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# MONITORING OF THE EU REFORM AGENDA IN BOSNIA AND HERZEGOVINA

Review
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## *Abstract*

*The Reform Agenda became a buzzword in the political life of Bosnia and Herzegovina since it became the European Union requirement in front of domestic authorities. The key idea is to open a way towards a modernisation of the economy and more efficient social protection system. To be implemented, the reform measures listed by the Reform Agenda are transposed into detailed Work Plans with concrete actions, and deadlines for implementation and adopted by national governments, whilst its monitoring remains a challenge. This research proposes construction of the Reform Index that will monitor the progress and impact of implemented policy measures. Such index should be able to periodically monitor the reforms, but also compare the situation in B&H with other countries. In order to draw comparisons, indicators used in constructing the Aggregate Reform Index are selected among those provided by various international institutions (e.g. World Bank, International Labor Organization, Heritage Foundation, Transparency International, etc.) that use specific measures for ranking the world countries according to a set criteria.*

***Keywords: policy development, reforms, impact evaluation, development indicators***

## 1. INTRODUCTION

The European Union through its delegation in Bosnia and Herzegovina (B&H) during 2013 brought together representatives of government, business and workers, along with international and domestic economic experts and BiH citizens who have insights on running businesses and creating jobs. The idea was to propose concrete and urgent measures to tackle unemployment and corruption, restore the investment flow into BiH jobs and make social protection fairer and more efficient.

These proposals have been developed into a *Compact for Growth and Jobs*, a practical agenda outlining the necessary economic reforms. Widespread consultations with local stakeholders led to the production of a final document in July 2014 that recognises the need for a renewed socio-economic modernisation effort by all segments of society to eliminate barriers to growth and prosperity. Six reform areas and respectively six sets of reform measures were identified in the *Compact* (see Table 1). They have been endorsed by the International Financial Institutions and the European Union, which are fully committed to help with their implementation and to provide financial assistance to alleviate their short-term effects.

Based on the Compact, the Reform Agenda (nationally owned implementation plan of the Compact) has been recently adopted by the authorities of Bosnia and Herzegovina opens the way towards the modernisation of the economy for achieving sustainable and socially equitable growth through accelerated job creation, improved economic competitiveness, fair distribution of income and related resources, and efficient social protection of persons in need. This will become possible by improving the business climate, strengthening the rule of law, reforming the public administration, institutional restructuring, and fighting against corruption.

In order to reach those objectives, RA envisages a number of reforms grouped into six main areas: Public Finance, Taxation and Fiscal Sustainability; Business Climate and Competitiveness; Labour Market; Social Welfare and Pensions; Rule of Law and Good Governance; Public Administration Reform, where the key challenges have been identified (see Table 1).

Table 1

Reform Areas identified by the Refrom Agenda and by the Compact

| Reform Area | Indicator | Description |
|---|---|---|
| Public Finance, Taxation and Fiscal Sustainability | Taxes on work | Currently the salary taxes in B&H are too high (40%) and too intricate, pushing employees into the grey economy or abroad. According to Doing Business 2015, B&H is ranked 151 in the world with respect to paying taxes (9 places lower than in 2014). |
| Business Climate and Competitiveness | Business climate | B&H has one of most convoluted business climates in the world and is ranked 131st out of 189 countries. |
| | Enterprises | Enterprises are fragile and many rely on hidden public support rather than face competition from the outside. |
| Labour Market | Labour regulations | Arduous and restrictive labour regulations attempt to protect employees but make it difficult to hire new ones. |
| Social Welfare and Pension Reform | Social welfare | The social welfare system is on the verge of financial collapse and benefits do not reach those in need. |
| Rule of Law and Good Governance | Corruption | Corruption affects all levels of public administration and thrives on perplexing laws and regulations. |
| Public Administration Reform | | |

*Source: Author based on Brochure "The Compact for Growth and Jobs in Bosnia and Herzegovina», available at https://europa.ba/wp-content/uploads/2015/05/delegacijaEU_20140908161716 26eng.pdf*

In each of these areas, EU and B&H authorities identified a package of concrete actions to be taken according to a set of medium-term priorities that will be further distilled into specific initial measures and undertakings which were decided during 2015 and concretized into an Action Plan(s). At the same time, a monitoring mechanism of its success remains a challenge. The goal of this research is to develop an index which will be able to monitor implementation of the reforms in Bosnia and Herzegovina. The original methodology has been developed by Constantin Zaman and Ranko Markuš within EU project "Technical Assistance to the BiH Compact for Growth and Jobs: Assessment of the BiH Employment Sector" (EuropeAid/132633/C/SER/multi), , while later used by some other authors.

This paper is offering one possible way of monitoring the implementation of reforms, through construction of the Aggregate Reform Index (ARI) that will offer information about the evolution of the situation in all RA areas. Such an index should be able to monitor periodically the reforms, but also to compare the situation in B&H to reference countries from the Western Balkan region. ARI can be formulated on a yearly basis only due to available data gathered through various international sources – common for all countries in the sample.

## 2. THEORETICAL FRAMEWORK

Several authors have recognized importance of the reforms monitoring. For example, Christiansen, Schindler and Tressel (2009) claim that in many cases reforms are unsuccessful as monitoring and evaluation system is focused on individual reforms, rather than the bigger picture. Development in one area does not necessary bring positive development in others. The ideal scenario would be to develop a common and reliable indicator that would reflect development of reforms in all areas.

Several attempts have been made in this direction, trying to capture the overall impact of structural reforms. Johnson (2008) proposes such a methodology by using various indicators to measure the institutional development, Nauro and Roman (2006) constructed the "Reform Redux" as a new objective measure of reforms with focus on privatization and liberalization of the economy. Their objective has been to help to explain structural reform dynamics across countries. The paucity of objective indicators of reform is, a reason for serious concern, but also data collection within their sophisticated econometric model, which makes its conclusions vulnerable.

Radaelli and Fritsch (2012) are measuring a regulatory performance, through analyses of several areas. Their biggest challenge is limitation of the indicators, as most of them are based on output or intermediate outcomes rather than final outcomes, so impact measurement is very questionable. More indicators are needed to assess the value-for-money of oversight activities, they are even proposing the Doing Business Indicators, but rejecting the idea as it comes with their pros and cons. The main challenge is to handle causality, or in anther words to control for a large number of plausible rival hypotheses which are coming with ready-made data.

Zaman and Meunier (2015) are proposing a tool which has the advantage of quantifying the overall progress of reforms in five different areas (labour market, business environment, public finance, social policy and public administration) through a common indicator on the case of Croatia. Their methodology is similar to one presented in this paper, but is was expected, as Markuš and Zaman are original creators of the methodology (EU project "Technical Assistance to the BiH Compact for Growth and Jobs: Assessment of the BiH Employment Sector" - EuropeAid/132633/C/SER/multi). The difference between two papers is in its country focus (Croatia vs. Bosnia and Herzegovina), slightly different indicators, but also in detailedness of the calculation presentation. While Zaman and Meunier are providing only strategic guidelines behind the methodology, this paper is presenting calculations in details.

## 3. CONSTRUCTING THE AGGREGATE REFORM INDEX

One possible way of monitoring the implementation of reforms is to construct a Reform Index that will offer information about the evolution of the situation in all RA areas. Such an index should be able to monitor periodically the reforms, but also to compare the situation in BiH to reference countries from the region and from EU. The tool can be constructed only on yearly basis; however, it is essential to monitor the implementation of reforms at shorter intervals (quarterly or even monthly) – at least during the first years of the period. A quarterly Reform Index, of different nature, should be therefore elaborated, which will also allow for monitoring the reforms at entity level. In order to create index there are several important points:

1. To collect data through different reports which are covering longitudinally areas (indicators) of the research interest;
2. To make data comparable – recalculate original values of the indicators on a scale ranging from 0 to 100;
3. To create pentagrams of reforms;
4. To calculate value of the indexes, which is essentially a surface of created pentagrams.

The ARI is aimed at monitoring the implementation of reforms on annual basis; the main purpose of this index is follow development of the reform process, by its evaluation against regional countries – former Yugoslavia and two other countries from the region (Bulgaria and Romania) that are relatively recent members of the European Union.

### 3.1. Calculation Methodology

Researchers selected 5 indicators for 6 domains of reforms (see Table 1). Indicators are not fully corresponding to areas of reforms. To make 5 indicators comparable, we need to define a common unit of measurement. The original values of the indicators are recalculated on a scale ranging from 0 to

100. In order to construct indices whose values can range between 0 and 100, the minimum and maximum admissible values, or also called as lower and upper bounds, must be determined, what is defined by individual methodologies of reports which are used as data sources. Although, in order to reduce the impact of extreme outliers on the distribution of index values, the bounds may be set higher (lower) than the actual minimum (maximum) value of the indicator's data set, but within this research this has not been used.

By translating the original levels into the new scale, any initial point Xi, lying between the minimal value Xmin and the maximal one Xmax, will have a correspondent Ai on the new scale, which has the following expression:

$$Ai = \frac{Xi - X\min}{X\max - X\min} * 100$$

Once calculated data is easy to be presented in a pentagon, on which every peak represents one of indicators, as presented at the figure 1.

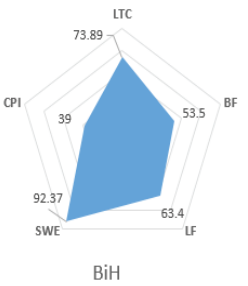


Figure 1 Pentagon of Reforms

LTC – Labour Tax and Contributions

BF – Business Freedom

LF – Labour Freedom

SWE – Social Welfare Efficiency

CPI – Corruption Perception Index

The ARI area for each country would be represented though area of the pentagon. The area of a pentagon, i.e. value of the ARI, is the amount of space occupied by the pentagon. By definition, pentagon is defined as a polygon, which has 5 sides that are equal, and therefore all 5 angles are equal. A pentagon can be sectored into 5 similar triangles. The measurement of each interior angle in a regular pentagon 108 degrees, what makes calculation easier, but in case of the ARI due different values of indicators sides are not equal, and as a final result we have irregular pentagon or polygon. Therefore, we have to divide the shape into triangles and calculate the area of each triangle then add up the area of all the triangles, what leads us towards the value of the index. In another words, the ARI area is the sum of the surface bordered by each indicator within the corresponding triangle of the pentagon. For example, let's consider the

triangle B&H pentagon, from which we calculate the area delimited by LTC and respectively BF indicators. The two indicators generate an area within a triangle that we denote by OAB, with O being the centre of the pentagon, and A and B the two edges. The LTC indicator is represented on the OA side (segment ON), while the BF one (segment OM) is on the OB side of the triangle.

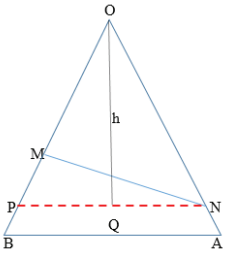


Figure 2 Index Calculation

Starting from data which are giver one can conclude that ON = LTC = 73.89 and OM = BF = 53.5. Two angles A and B are equal (54°) and thus side AB of the pentagon is AB = 117.56. The area surrounded by the two indicators (LTC and BF) is given by the irregular triangle OMN. Since we cannot calculate directly that area, we use the difference between the aria of the triangle OPN and respectively the area of PMN. Thus:

AOMN = AOPN – APMN

In the triangle OPN one can know that:

OP = ON = LTC

Angle OPN = Angle ONP = 54°

Therefore: sin OPN = sin 54° = 0.81 = h/OP

Which gives: h = 0.81LTC

Similarly: cos OPN = cos 54° = 0.59 = PQ/OP

which gives: PQ = QN = 0.59LTC

Thus: PN = 1.18LTC

The area of OPN triangle is: AOPN = 0.5hPN = 0.48(LTC)²

In case of the triangle PMN the area is given by:

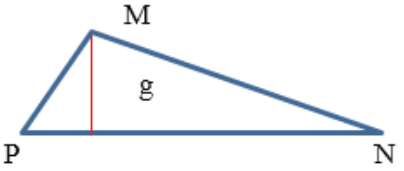


Figure 3 Triangle PMN

$APMN = 0.5gPN$

The same procedure as before can be used to calculate the missing elements:

$\sin MPN = \sin 54° = 0.81 = g/PM$

We know that: $PM = LTC - BF$

Therefore: $g = 0.81(LTC – BF)$

The area of PMN is: $APMN = 0.48LTC(LTC – BF)$

The area surrounded by the two indicators is therefore: $AOMN = 0.48(LTC^2 - LTC + BF)$

Generalizing, for any two indicators x and y the corresponding area they cover in the pentagon is:

$Ax\text{-}y = 0.48(x^2 - x + y)$

The indicators used in ARI design are selected among those provided by various international institutions that use specific measures for ranking the world countries according to defined criteria. We selected 5 indicators for 6 domains of reforms (see Table 1). Indicators are not fully corresponding to areas of reforms, as "Business Climate and Competitiveness" and "Enterprises" are inter-related and consequently a single indicator is sufficient for monitoring these aspects. In the case of the last two areas of reforms in the RA (Rule of Law and Good Governance) an indicator "degree of corruption" shall be used, which should express how the rule of law is respected and along with the quality of governance.

## 3.2. Indicator 1: Taxes on Work

The most appropriate indicator for monitoring the labour taxation is offered by the World Bank in its annual Doing Business Report. The WB uses ten areas for calculating the Ease of Doing Business indicator in case of 189 countries around the world. According to this aggregate index, in 2015 B&H was ranked 107 (three positions lower than in 2014), below Barbados and above Nepal. Among these ten areas, the Paying Taxes indicator collects information about the total number of taxes to be paid, the time spent each year for paying those taxes, and the share of various taxes in the profit of companies. According to the Paying Taxes index, in 2015 B&H was ranked 151 in the world (9 positions below the year 2014):

Table 2

Ranking of selected countries according to Paying taxes indicator

| Country | Paying taxes (2015) | | | |
|---|---|---|---|---|
| | Rank | No. of taxes | Hours/year | Hours/tax |
| B&H | 151 | 45 | 407 | 9.04 |
| Serbia | 165 | 67 | 279 | 4.16 |
| Croatia | 36 | 19 | 208 | 10.95 |
| Macedonia | 7 | 7 | 119 | 17 |

| | | | | |
|---|---|---|---|---|
| Slovenia | 42 | 11 | 260 | 23.64 |
| Montenegro | 98 | 29 | 320 | 11.03 |
| Romania | 52 | 14 | 159 | 11.36 |
| Bulgaria | 89 | 13 | 454 | 34.92 |
| OECD high income countries | | 11.8 | 175.4 | 14.86 |
| East Europe and Central Asia | | 20.5 | 234.3 | 11.43 |

Within the Paying Taxes group, the World Bank follows the Labour tax and contributions (LTC) indicator, which expresses the amount of taxes and mandatory contributions on labour paid by the businesses as a percentage of their commercial profits. We consider that this indicator responds the best to the BiH reform needs in this area. The values of this indicator in B&H and in the selected countries are given in Table 3; for comparison, the indicator is equally provided for the average in OECD, respectively East Europe and Central Asia groups of countries, as well as for the two countries recording the minimum/ maximum value of this indicator:

Table 3

Labour Tax and Contributions in selected countries (2015)

| Country | LTC(%) |
|---|---|
| B&H | 13.5 |
| Serbia | 20.2 |
| Croatia | 17.1 |
| Macedonia | 0 |
| Slovenia | 18.2 |
| Montenegro | 12.8 |
| Romania | 31.5 |
| Bulgaria | 20.2 |
| OECD high income | 23 |
| East Europe and Central Asia | 21.4 |
| Min (Macedonia) | 0 |
| Max (France) | 51.7 |

## 3.3. Indicator 2: Business climate & Enterprises

There are two main indicators that can be used for establishing ARI from the perspective of this indicator:

Starting a Business is part of the WB Doing Business methodology and includes the number of steps the entrepreneurs expect to go through to launch a business, the time it takes on average for that purpose, and

the cost and minimum capital required as a percentage of gross national income (GNI) per capita to open the business.

In comparison of two data sources, the World Bank report previously elucidated above , while Heritage Foundation (HF) calculates the Business Freedom indicator. It is a quantitative measure of the ability to start, operate and close a business, and therefore reflects the overall burden of regulation and efficiency of the government in the regulatory process. The indicator is a value between 0 and 100, where 100 represents the freest business environment. The B&H situation, according to the two indicators has been presented in Table 4.

Table 4

Ranking of selected countries according to WB and HF indicators

| Country | Starting a business (WB Doing Business) | | Business Freedom (Heritage) |
|---|---|---|---|
| | Rank | Value | Value |
| B&H | 147 | 72.51 | 53.5 |
| Serbia | 66 | 88.91 | 57.8 |
| Croatia | 88 | 85.43 | 55.8 |
| Macedonia | 3 | 98,08 | 79.2 |
| Slovenia | 15 | 94.39 | 81.2 |
| Montenegro | 56 | 90.05 | 77.1 |
| Romania | 38 | 91.93 | 69.8 |
| Bulgaria | 49 | 91.09 | 68.5 |
| Minimum | 189 (Myanmar) | 22.85 | 0 (North Korea) |
| Maximum | 1 (New Zeeland) | 99.96 | 100 (Hong Kong) |

It is believed that for purpose of ARI, the Heritage indicator (Business Freedom) is more appropriate because it covers not only the business starting phase but equally the operation and closure of activity, while incorporating aspects of government regulations of businesses. This aspect is of particular importance, as the key problem of the business climate in B&H is in its significantly troublesome regulatory framework along with the hidden public support impeding competition and adequate development of businesses.

It is of utmost importance to mention that an important indicator to be used for measuring the overall competitiveness is the Global Competitiveness Index (GCI) developed by the World Economic Forum (WEF). However, Bosnia and Herzegovina has been excluded since 2012 from the group of countries monitored by WEF due to problems related to data availability. In the last year, for which the CGI was calculated (2012), B&H was ranked 100 out of 142 countries (value of the index: 3.8 out of a maximum of 7). In the future, when B&H rejoins the sample, the Global Competitiveness Index could be used to replace the one proposed above.

## 3.4. Indicator 3: Labour regulations

In 2015 Heritage Foundation ranked B&H 97th in the world according to the Index of Economic Freedom, which captures several aspects regarding the freedom to do business, consume and invest. Such freedom exists when the

governments allow labour, capital and goods to move freely and refrain from coercion of constraint of liberty beyond the extent necessary to protect and maintain the liberty itself.

One component of the economic freedom is the Labour Freedom, monitored by HF through a specific indicator that is a quantitative measure looking into various aspects of the legal and regulatory framework of country's labour market. The Labour Freedom indicator provides cross-country data on regulations concerning minimum wage, legislation that inhibits layoffs, severance requirements, and measurable regulatory burdens on hiring, working time, etc. Thus the Labour Freedom (LF), ranging from 0 to 100, expresses the best the needs for reforms in this area, as underlined by the Compact. According to LF, B&H scores 63.4 (moderately free to mostly unfree), below countries such as Mongolia, Albania or Botswana. As compared to the selected countries, the B&H situation is the following:

Table 5

Index of Labour Freedom in selected countries (2015)

| Country | LF (Value) |
|---|---|
| B&H | 63.4 |
| Serbia | 70.4 |
| Croatia | 42.8 |
| Macedonia | 70.7 |
| Slovenia | 57.1 |
| Montenegro | 77.5 |
| Romania | 68.6 |
| Bulgaria | 76.6 |
| Minimum : North Korea | 0 |
| Maximum : USA | 98.5 |

## 3.5. Indicator 4: Social welfare

According to the Social Welfare Function, B&H was ranked in 2013 on 59th position in the world below countries such as Iran, Botswana or Belarus. Nevertheless, the indicator is not delivered on annual basis; on the other hand, there is no other regular (on yearly basis) measurement/ranking of countries with respect to the efficiency of social spending that would provide an indication about the social welfare sector. Thus, an indicator for this particular reform area needs to be formulated that would envelop:

- The government financial efforts to improve the social welfare of its population;
- The efficiency of spending for this purpose, as high social expenditures does not necessarily mean that social benefits and services go to the people in need, as emphasized by Compact conclusions.

Hence, we use the Social Protection Expenditures (SPE) and the Poverty Rate (PR) in 41 countries from Europe as the statistical basis for the elaboration of the indicator Social Protection Efficiency. The first indicator (SPE) is taken from ILO World Social Protection Report and expresses the

amount spent on social protection as a GDP percentage. The second indicator (PR) can be found in various sources; the IndexMundi figures were used, which are updated regularly and are consistent across the world countries.

In order to beset the efficiency aspect, the Social Welfare Efficiency is established according the following steps:

1. We calculate the SPE per capita (SPEi) in each of the 41 countries of the sample: total Social Protection Expenditures is divided by the population of the respective country (in million inhabitants) and we obtain the percentages of GDP spent by each government with the social protection on 1 million persons.
2. We observe that there are countries spending very little, such as Russia (0.111 percentage points), Turkey (0.167 pp) or Germany (0.336 pp), while others allocate large resources per capita for social protection: Iceland (56.14), Malta (46.706) or Luxembourg (41.57).
3. Clearly, this indicator tells us how much the governments spend but nothing about how efficient the resources are used, as it is hard to believe that Germany has one of the most inefficient systems of social protection in Europe. Efficiency means that with one percentage point of GDP spent of social protection the highest possible number of persons is taken out of poverty.

We need therefore a common reference for efficiency that will express the optimal SPE per capita at which the poverty is completely eradicated in the country. This Reference SPE (RSPE) can be calculated from the elasticity of Poverty with respect to Social Protection Expenditures: by how much poverty declines when the government increases the expenditures on social protection by 1%. Using the average figures for all the European countries of the sample, we obtain:

$$RSPE = 0.324$$

This means that, in average, Europe can eradicate the poverty if 32.4% of GDP is allocated for social protection purposes. Currently, 27.1% is assigned for this sector, and the poverty rate reaches 16.4% of European population.

The Reference SPE is simply the ratio between the SPE and the non-poor population:

$$\mathbf{RSPE} = \frac{\mathbf{SPE}}{\mathbf{1 - PR}}$$

Based on the reference value, the indicator of Social Welfare Efficiency in a particular country i (SWEi) is calculated as the difference between the SPE per capita in that country (SPEi) and RSPE:

$$SWEi = SPEi - RSPE$$

The SWE is optimal when the above difference is zero because in that case the corresponding country spends exactly the amount necessary for taking

people out of poverty. If the SWE is negative, the authorities underspend on social protection; this is the case in Russia and Turkey for example. On the contrary, if the SWE is positive, the country overspends on social protection, as compared to the outcomes (in terms of poverty rate); the highest overspending is recorded in Iceland, Malta and Luxembourg. The closest countries to the optimal SWE are Germany (0.012) and UK (0.048).

Both underspending and overspending are inefficient: in the first case due to resource insufficiency allocated to social protection, which pushes a segment of population into poverty; in the second situation owing to the financial resources partially wasted with either too generous benefits for a part of population in the detriment of a share of needy individuals, or with a system of social protection that do not target well those in effective need.

In case of B&H versus other countries of the selected sample, the situation with respect to the SWE indicator is the following:

Table 6

Social Welfare Efficiency in selected countries (2015)

| Country | SWE |
|---|---|
| B&H | 4.256 |
| Serbia | 2.388 |
| Croatia | 4.667 |
| Macedonia | 8.377 |
| Slovenia | 10.595 |
| Montenegro | 31.705 |
| Romania | 0.567 |
| Bulgaria | 2.082 |
| Minimum:<br>Underspending<br>Overspending | <br>-0.157 (Turkey)<br>0.012 (Germany) |
| Maximum:<br>Underspending<br>Overspending | <br>-0.213 (Russia)<br>55.816 (Iceland) |

## 3.6. Indicator 5: Corruption

In 2014 Transparency International (http://www.transparency.org/) ranked B&H on the 80th position according to the Corruption Perception Index (CPI), below countries such as Senegal, South Africa or Swaziland.

The international literature has utilized two main indicators for measuring corruption: the above CPI developed by Transparency International, respectively the Freedom from Corruption (FC) calculated by the Heritage Foundation. Recently, the World Bank proposed a similar indicator – the PACI (Public Administration Corruption Index) that measures the cross-national corruption based on the geographic distribution of public officials involved in cross-border corruption cases. However, the PACI responds to a much lesser extent to the specific needs of the reform area we want to monitor here.

According to the first two indicators, the situation in Bosnia and Herzegovina versus the other countries from the selected sample is the following:

Table 7

Ranking of selected countries according to corruption indicators (2015)

| Country | CPI | | FC |
|---|---|---|---|
| | Rank | Value | Value |
| B&H | 80 | 39 | 42 |
| Serbia | 78 | 41 | 42 |
| Croatia | 61 | 48 | 48 |
| Macedonia | 64 | 45 | 44 |
| Slovenia | 39 | 58 | 57 |
| Montenegro | 76 | 42 | 44 |
| Romania | 69 | 43 | 43 |
| Bulgaria | 69 | 43 | 41 |
| Minimum | 175 (Somalia) | 8 | 6.7 (Belize) |
| Maximum | 1 (Denmark) | 92 | 91(Denmark) |

After different analyses it has been decided that the most appropriate indicator to be used for monitoring the reforms in this domain is the Corruption Perception Index developed by Transparency International.

## 4. DISCUSSION: CONSTRUCTION OF THE PENTAGON OF REFORMS

The five indicators to be used for constructing the ARI are grouped for 8 countries of the sample (for the year 2015). Three of them (Business Freedom – BF, Labour Freedom – LF, and Corruption Perception Index – CPI) do not need any transformation because they are already expressed on a scale ranging from 0 to 100. In case of SWE (Social Welfare Efficiency), the new scale must be reversed because the lowest value (0) corresponds to maximum efficiency, while the highest values (55.816 in case of over-spending, respectively -0.213 in case of underspending) corresponds to the minimum spending efficiency. The same reversion applies in case of LTC (Labour Tax and Contributions), where high values are counter-productive, while low levels of the indicator stimulate the economy and the job creation.

Table 8

Selected indicators for calculating the ARI

| Country | Indicators (original values) | | | | |
|---|---|---|---|---|---|
| | LTC | BF | LF | SWE | CPI |
| B&H | 13.5 | 53.5 | 63.4 | 4.256 | 39 |
| Bulgaria | 20.2 | 68.5 | 76.6 | 2.082 | 43 |
| Croatia | 17.1 | 55.8 | 42.8 | 4.667 | 48 |
| Macedonia | 0 | 79.2 | 70.7 | 8.377 | 45 |
| Montenegro | 12.8 | 77.1 | 77.5 | 31.705 | 42 |
| Romania | 31.5 | 69.8 | 68.6 | 0.567 | 43 |
| Serbia | 20.2 | 57.8 | 70.4 | 2.388 | 41 |
| Slovenia | 17.1 | 81.2 | 57.1 | 10.595 | 58 |
| Minimum | 0 | 0 | 0 | 0 | 8 |
| Maximum | 51.7 | 100 | 98.5 | 55.816 | 92 |

During rescaling we have therefore:

No change in scale: BF, LF and CPI;

Reversed scale (100 minimum and 0 maximum): LTC and SWE.

Through the scale reversion the above transformation formula becomes:

$$Ai = 100 - \frac{Xi - X\min}{X\max - X\min} * 100$$

Based on the rescaled values of the indicators, the first step in constructing the ARI is the graphical representation of those values for each country. From calculated figures we observe that the best performance by indicator is achieved by:

- Labour Tax and Contributions: Macedonia;
- Business Freedom: Slovenia;
- Labour Freedom: Montenegro;
- Social Welfare Efficiency: Romania;
- Corruption Perception Index: Slovenia.

It is possible to obtain the corresponding pentagon for each of the eight countries of the sample, but for the purposes of this paper as example has been presented only pentagon of reforms for Bosnia and Herzegovina (see Figure 4 below).

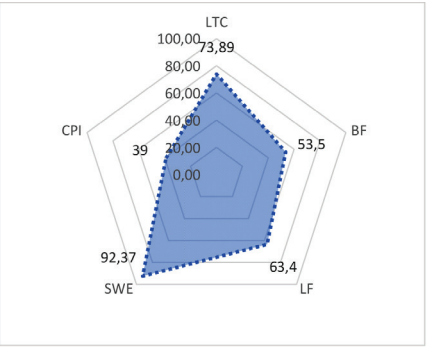


Figure 4 The Pentagon of Reforms B&H

*Source: Author's calculations*

ARI has been calculated for each country on the basis of the area covered within the pentagon; it represents the percentage of the surface delimited by the five indicators in the total area of the pentagon. The pentagon's surface corresponds therefore to the ideal level of reforms. From ARI calculations we can see that B&H records the lowest index, but very close to the Croatian. The best performer is Macedonia from this point of view, followed by Bulgaria.

There is no country in the world recording a maximum level of ARI (100), but in some developed economies the index approaches 90%. Thus, we can conclude that B&H needs to double its efforts for reforming the economy

and institutions in order to reach such a high level of development. However, the mid-term objectives should be to achieve a reform status that will bring the country closer to the average ARI of the region, which is 53.7.

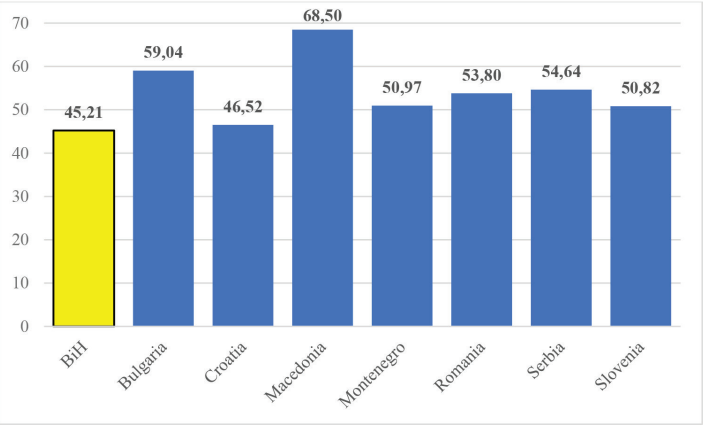


Figure 5 The Aggregate Reform Index (2015)

*Source: Author's calculations*

As compared to this average, B&H is advancing in three indicators: Labour Tax and Contributions (37.6% above the average), Labour Freedom (18% higher), and respectively Social Welfare Efficiency (72% superior to average). In contemplation to the other two indicators Bosnia and Herzegovina is below the average by 37.2% in Business Freedom, and by 27.4% in terms of corruption. Overall, the average of all five indicators in B&H is by 10.7% above the mean of the whole sample.

In two indicators B&H is on the last position among the eight countries in terms of performance. The worst performers conducive to each of the five indicators are:

- Labour Tax and Contributions: Romania;
- Business Freedom: Bosnia and Herzegovina;
- Labour Freedom: Croatia;
- Social Welfare Efficiency: Montenegro;
- Corruption Perception Index: Bosnia and Herzegovina.

The largest area within the pentagon – meaning the most advanced reform domain – corresponds to the SWE-CPI indicators in case of BiH, Bulgaria, Croatia, Romania and Serbia. Macedonia records the highest area in case of LTC-BF indicators, Montenegro in LF-SWE ones, and Slovenia in case of BF-LF indicators. The lowest area (thus the field where reforms are most necessary) is recorded in the following domains: BiH in CPI-LTC; Bulgaria and Romania in LTC-BF; Croatia, Macedonia and Slovenia in LF; Montenegro

in SWE-CPI; Serbia in BF-LF. It follows that the Corruption/Labour taxation induce the least reformed combination of indicators in Bosnia and Herzegovina.

However, the interpretation of the index through a single point in time is not fully relevant because the reform is a continuously dynamic process. Through the indicators that define it, the ARI changes therefore over time; its values may go up with the advancement of reforms, or – on the contrary – could decline if certain policy measures are inappropriate or badly implemented. It is therefore beneficial to regard the historical evolution of the index prior to 2015 in order to evaluate the progress of past reforms that ended up with the current level of ARI, but also to identify the areas that contributed the most to the existing situation.

We therefore present in Figure 6 the trend of the index over the period 2005 – 2014 for B&H (the index cannot be calculated for 2005 because of missing data), from which is visible that the evolution is rather sinusoidal, with alternative increase and decrease in ARI values, but with a small positive trend over the whole period. If compare to other countries (calculation not presented) in 2014, the index of BiH recorded a level that is equivalent to the Croatian ARI in 2008 (although the two countries have been very close all over the period); all the other countries have always recorded a significantly higher index than Bosnia and Herzegovina.

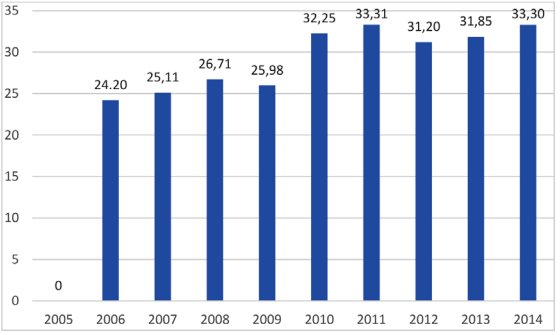


Figure 6 Historical trands of Aggregate Reform

*Source: Author's calculation*

## 5. CONCLUSIONS

The Compact for Growth and Jobs represents a practical agenda outlining the necessary economic reforms in Bosnia and Herzegovina, highlighting the need for a renewed socio-economic modernisation effort by all segments of society to eliminate barriers to growth and prosperity. This research explained in details construction of the Reform Index that monitors the progress and impact of implemented policy measures. Such index should be able to periodically monitor the reforms, but also compare the situation in B&H with other countries.

In order to draw comparisons, indicators used in constructing the Aggregate Reform Index (ARI) are built on annual basis and offering the possibility for international comparisons. The ARI is aimed at monitoring the implementation of reforms and evaluating the BiH situation in comparison with its neighbors from former Yugoslavia and two other countries from the region (Bulgaria and Romania). The indicators to be used in constructing the aggregate index are selected among those provided by various international institutions that use specific measures for ranking the world countries according to particular criteria, such as facility to do business, economic freedom, corruption and rule of law, burden of taxation policy, etc. The five indicators to be used in constructing the aggregate index of reforms are therefore the following (according to the reform areas defined by the Compact): Labour Tax and Contributions (for the Taxes on work); Business Freedom (for Business climate and Competitiveness); Labour Freedom (for Labour regulations); Social Welfare Efficiency (for Social Welfare); Corruption Perception Index (for Corruption).

ARI is constructed both in graphical form (as a pentagon of reforms) and numerical form. According to the numerical values, BiH records the lowest index among the 8 selected countries. When considering the uniformity of reforms, in Bosnia and Herzegovina has the less uniform (consistent) reforms in the sample. Consequently BiH authorities need to concentrate their efforts in two main directions:

- Speed up the implementation of policy measures in those area that lag behind in terms of reforms – in particular Corruption and Business Freedom;
- Follow a consistent path of reforms by emphasising on a more balanced approach of those reforms across the five domains identified as prior areas of change.

Limitation of the ARI proposed methodology are in the fact that it shows only one aspect of the average reform progress in a country. The second important element which is not directly expressed by the ARI values, is the internal consistency of reforms; specifically, the ARI does not tell us if a country uses a consecutive or a simultaneous approach in implementing its reforms. Moreover, data collection is not under direct control of the beneficiary country, so it is difficult to follow which actions are bringing the best results, and data dependency is making it impossible to calculate the index in some specific timings.

It is important to highlight that calculations presented in this research are representing a baseline against which developments of the reform will be judged. Thence, the same group of indicators over extended period should be analysed in a form of the longitudinal research. In some cases, longitudinal studies can last several decades, but in this case it should be used as governmental tool for monitoring reforms; having in mind that goals or focuses can be changed, length of the research should be realistically analysed and decided in line with needs of its beneficiary.

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