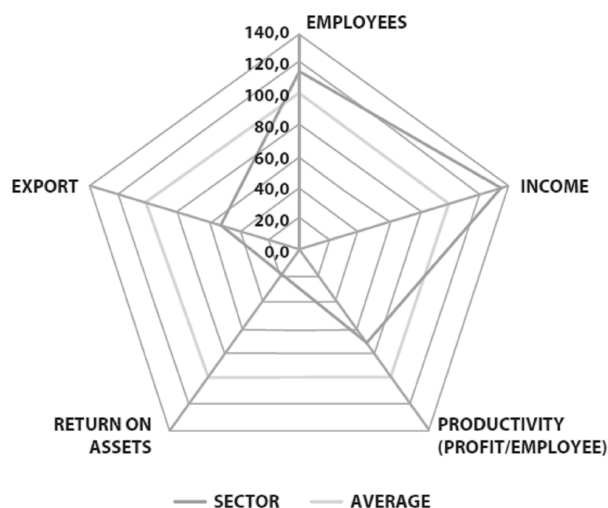
In the end, the average composite competitiveness index of the sector is measured as the average value of the previous five indexes. In the above example of agriculture, forestry and fishery sector, the composite index of competitiveness is 77.4. Quantitative ranking of sectors is being done by comparison of their composite indexes of competitiveness.

In addition to quantitative ranking, the selection of the sector is influenced by the qualitative assessment done by experts. That assessment will be based on the estimated future sector performance in relation to employment growth, income growth (sale), investment increase, technological advancements, export growth, etc.

2. ANALYSIS OF DATA

Data on the agriculture, forestry and fishery sector position in relation to the regional sector average are shown in the chart below.

**Chart 2. Deviation from the sample average, sector of agriculture, forestry and fishery
(average = 100)**



Source: AFIP FBiH and APIF RS, author's calculations

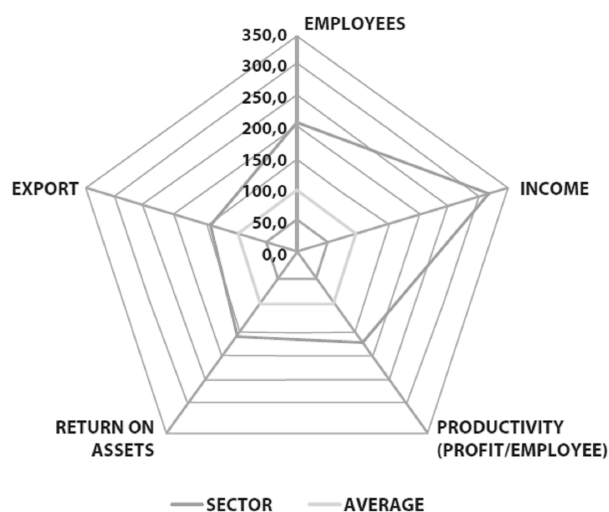
Agriculture, forestry and fishery sector's deviation from the average value defined as the index number 100, shown in the chart above, are as follows:

- Employment index 113, meaning the employment in the sector is 1.13 times higher than the average
- Income index 133.8, meaning the total income of the sector is 1.34 times higher than the average
- Productivity index 70.5, meaning the sector's productivity is 70.5% of the average value
- Return on assets index 16, meaning the return on assets is only 16% of the average value
- Export index 53.7, meaning the total export of the sector is 53.7% of the average value

The average composite index of competitiveness, being the average of the previous five indexes, is 77.4.

Data on the food and beverage sector's position in relation to regional sector average are shown in the chart 3.

Chart 3. Food and beverage sector's deviation from sample average (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

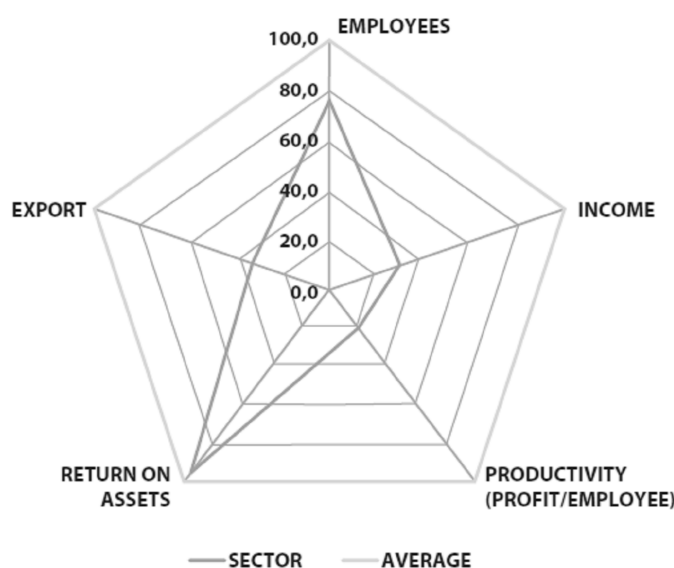
Food and beverage sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

- Employment index 209.8, meaning the employment in the sector is 2.1 times higher than the average
- Income index 317, meaning the total income of the sector is 3.17 times higher than the average
- Productivity index 171.3, meaning the sector's productivity is 1.71 times higher than the average value
- Return on assets index 155.4, meaning the return on assets is 1.55 times higher than the average value
- Export index 144.3, meaning the total export of the sector is 1.44 times higher than the average value

The average composite index of competitiveness, being the average of the previous five indexes, is 199.5.

Data on the textile sector's position in relation to regional sector average are shown in the chart 4.

Chart 4. Textile sector's deviation from the sample average, (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Textile sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

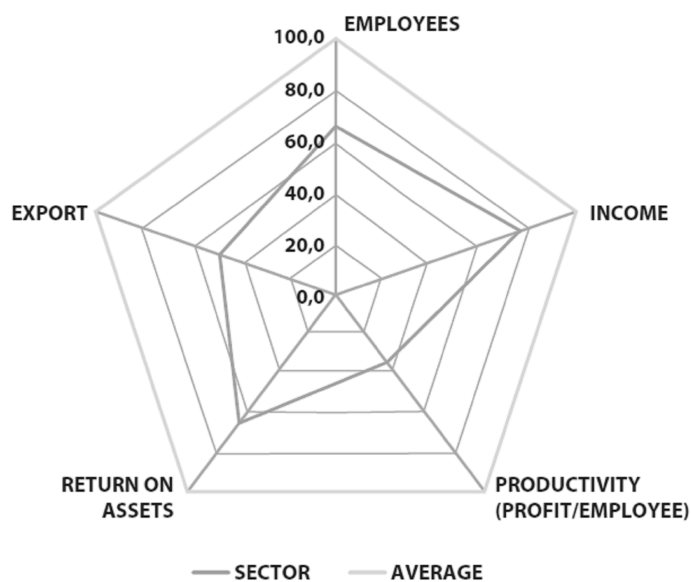
- Employment index 76.5, meaning the employment in the sector is 76.5% of the average
- Income index 30.5, meaning the total income of the sector is 30.5% of the average
- Productivity index 20.7, meaning the sector's productivity is 20.7% of the average value
- Return on assets index 94.5, meaning the return on assets is 94.5% of the average value
- Export index 33.2, meaning the total export of the sector is 33.2% of the average

value

The average composite index of competitiveness, being the average of the previous five, 51.1.

Data on the paper production and publishing/printing business in relation to regional sector average are shown in the chart below.

Chart 5. Deviation from the sample average, paper production and publishing/printing business (average= 100)



Source: AFIP FBiH and APIF RS, author's calculations

Deviation of paper production and publishing/printing from the average value defined as index number 100, shown in the chart above, are as follows:

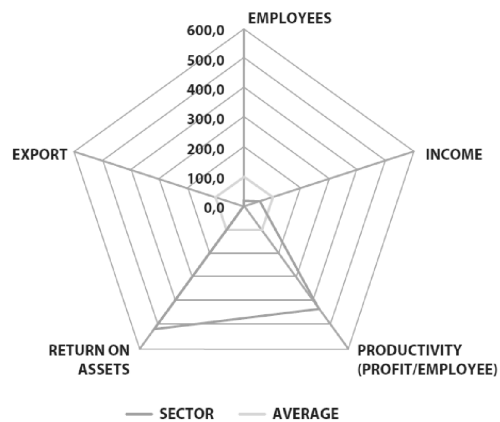
- Employment index 65, meaning the employment in the sector is 65% of the average
- Income index 77, meaning the total income of the sector is 77% of the average

- Productivity index 35.7, meaning the sector's productivity is 35.7% of the average value
- Return on assets index 65.4, meaning the return on assets is 65.4% of the average value
- Export index 48.8, meaning the total export of the sector is 48.8% of the average value

The average composite index of competitiveness, being the average of the previous five, is 58.4.

Data on the chemicals production sector in relation to regional sector average are shown in the chart 6.

Chart 6. Deviation from the sample average, chemicals production(average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Deviation of chemicals production from the average value defined as index number 100, shown in the chart above, are as follows:

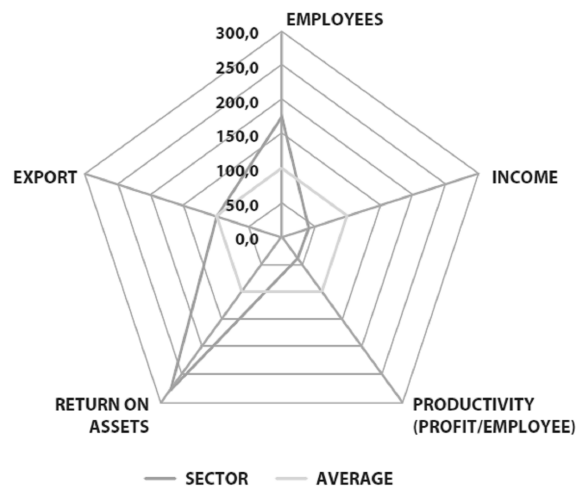
- Employment index 38.7, meaning the employment in the sector is 38.7% of the average
- Income index 56.2, meaning the total income of the sector is 56.2% of the average
- Productivity index 419.2, meaning the sector's productivity is 4.2 times higher than the average value

- Return on assets index 504.9, meaning the return on assets is 5 times higher than the average value
- Export index 3.2, meaning the total export of the sector is 3.2% of the average value

The average composite index of competitiveness, being the average of the previous five, is 199.

Data on the leather and footwear sector's position in relation to regional sector average are shown in the chart 7.

Chart 7. Deviation from the sample average, leather and footwear sector (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Leather and footwear sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

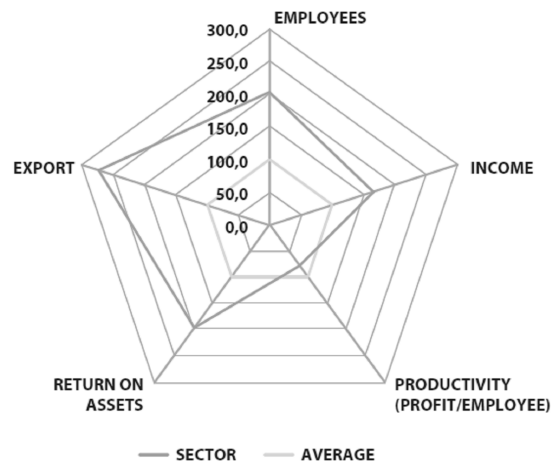
- Employment index 175.4, meaning the employment in the sector is 1.75 times higher than the average
- Income index 39.7, meaning the total income of the sector is 39.7% of the average

- Productivity index 37.6, meaning the sector's productivity is 37.6% of the average value
- Return on assets index 275.3, meaning the return on assets is 2.75 times higher than the average value
- Export index 98.2, meaning the total export of the sector is 98.2% of the average value

The average composite index of competitiveness, being the average of the previous five, is 125.2.

Data on the wood processing sector's position in relation to regional sector average are shown in the chart 8.

Chart 8. Deviation from the sample average, wood processing sector, 421 companies (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Wood processing sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

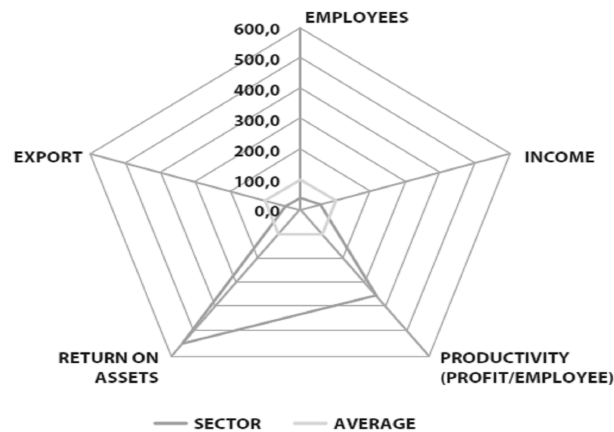
- Employment index 206.3, meaning the employment in the sector is 2.06 times higher than the average

- Income index 167.8, meaning the total income of the sector is 1.68 times higher than the average
- Productivity index 76.8, meaning the sector's productivity is 76.8% of the average value
- Return on assets index 194.6, meaning the return on assets is 1.95 times higher than the average value
- Export index 275.9, meaning the total export of the sector is 2.76 times higher than the average value

The average composite index of competitiveness, being the average of the previous five, is 184.3.

Data on the rubber and plastics sector's position in relation to regional sector average are shown in the chart 9.

Chart 9. Deviation from the sample average, rubber and plastics sector, (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Rubber and plastics sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

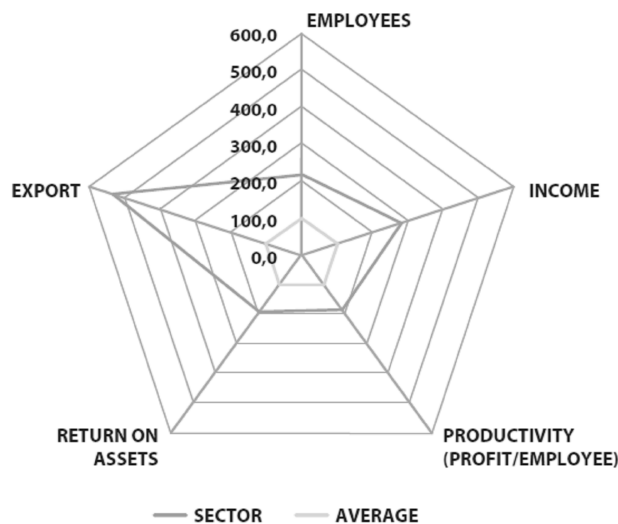
- Employment index 38.7, meaning the employment in the sector is 38.7% of the average

- Income index 56.2, meaning the total income of the sector is 56.2% of the average
- Productivity index 351.4, meaning the sector's productivity is 3.5 times higher than the average value
- Return on assets index 554, meaning the return on assets is 5.85 times higher than the average value
- Export index 42.4, meaning the total export of the sector is 42.4% of the average value

The average composite index of competitiveness, being the average of the previous five, is 208.5.

Data on the metal industry sector's position in relation to regional sector average are shown in the chart 10.

Chart 10. Deviation from the sample average, metal industry (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Metal industry deviation from the average value defined as index number 100, shown in the chart above, are as follows:

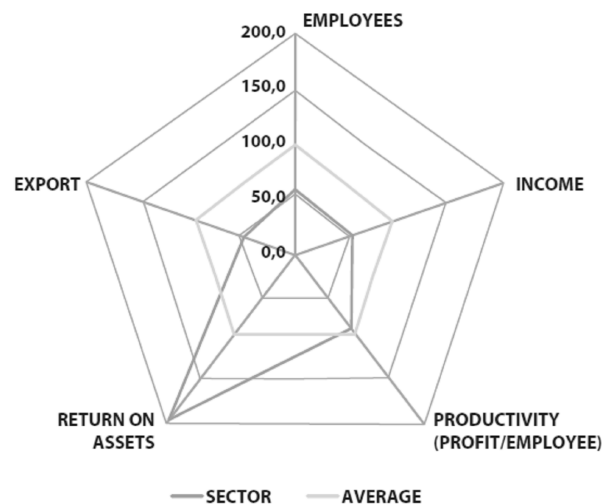
- Employment index 215.7, meaning the employment in the sector is 2.16 times higher than the average

- Income index 279.6, meaning the total income of the sector is 2.8 times higher than the average
- Productivity index 181.3, meaning the sector's productivity is 1.81 times higher than the average value
- Return on assets index 192.3, meaning the return on assets is 1.92 times higher than the average value
- Export index 536.8, meaning the total export of the sector is 5.37 times higher than the average value

The average composite index of competitiveness, being the average of the previous five, is 281.1.

Data on the electro industry position in relation to regional sector average are shown in the chart below.

Chart 11. Deviation from the sample average, electro industry (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

Electro industry deviation from the average value defined as index number 100, shown in the chart above, are as follows:

- Employment index 55.9, meaning the employment in the sector is 55.9% of the

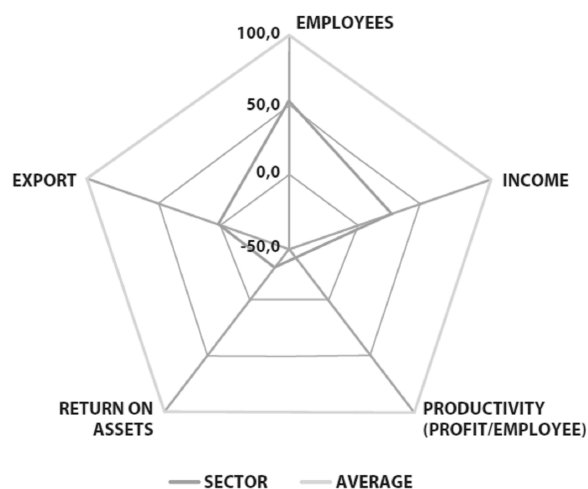
average

- Income index 51.6, meaning the total income of the sector is 51.6% of the average
- Productivity index 91.6, meaning the sector's productivity is 91.6% of the average value
- Return on assets index 195.4, meaning the return on assets is almost two times higher than the average value
- Export index 44.8, meaning the total export of the sector is 44.8% of the average value

The average composite index of competitiveness, being the average of the previous five, is 87.9.

Data on the tourism sector's position in relation to regional sector average are shown in the chart below.

Chart 12. Deviation from the sample average, tourism sector (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

The tourism sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

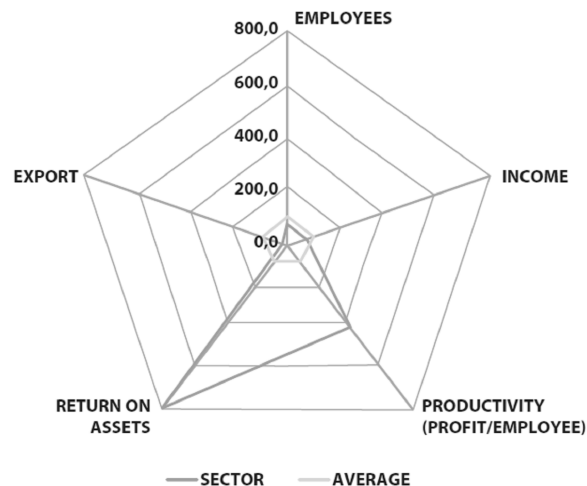
- Employment index 53.5, meaning the employment in the sector is 53.5% of the average

- Income index 26.1, meaning the total income of the sector is 26.1% of the average
- Productivity index is negative, meaning the sector does not create, but destroys value
- Return on assets index is also negative, meaning the sector does not increase, but decrease its property

The average composite index of competitiveness, being the average of the previous five, is 1.8.

Data on the information/communication sector's position in relation to regional sector average are shown in the chart 13.

Chart 13 Deviation from the sample average, sector of information/communication technologies (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

The information/communications technologies sector's deviation from the average value defined as index number 100, shown in the chart above, are as follows:

- Employment index 48.9, meaning the employment in the sector is 48.9% of the average
- Income index 26.7, meaning the total income of the sector is 26.7% of the average
- Productivity index 420.7, meaning the sector's productivity is 4.2 times higher

than the average value

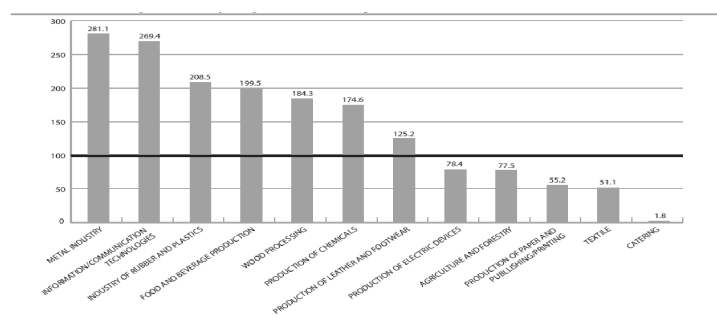
- Return on assets index 792.2, meaning the return on assets is 7.92 times higher than the average value
- Export index 22.4, meaning the total export of the sector is 22.4% of the average value

The average composite index of competitiveness, being the average of the previous five, is 269.4.

3. DISCUSSION OF RESULTS

Having in mind the results of the sector's competitiveness research presented in the previous part of the analysis, we provide the ranking list of sectors, by the value of the average composite index of competitiveness, which was calculated as the average of the five indexes: employment index, income index, productivity index, return on assets index and export index. The highest ranking have the sectors with the highest index.

Chart 14. Sector composite index of competitiveness (average = 100)



Source: AFIP FBiH and APIF RS, author's calculations

According to performed analyses and sector ranking by competitiveness, the leading sector is the sector of metal industry, followed by the information/communication technologies, then rubber and plastics sector, food industry and wood processing industry. Below the average are the following sectors: electro industry, agriculture, forestry and fishery, paper production and publishing/printing, textile and tourism.

However, this ranking list and the composite index of competitiveness are not the only instrument in the sector selection. Such ranking gives the rough picture of competitiveness, but it is always good to also use the qualitative analysis that brings such data in close contact with reality.

So, beside this quantitative analysis, which showed which sectors are on the short list and which have been rejected, the qualitative analysis of sector's position (Annex I of this document) uses expert information that usually cannot be quantified, but it is important for the future sector performance. The analysis was done by gathering of opinions and assessments of relevant experts on the future sector performances related to employment growth, income growth (sale), investment growth, technological advancement, export growth and other areas.

Based on such qualitative analysis, it is possible to reach the following important conclusions:

- Metal industry is definitely the most competitive sector according to both quantitative and qualitative sector analysis
- Sector of information/communication technologies and rubber and plastics sector have the highest degree of profitability, but according to other criteria (employment, income, export), they lag. According to the qualitative analysis, these sectors are ideal support to other sectors in production improvement.
- The food industry is one of the more competitive sectors according to both qualitative and quantitative sector analyses.
- The wood processing industry is also one of the more competitive sectors according to both qualitative and quantitative analyses of sectors.
- The leather and footwear sector, although ranked little lower than other sector according to quantitative analysis, has a great potential according to qualitative analysis. A great deal of foreign capital has been invested in this sector in the last few years, because this production is moving from the Far East to areas closer to EU, and there the region covered by the CREDO Project has competitive advantage.

4. CONCLUSIONS AND RECOMMENDATIONS

What has been shown in this analysis of the B&H economy is that the economy is in relatively good condition. Most of sectors perform better than average with average profit rate 4.5%, the amount of value added per employee around 6,000 KM, the average gross salary around 1,200 KM, etc. However, where does all those economic problems, that we all witness, come from? Where does the poverty, unemployment, low standard of living, the young and the educated leaving the country and other bad trends come from?

The picture becomes clearer if we take a look at the number of companies per 1,000 inhabitants. In B&H there is around 8 companies per 1,000 inhabitants. If we compare this average not with the developed world, but with the nearby Varazdin County that has the average of 19 companies per 1,000 inhabitants, we can see how much we are left behind. That means that this area should have at least twice as many companies to even come close to the development level of the County. It is not necessary to emphasize what would additional at least 500,000 jobs mean for the living standard of the inhabitants.

So, it is clear that the key problem is not the bad economy, but too small one, and it cannot generate the sufficient number of jobs. That is why one of the most important elements in this analysis was to assess the status of economy and define economic activities in which the economic growth and new jobs can be achieved.

The overall assessment is that the economy of B&H functions successfully in spite of being insufficiently large, compared to the number of inhabitants. Financial indicators for 2011 show globally positive performance. Though, there are some significant differences there. Some of the sectors are very successful, and some are not. In assessment of economic activities with the best potential of economic growth and creation of new jobs, the best are the metal, food and wood processing industries. At the same time, these are the largest processing sectors.

The metal industry is the leading branch of economy in B&H. This sector has huge potential, strong workforce and resource basis, and a long tradition, that enable sustainable development of different activities.

The food industry is regarded as a developed branch of industry in B&H, and the financial results of majority of companies have been positive for years. The wood processing industry has a long tradition in production of quality wood raw material and furniture. Relatively cheap and skilled workforce ensures competitive advantage, especially in furniture production.

Besides those three sectors, leather and footwear sector has somewhat lower but still good position according to the analysis of competitiveness, and has a great potential for creation of new jobs, according to the qualitative analysis. There has been a lot of foreign capital invested in this sector in the last several years, because this type of production is being moved from the Far East to the areas closer to EU, and B&H has competitive advantage there.

These four sectors were selected as the main sectors for sector support. However, there are still two sectors with outstanding performances. The sector of information/communication technologies and of rubber and plastics have the highest level of profitability and productivity, but lag by other criteria (employment, income, export). Being the relatively small sectors, they are ideal as a support to other sectors in

improvement of production and productivity, and as such they should be selected in strengthening B&H economy.

REFERENCES

Anteja ECG d.o.o.,(2012) COMPETITIVENESS ASSESSMENT OF THREE AGRIBUSINESS VALUE-CHAINS IN BOSNIA AND HERZEGOVINA – FINAL REPORT, Bosnia and Herzegovina Investment Climate Program, International Finance Corporation, Ljubljana.

Anteja ECG d.o.o.,(2012) COMPETITIVENESS ASSESSMENT OF THREE AGRIBUSINESS VALUE-CHAINS IN FEDERATION OF BOSNIA AND HERZEGOVINA – FINAL REPORT, Bosnia and Herzegovina Investment Climate Program, International Finance Corporation, Ljubljana.

Anteja ECG d.o.o. ,(2012) COMPETITIVENESS ASSESSMENT OF THREE AGRIBUSINESS VALUE-CHAINS IN FEDERATION OF BOSNIA AND HERZEGOVINA – FINAL REPORT, Bosnia and Herzegovina Investment Climate Program, International Finance Corporation, Ljubljana.

Bosna i Hercegovina, Vijeće ministara, Direkcija za ekonomsko planiranje (DEP) (2011) Strategija razvoja Bosne i Hercegovine – radni dokument. Sarajevo: DEP.

Commission on Growth and Development („Spence Report“) (2008) The Growth Report –Strategies for Sustained Growth and Inclusive Development. Washington, DC: The World Bank.

CREDO Hercegovina, (2012) NAJDINAMIČNIJI SEKTORI MALIH I SREDNJIH PODUZEĆA U HERCEGOVINI – Temeljna studija, Agencija „REDAH“, Mostar.

Davies, H., Ellis, P.D. (2000). Porter’s ‘Competitive Advantage of Nations’: Time for a final judgment?, Journal of Management Studies, 37(8): 1189–1213.

Delegation of the European Union in Bosnia and Herzegovina (2008) Analysis and mapping value chains in BiH Project No.: 2007/146271, Sarajevo, available at http://www.delbih.ec.europa.eu/files/docs/reports/Analiza_i_Mapiranje_Lanca_Vrijednost.pdf

Fire, S., Williams, S. M. (2003). Intellectual capital and traditional measures of corporate performance. Journal of Intellectual Capital, 4(3), 348–360.

Ketels Christian, Göran Kindquist and Örjan Sölvell (2006) Cluster Initiatives in Developing and Transition Economies. Stockholm: Center for Strategy and Competitiveness.

•Pulic, A. (2000). MVA and VAIC analysis of randomly selected companies from FTSE 250. Available at <http://www.vaic-on.net/downloads/ftse30.pdf>

Sousa, C. M. P. (2004) Export Performance Measurement: An Evaluation of the Empirical Research in the Literature, Academy of Marketing Science Review available at <http://www.allbusiness.com/management/3504496-1.html>

Vijeće stranih investitora BiH (2007) Bijela knjiga 2007 – prioriteta rješenja za prepreke ulaganjima i razvoju Bosne i Hercegovine. Sarajevo: Vijeće stranih investitora.

Udruženje za razvoj „NERDA“, projekat „CREDO“, (2008) Osnovna studija industrijskih sektora, Udruženje za razvoj „NERDA“, Tuzla