GROWTH OF LABOR PRODUCTIVITY – THE PRECONDITION FOR THE INCREASE OF WAGES AND STABLE ECONOMIC DEVELOPMENT

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Growth of labor productivity – the precondition for the increase of wages and stable economic development

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Summary

The growth of labor productivity is the primary economic objective that enables strengthening of competitiveness of the domestic economy and stable development. In that sense, one of the basic management tasks, at the company level and in terms of the entire economy alike, is performance measurement. Monitoring of labor productivity indicators on macro- level is closely linked to managing economic development in several important areas such as competitive position in relation to the region, exposure to the informal economy, adequacy of labor legislation, education policy, public and private sectors wage policies, debt policy, etc. Despite its importance, the issue of labor productivity in Bosnia and Herzegovina has been neglected in the previous period, which is confirmed by the fact that not a single document (in both BH entities) related to economic policy has comprehensively addressed this issue, including the recently presented draft version of the 2016 Economic policy of the Government of the Republic of Srpska.

There are number of reasons why more attention should be paid to this economic indicator. Results of the performed analysis reveal that the domestic economy has been suffering from a chronic problem of low labor productivity for a long time. This problem is especially expressed in the Republic of Srpska, where GDP per person employed did not exceed 37.000 BAM in the last five years. Even though labor productivity is significantly low in the Federation of B&H as well, still, GDP per person employed has constantly been above that level and has a certain trend of growth (40.112 BAM in 2014). What additionally worries is the comparative data on the average labor productivity in member states of the European Union, which, measured in the same way, shows that B&H has reached only some 30% of the EU average (the Republic of Srpska 28.56%, the Federation of B&H 31.36%). The problem is even more serious if we consider the processing industry alone, where labor productivity is 6 to 7 times lower than the EU average. In other words, this means that an average employee in the processing industry in the EU creates more in one day than a B&H employee in a week!

If we look at GDP growth as the result of two key determinants, the number of employees and their performance, then this data accurately illustrates the magnitude of the problem of low labor productivity, which paired with huge unemployment jeopardizes the perspective of long-term and stable economic growth in B&H. Furthermore, low labor productivity limits possibilities for a sustainable increase of wages, both in the real and in the public sectors. Finally, what emerges is the issue of rising public debt and possibilities for its repayment if labor productivity does not grow significantly over the upcoming period.

For these reasons, measures of economic policy must steer to a new direction and, along with support to employment, prioritize the increase of labor productivity, especially in those fields and sectors that have been recognized as strategic. In practice, this requires a combination of systematic interventions stimulating higher **investment in human capital[1], technology[2], and infrastructure.** Setting a new course simultaneously means the review of the current measures of support for domestic companies,

[1]In terms of quality of education system, according to the 2015 Global competitiveness report, B&H is ranked 113th, while in terms of readiness of companies to invest in staff training B&H is ranked 137th out of 140 countries in total.
[2]The same report places B&H at 115th position according to investment in innovations, while in terms of readiness of companies to invest in research and development it takes 124th position.

especially in light of clear distinction between **economic support measures and social policy.** Despite being a politically sensitive issue, elements of social policy must be implemented within an integral system of social welfare, while measures of economic policy should be directed primarily to the increase of employment and productivity. Otherwise, additional delay will only speed up the movement along the negative spiral towards informal economy, low wages and worse living standard of citizens.

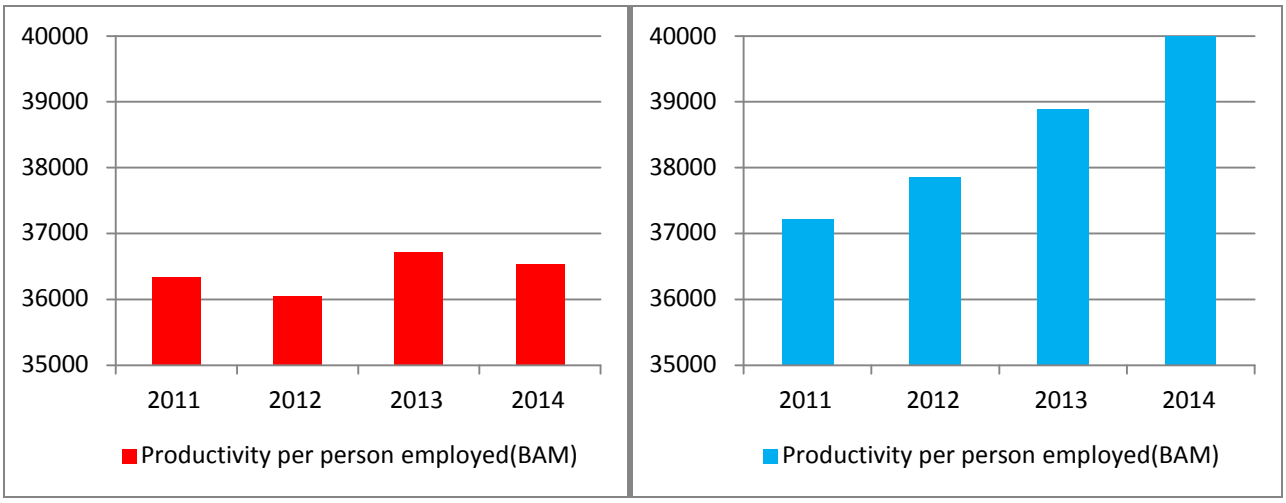
Labor productivity in the Republic of Srpska and the Federation of B&H

The starting basis and framework for this research was data on labor productivity in the Republic of Srpska, Federation of B&H, region and EU27. Through a unique methodological approach, authors tried to provide international comparability of obtained data. Therefore, the main EUROSTAT indicators of labor productivity were used:

- GDP per person employed
- GDP per hour worked
- Real unit labor costs

Since methodology for complete statistical monitoring of data on the total amount of working hours still has not been developed at the entity level, an indicator of comparative analysis of labor productivity concerning the relation between GDP and the total number of employed persons was applied. In line with that, below is an overview of data on labor productivity in the Republic of Srpska and the Federation of B&H for the past four years.

Graph 1: GDP per person employed in RS **GDP per person employed inFB&H**



Source: Institute of statistics of the Republic of Srpska and the Federal institute of statistics

Data from this graph point to very low labor productivity in the Republic of Srpska, which was 36.334 BAM per one worker on annual level in 2011. In 2012, labor productivity additionally fell by 0.8%, followed by

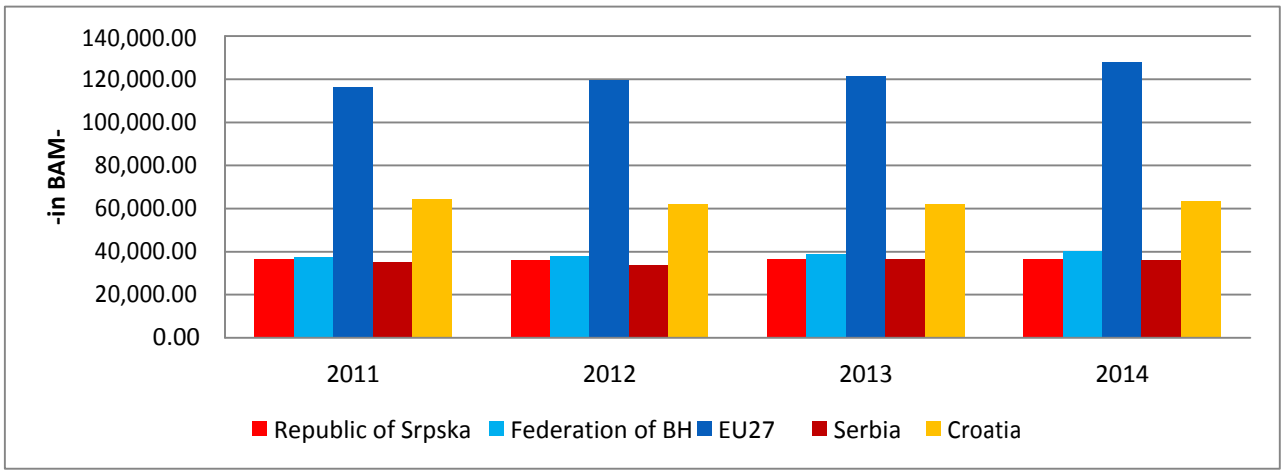
[3] Croatia has been an EU member since July 1st 2013. Since the research concerns the period from 2011 to 2015, Croatia was viewed separately from the EU.

certain growth of 1.85%, due to growth in industrial production (4.1%) in 2013.

On the other hand, the graph shows continuity in the growth of labor productivity in the Federation of B&H over the last four years. Also, during this period, labor productivity was constantly higher than in the Republic of Srpska. At the end of 2014, productivity per person employed was 40.111 BAM a year. Increase of labor productivity in FB&H was 1.72% in 2012, while in 2014 it was even better, 3.12 %.

However, considering these results in nominal terms, regardless of productivity growth, they are quite modest in both entities. In comparison with EU member states, the level of labor productivity in the Federation of B&H and the Republic of Srpska is very low. As for the region, Serbia faces similar situation, where, besides the very low level of productivity, oscillations occur as well, showing there is no constant growth. In Croatia, situation is somewhat different. Labor productivity indicators are better, even though there was no constant growth of productivity over the previous period.

Graph 2:Labor productivity indicators per country (nominal GDP per person employed)



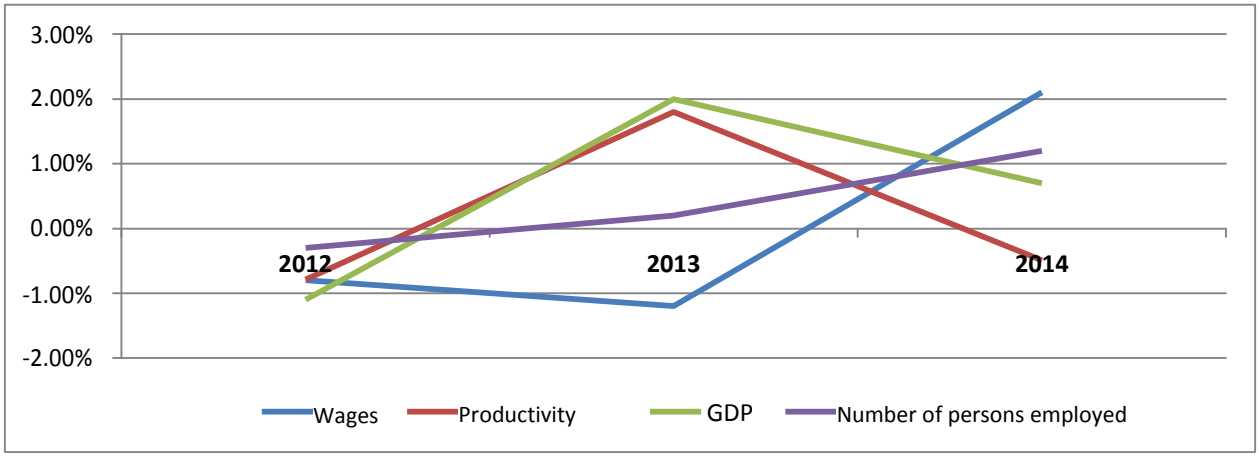
Source: IRBRS – economic indicators database, Institute of statistics of RS, Federal institute of statistics and EUROSTAT

Anyway, data on average labor productivity in countries of the European Union show how much B&H entities and neighboring countries lag behind in this important segment. From that aspect, the Republic of Srpska has reached only 28.56%, while the Federation of B&H 31.36% of the EU average.

Furthermore, in order to obtain a full picture on this indicator, it has to be viewed in broader context, including trends and movements of other related indicators such as: growth of wages, GDP growth and the total number of persons employed. If this data is also considered, then significant oscillations can be seen in the movement of wages, gross domestic product and the number of persons employed, especially in RS. In the 2013-2014 period, in the Republic of Srpska there was a trend of growth of wages on the one hand, with a fall of labor productivity and GDP stagnation on the other. Partially, this was a result of delay in adjusting productivity and wages from the previous period, but also of the fact that growth of wages has been funded from loans and borrowings during previous years. This important issue highlighted the problem of public spending, debt increase and public sector wage policy that GEA already warned about in

the previous period.[4]

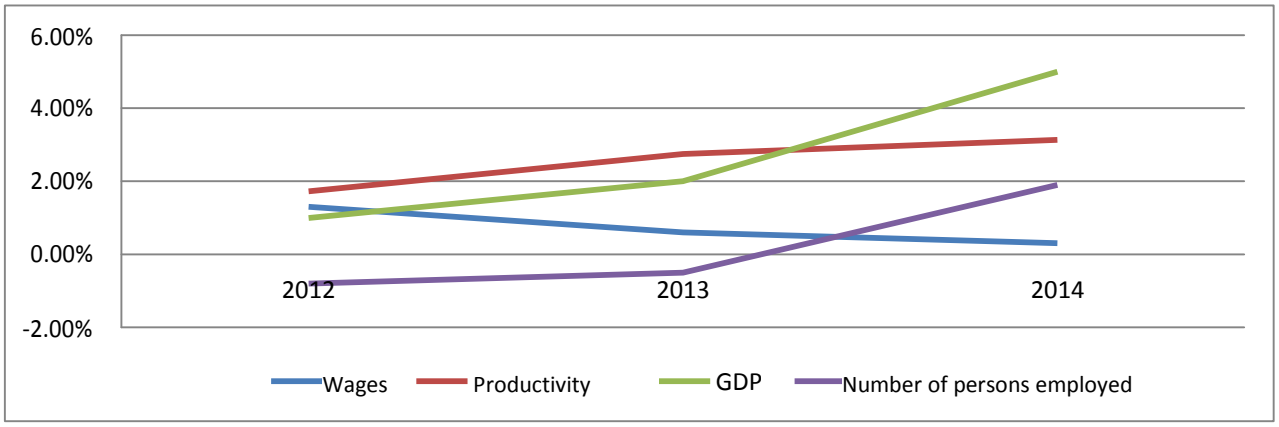
Graph 3:Index of growth of productivity, wages, employment and GDP in the Republic of Srpska



Source: Institute of statistics of RS

If we look at the Federation of B&H, comparative data show a somewhat better trend and constancy in growth of productivity, GDP and the total number of persons employed, which is, from the perspective of creation of preconditions for long-term economic development, surely a more favorable situation.

Graph 4:Index of growth of productivity, wages and GDP in the Federation of B&H



Source: Federal institute of statistics

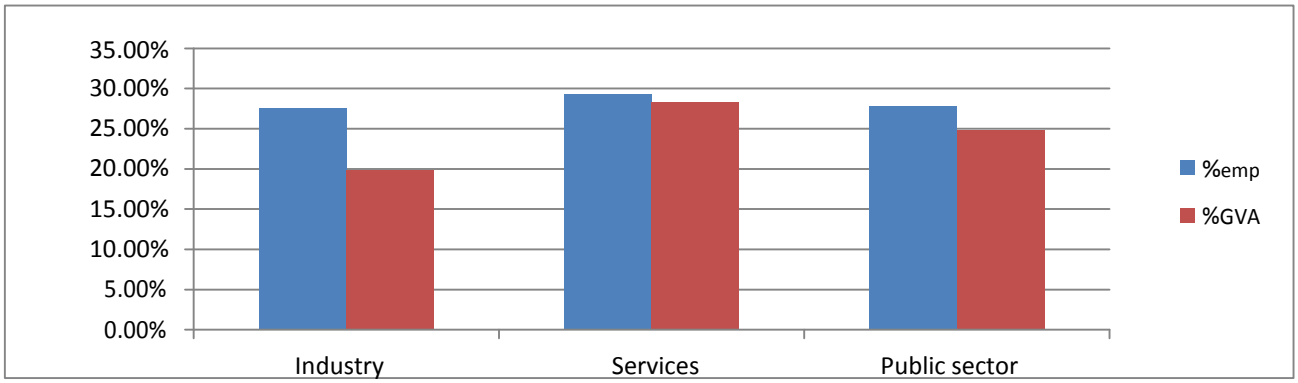
[4] http://www.gea.ba/reforms-in-the-area-of-employment-and-determining-of-wages-in-the-public-sector-of-rs-needed-the-sooner-the-better/

What are the causes of low labor productivity?

Based on the presented data, it is apparent that both B&H entities are facing an extremely unfavorable situation when it comes to labor productivity indicators. It was already mentioned that low labor productivity undermines the foundations of long-term economic growth and deteriorates the already weak competitive position of the domestic economy. Therefore, it is necessary to analyze deeper the causes of the problem, to parse and analyze labor productivity per sectors. For the sake of comparability, labor productivity was analyzed as the relation of gross value added (GVA) and the number of persons employed in certain sectors, where gross value added represented the difference between the total value of production (total output) and the intermediate consumption.

In terms of share in GVA, sectors of industry, services, trade and the public sector are dominant in comparison with others, because they create 73% of the total gross value added in RS, while employing as high as 85% of all persons employed. However, negative ratio exists between the number of employed persons and share in GVA for all three sectors. The most difficult situation is in industry, where the share of 27.53% of persons employed creates 19.89% of the total GVA. Situation is a bit better in the services sector, where 29.29% of workers creates 28.34% of the total GVA. The public sector has also a negative ratio, because 27.86% of persons employed creates 24.79% of the total GVA.

Graph 5: Share in gross value added and the total number of persons employed per sector



Source: Institute of statistics of RS

Further analysis of sectors and business branches revealed that the highest labor productivity was recorded in the area of information technology and communications (one worker created 94.082 BAM on average annually) and in electricity production and distribution (50.871 BAM per worker annually). On the other side, within the industry sector, the lowest productivity was realized in the processing industry in the amount of 15.719 BAM per worker annually. In comparison with the processing industry of the EU[5] that was even 6 to 7 times lower. Simultaneously, the annual amount of working hours of a worker in the processing industry of RS was 2.088 in 2014 and that was a little more than in other EU[6] countries, pointing to the conclusion that for approximately equal amount of working hours, workers in the processing industry of the EU created 6 to 7 times more value.

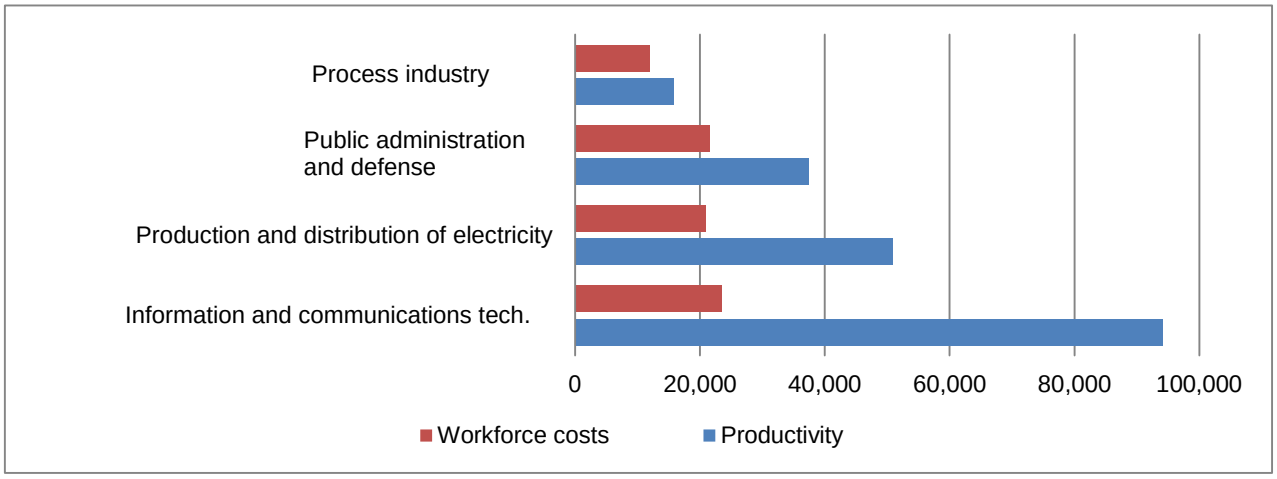
[5] EUROSTAT (online datacode:sbs_na_ind_r2)

[6] Average annual amount of working hours per worker in the eurozone was http://stats.oecd.org/Index.aspx?DatasetCode=LEVEL

Another important aspect of viewing labor productivity in the context of competitive position of the domestic economy is related to labor costs. Share of labor costs in gross value added indicates the product/service sophistication, character of specific business activity (labor intensive or capital intensive) and its attractiveness for investment.

Therefore, if we join data on average labor costs per sectors and the previously presented data on productivity (graph 6) we can see the low productivity and high participation of labor costs in the processing industry of RS, where the difference between created added value and labor costs is minimal. This points to the conclusion that this sector produces products/services with low added value which doesn't leave any space for potential increase of salaries or higher profit margins.

Graph 6: Productivity and labor costs per sectors (in the Republic of Srpska in 2014)



That space has additionally been decreased in 2008 when higher taxes and contributions on wages in the Republic of Srpska were imposed. Such intervention only increased labor costs, without necessary measures on the other side that would increase productivity. This intervention especially affected small and micro enterprises with low labor productivity, with serious impact on their business, whether in terms of them being forced to decrease wages, lay off workers or transfer some of their activities into the zone of informal economy.

In contrast, the same graph shows that difference between created value and labor costs is significantly greater in sectors such as information technology and communications and the production and distribution of electricity. Despite of wages being above average in these sectors, in some cases even three times higher than in the process industry, the participation of labor costs in the creation of added value is relatively low. Enough space for additional increase of wages, profit margin does exist in these sectors, because they offer products/services with higher added value and, therefore, investors are also more interested in investing there.

The next table provides a simple illustration of data for two selected sectors (production of footwear and creation of computer programs) as extremes in terms of labor productivity indicators in the Republic of Srpska.

Table: Comparative indicators of labor productivity in RS for two selected sectors: production of footwear and creation of computer programs

Sector: Production of footwear		Sector: Creation of computer programs	
Total income of 10 biggest companies in the sector (in BAM)	151.280.216	Total income of 10 biggest companies in the sector (in BAM)	116.935.012
Total number of employees in 10 biggest companies in the sector	6.335	Total number of employees in 10 biggest companies in the sector	445
Income per one employee inBAM	**23.880**	**Income per one employee inBAM**	**262.775**
Labor costs in relation to total income	41,1%	Labor costs in relation to total income	14,7%

Source: data from APIF for 2014

How to increase labor productivity in the Republic of Srpska and B&H?

Above mentioned figures and findings lead to the conclusion that increase of labor productivity and creation of products with higher added value is urgently needed, especially in strategic sectors with potentials to generate new employment. Increase of labor productivity is, undoubtedly, the basic precondition for the desired wage increase and long-term and stable economic growth.

To succeed, it is necessary to undertake systematic interventions addressing key causes of low labor productivity. It is important to emphasize that causes of low labor productivity in the Republic of Srpska must not be attributed only to the action of a single factor, nor can these factors be viewed individually (e.g. only through the prism of workforce engagement – workers who are not sufficiently engaged in the process of work). Labor productivity is determined by a series of strongly interdependent internal and external factors. So, besides external factors such as: socio-political system, economic policy, labor legislation, etc, labor productivity is also determined by other specific factors at the company level such as internal organization technological processes at company level, management skills and skills of employees. Therefore, the increase of labor productivity demands balanced approach and a combination of measures of economic policy and systematic interventions in more directions simultaneously, with **investment** as the key word – investment in **technology, human capital and organizational development.** In addition, experiences from other developed economies have shown that labor productivity grows by using modern equipment and advanced technological solutions, by investing in workers who are able to accept and use modern technology and produce more in less time.

Encourage investment in business infrastructure, technological development, equipment and innovations

Investment in equipment and technological progress is the key presumption for productivity growth. Even though comprehensive survey still has not been done in the Republic of Srpska and B&H,someestimates are that the average age of equipment in the domestic industry is around 25 years[7]. In comparison, according to EUROSTAT data, the average age of machines and industrial equipment in EU countries is 9,67 years.

From perspective of overall technological development, it is important to consider the total structure of economy and industry as well. In terms of global technological intensity of industries, RS and B&H belong to the group of economies with low-technology industries whose structure is made of: wood processing and

production of furniture, production of paper, textile, clothing, leather, etc. For example, high-technology industries are: space, pharmaceutical, production of computers, electronics-communications, production of precision measurement instruments, while medium high-technology industries include: production of electrical machines, vehicles, chemicals (except pharmaceutics), other transportation assets, machinery and equipment.

Therefore, changes in the structure of economy and within industry are necessary and they cannot be made without previous investment in research, innovations and development of technological base. If we consider only the Republic of Srpska, data from the Institute of Statistics of RS for 2012 reveal that only every fifth company implemented at least one innovative activity. Therein, company investment in innovative activities included internal activities of research and development, external services of research and development, purchase of machines, equipment, software and buildings, purchase of existing knowledge from other companies or organizations, training in innovation introduction of innovations to the market, design, etc. This means that,in the last three years, even four of five companies, or close to 80% of all registered companies, did not realize anything stated above. Furthermore, budgetary allocations for support to research and development are in decline each year[8], so, bad positioning of B&H in the global context of competitiveness does not come as a surprise.

It is impossible to maintain a competitive position or to create products with higher added value in open market conditions without implementing innovative activities. Therefore, it is necessary to set an entirely new course as soon as possible and focus more on support to investment in innovations and the creation of products with higher added value. Simultaneously, **opportunities should be sought for investment in those sectors having high potential for growth and a chance for multiplications.** In those sectors it is necessary **to work on strengthening** the existing **valuechains** or on their creation if they still do not exist. Besides, **investments in infrastructure** (telecommunications, roads, air transportation, railways) **directly influence labor productivity at the level of an entire economy.**

At the company level it is necessary to use stimulation measures to encourage the introduction of more modern equipment and advanced production and technological processes required for making products with higher added value. Current approach, in which high fiscal and parafiscal charges first are used to take significant resources from companies, after which only smaller amounts are returned to them through subsidies and incentives, has to be transformed into an approach striving towards relieving the economy from burden and where **the transfer of knowledge** will have priority in relation to the transfer of money. In that sense, it is necessary to consider the rationality of current measures of support to domestic companies and **separate measures of economic policy from measures of social policy**, i.e., elements of social policy

[7] Source: Association of employers of B&H

[8] Statistical estimates show that B&H spends 0,1% of GDP for support to research and development. In EU countries that percentage ranges from 1,5% to 3%ofGDP.

should be implemented within an integral system of social protection, while measures of economic policy should be directed primarily towards the increase of productivity.

Encourage investment in human capital

Using modern equipment and advanced technological solutions without investment in human capital can have only limited effects. Only those workers who have previously been trained to accept and use modern technology can produce more in an equal or less amount of time. In that sense, **investment in human capital means continuous work on vocational training and education of workers to be able to use modern technologies and to become more productive.** Investment in human capital is a demanding and long-term process for which companies from the Republic of Srpska and Bosnia and Herzegovina are still not ready, according to reports on global competitiveness. This is partially due to the fact that education system is not able to provide workforce that could meet the demands by the economy, and most companies are not able to use their own funds to invest in vocational training and education of workers. This is especially present in micro, small and medium enterprises, where labor productivity is relatively low and which often operate in the zone of informal economy. In such circumstances, companies strive to preserve their competitive position by cutting expenses and reducing investments to a minimum, including investments in workforce, with high labor taxation as but an additional weight upon their shoulders. Therefore, measures of economic policy have to be used to provide domestic companies with possibility to strengthen their competitive position by investing in human capital, and to encourage the transfer of knowledge and professional training and retraining of employees. Since the effects of necessary education system reforms and its harmonization with needs of the economy can be expected only in long-term, in the meantime, it is necessary to increase capacities of the exiting workforce through a more active approach of labor market institutions and through programs of informal education.

Investing in human capital means higher motivation among employees as well. **Employee motivation** is most often associated with financial and other work conditions. If we look at the financial aspect and compare **wagesin the public and real economy sectors**, employers in the real economy sector are under great pressure and workers are not motivated for good reason. The average wage in the public sector (public administration and defense, social security, education, healthcare and social welfare) was 1.000 BAM in 2014, while in the real economy sector (including financial sectors as well) it was 743 BAM. Furthermore, the difference in the amounts of wages is not a result of higher labor productivity in the public sector, but a consequence of a series of, primarily, political decisions from the previous period, which GEA has warned about before as well as about the fact that weak economy in the Republic of Srpska cannot finance such a big and expensive state apparatus[9].

Finally, there is certain room for intervention on internal factors of influence, including **better work organization within a company and a more effective award system**, which is directly related to realized results. Except financial motivation, labor productivity level can be influenced also through the action of other internal factors such as **the creation of a more pleasant work environment, better work conditions and atmosphere, work flexibility** depending on the work post, etc., which demands a certain degree of management skills, in order to establish the highest level of business organization and work processes.

[9] http://www.gea.ba/public-sector-wages-policy-needed/

Experience has shown that significant area for improvement exists in this segment, because of which **special attention should be dedicated to the advancement of management skills, especially in family companies,** where management functions are, almost by rule, still performed by owners of the capital.

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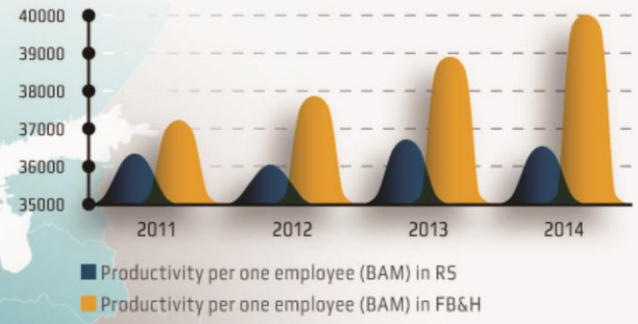
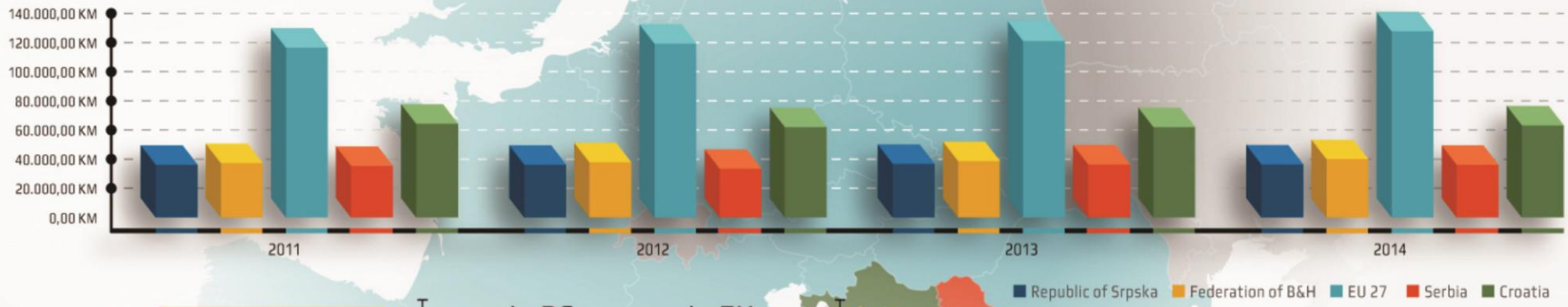
LABOR PRODUCTIVITY
IN B&H

GDP per one employee in RS and FB&H



Labor productivity indicators per countries (nominal GDP per one employee)



PRODUCTION OF FOOTWEAR

CREATION OF COMPUTER PROGRAMS

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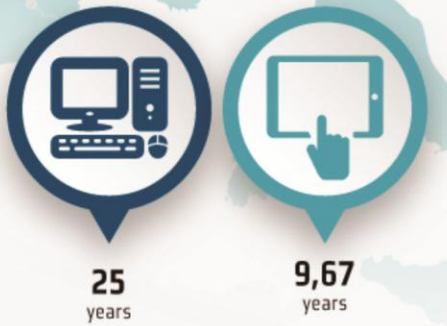

Average age of machines and industrial equipment

Investment in equipment and technological development is the key presumption of productivity growth.

Relation of productivity and labor costs per sectors (for the Republic of Srpska in 2014)