



**Analysis of impact of  
„Tax Reform for the Purpose of Investments and Employment“  
on the poor  
in the Federation of Bosnia and Herzegovina**

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## Introduction

Recessionary trends in the economy of the FBiH which started in 2009 have continued during the past year. These trends are largely caused by the global financial crisis, by weakening the external demand, impeded lending to businesses, as well as by the internal weaknesses and lack of structural reforms in the FBiH. There is a serious risk of long-term stagnation and recession in EU countries and in the region, which have further negative effects on the economy of the FBiH.

In the previous period, after the outbreak of the global financial and European debt crisis, there was a reduction in economic activity in the FBiH, and only in 2013 we saw a slight recovery. Many European countries, including BiH, are struggling with fiscal consolidation. The goal is to restore fiscal balance and preserve the stability of the banking sector. In the long run, economic growth is the key to debt management, and to reduce the fiscal and foreign trade deficit.

Unfortunately, in the last six years, in addition to economic stagnation, we are faced with downsizing the number of employees. Employment is one of the key factors of progress and well-being of a society. In this connection, it is clear that it is necessary to take certain structural reforms to increase productivity and competitiveness of the domestic economy in order to increase investment, employment and overall economic growth.

Such a reform is presented in the document "Tax Reform for the Purpose of Investments and Employment" (hereinafter referred to as Tax reform) by the Federal Development Planning Institution (hereafter the Institution). The document was drawn up in late 2011 with the aim of employment and investment growth, and the establishment of a more efficient tax system in the FBiH. The essence of the reform is to significantly relieve the economy by reducing direct taxation of labour, compensating for the missing public revenues by taxes that do not burden the economy (neutral character of the tax reform). In this way, the competitiveness of the local economy is increased and conditions are created for the reduction of the main macroeconomic imbalance characterized by a high unemployment rate and high foreign trade deficit.

The Tax reform document did not include the impact of the reform on the socially most vulnerable segments of society.

Taking into account the social situation of the population in the Federation of BiH on the one hand and the need for reforms on the other hand, the Institution has started preparing the analysis of impact of the proposed tax reform on the most vulnerable populations, i.e. on the poor. Such an analysis is essential given that the poor are the most vulnerable category which can be further weakened and pushed deeper into a situation of social need by the changes in tax policy. This analysis will examine the

static impact of the tax reform on household consumption in the FBiH on the one hand and the impact of obtaining health insurance for poor categories of society on the other hand, considering that the reform includes coverage of the entire population with health insurance.

Since this is a static analysis, a significant limiting factor is the dynamic movement of the observed variables and their interaction. Another important assumption, which is not very likely in reality, is that companies will eventually transfer the entire possible VAT increase to end customers through price increase. To what extent will the VAT increase will be transferred on to end-users in practice depends on many factors, but the key factor is the competitive position of each individual company.

Given that the main challenge for the governments in financing their health care systems is an efficient and equitable way of raising revenues to provide basic health care services to individuals, it is necessary to analyze the expected impact of the reform on the most vulnerable populations. On the one hand, health insurance for the entire population of FBiH brings tangible benefits to vulnerable segments of the population, and on the other hand any possible VAT increase may bring new price increases, which could adversely affect the standard of living of the population.

The overall objective of the analysis, in case of implementation of the reform, is to quantify the expected benefits and costs for the most vulnerable populations. Quantification of the costs and benefits of the reform contributes to the professional debate on the Tax reform. In that sense, this analysis will:

- Analyze the impact of the reform in the society, especially the impact on the poor segments of the population,
- Assist in understanding the effects of the reform and addressing possible negative impacts.

The analysis consists of a summary, a brief overview of the proposal of the tax reform, the theoretical framework, the methodology and assumptions of the impact calculations, the method of measuring poverty, poverty indicators, a review of the state of poverty in the FBiH, the findings and the effects of the impact of the tax reform on the poor, and the conclusion.

The data that we will use are the data of the statistical institutions, and the data from the 2011 Household Budget Survey is of particular importance to us.

## Summary

The analysis of the impact of the document “Tax Reform for the Purpose of Investments and Employment” on the poor in the Federation of BiH is a limited empirical analysis of the effects of the tax reform on the poor segments of the population in the FBiH. The essence of the proposal of the tax reform is to transfer the tax burden from labour to other forms of taxation that do not burden the economy. The aim of the reform is to increase the competitiveness of the domestic economy, employment, investment, and overall economic growth.

The analysis used the micro-simulation model based on data from the 2011 Labour Force Survey. This is a model of the expected direct effects of the tax reform, i.e. the benefits and costs for households and individuals.

A positive side effect of the tax reform is the provision of access to the health care system for all citizens of the Federation of BiH, and therefore for the poorer segments of society. The analysis does not include the effects of the tax reform on other segments of the society and it is of limited nature in that part.

The goal of the analysis is to show how the tax reform will affect the poor segments of the population, if its implementation could include the VAT growth.

Tax reform precisely shows that it is unlikely that there will be a rise in prices due to any growth in the VAT rate, because the savings in the economy due to relieving and reducing the labour taxation are significantly higher than the costs in the event that a VAT increase is at the expense of business entities, and not at the expense of citizens.

However, in order to analyze the impact of the reform on the poor, we started from the “worst” assumption for the citizens that the potential VAT rate growth will cause an equivalent increase in prices and be transferred in its entirety to at the expense of citizens.

The conclusions of the analysis tell us that the impact of the reform on poverty reduction is positive in all variants of a possible VAT increase and any price increase based on this. The largest reduction of poverty is in the proposal with the lowest percentage increase in VAT.

Taking into account all defined assumptions, estimates, calculations and findings, the analysis showed that tax reform and a possible VAT increase resulting from it, not only will not worsen the condition of the poor populations, but the number of the poor in the FBiH will be significantly reduced. In other words, the positive effect of the giving the vested right to health care to the poor people is stronger than the negative effect of a possible VAT increase and the assumed price increases on that basis.

According to the concrete proposal of compensation for the “lost” revenues of public sector due to relieving the economy, on page 25 of the document Tax Reform for the Purpose of Investments and Employment, it is proposed (if other measures are not sufficient and as a last resort) to increase VAT in proposal 1, variant III, to 18%, and in the proposal 2, variant III, to 19%.

Analyzing these two proposals, it is clear that in the first version (VAT rate 18%), the number of the poor would be reduced by 72,028, from 464,418 before the reform, to 392,390 after the reform.

In the second version (VAT rate 19%), the number of the poor would be reduced by 66,285, from 464,418 before the reform, to 398,133 after the reform.

Despite the fact that the first variant significantly reduces the number of the poor, the second variant is more favourable because it contributes more to the realization of the key objectives of the tax reform.

The conclusions of the analysis relate to the direct short-term effects of the impact of the tax reform on the poor, while the theory suggests us that in the long term, with an expected increase in competitiveness of the local economy, employment and investments, the positive effects would be significantly higher.

## **The proposal of tax reform**

The document Tax Reform for the Purpose of Investments and Employment, proposes the implementation of the tax reform by a significant reduction of direct taxes on salaries, as follows:

- Contribution for health care is reversed,
- Contribution for unemployment benefits is reversed,
- Income tax remains the same as before in variant I (44.23% cumulative net salary tax rate), and in variant II (36.06%) is reversed,
- The rate and collection of contributions for pension and disability insurance (hereinafter: PIO) remain the same as before.

Since the amount of pensions depends directly on the payment of contributions for pension-disability insurance, we think that the rate and method of payment of PIO should remain the same.

Compensation for the missing public revenues due to the reduction of direct taxes would be executed as follows:

- Savings in the public sector,

- The introduction of other, in the terms of economic growth, more efficient forms of direct taxes which do not burden the economy (real estate tax, tax on winnings from games of chance, tax on transactions of financial institutions and international payments, tax on car registration services, tax on luxury cars, tax on telecommunications services using the cellular network, tax on uncultivated agricultural land, tax on unused entrepreneurial real estate, tax on undeveloped building land)
- Increasing the excise taxes on high-tariff goods, and finally, as a last resort,
- Increasing the VAT rate, if necessary.

These solutions could be combined with the introduction of progressive taxation of salaries (salary grades), taxation of hot meal allowance and other personal income (transportation costs, etc.), reducing the threshold for coverage of VAT payers, the abolition or reduction of parafiscal charges of the economy (water contributions, contribution for forests and tourist boards), etc.

Tax reform has a neutral character, which means that revenues to be lost by the public sector because of relieving the economy will be entirely made up for savings in the public sector and other forms of taxation that do not burden the economy.

## **The theoretical framework**

Basics of economic theory teach us that high taxes lead to higher prices and lower demand. The workforce in this case is no exception, greater taxation of labour reduces employment (Nickell and Layard, 1999, Bassanini and Duval, 2006), makes production less profitable and encourages greater use of capital-intensive methods of production (OECD 1990).

This logic, with increased unemployment in the EU, contributes to the increased interest in reducing labour taxation. High labour taxation is becoming recognized as a key obstacle to increasing the competitiveness of the domestic economy and employment growth. At the same time, reducing labour taxation implies compensation for “lost” assets in order to avoid disturbances in the public sector.

In Europe, such initiatives take hold and are called differently, “internal devaluations”, “fiscal devaluations”, in France “social VAT”, and the form is the same, revenue-neutral reform with the change in the structure of public revenues from revenues from labour taxation to revenues from consumption taxation (Portugal and France are going in this direction). Such a solution was implemented in Germany in 2007, where 1.15 percentage point reduction in contributions on salaries was financed by increasing the VAT rate. Also, in Hungary in 2009, 5 percentage points reduction in contributions is financed by increasing VAT (Mazzaferro & StefanoToso, 2009). Such minimum measures and changes in the structure of public revenues that stimulate

economic growth give a result in regulated economies with developed economy. BiH is at the very bottom in the EU and region by the competitiveness of the domestic economy, and since 2006 to date the gap between BiH as the last and penultimate economy by the competition (before it was Albania, and in the past two years, Serbia) is constantly increasing. That means that if we want to significantly increase the competitiveness, employment and economic growth in general, we need more radical reforms of the tax system. One of credible methods of such reforms is presented in the document "Tax Reform for the Purpose of Investments and Employment" by the Federal Development Planning Institution.

In 2012, the Organization for Economic Cooperation and Development (OECD) published a study on the impact of restructuring revenues from direct tax revenues to indirect tax revenues, on the status of work activity in 13 European OECD member countries (Alastair Thomas, July 2012). The conclusions of this study show that the tax reform of this type most increases the employment rate of low skilled labour, which is especially important for BiH, considering the fact that 89.9% of the working age population in BiH has a primary and secondary school education (2014 Labour Force Survey). At the same time, the private consumption of low skilled labour will increase, which will lead to an increase in revenues derived from consumption tax. For the tax reform, an important issue is the equality of distribution of the reform burden. Therefore, the focus should be on alternative sources of compensation for funds lost due to the tax reform, but not limited to VAT (Alastair Thomas, 2012). The proposal of the tax reform in the FBiH is in accordance with these recommendations since the increase in the VAT rate is considered only as a last resort, after a whole series of other measures.

A similar reform of relieving the economy was submitted and presented in the Republic of Serbia (Arsić, Altiparmakov 2010). Then the Ministry of Finance supported this type of reform. The reform proposal meant a revenue-neutral reform of the abolition of health insurance, VAT increase by 4 percentage points, and more progressive taxation of salaries. The Serbian government has not implemented this reform so far, mostly because some parties that participated in the previous Serbian government during the election campaign promised that the VAT rate will not increase. Also, due to the high overall VAT rate in Serbia, the question is whether the kind of the tax reform advocated by the Institution is possible.

Making impact assessment of specific reforms in BiH is not as common. One of the few is the one done by the Economic Policy Planning Unit (EPPU) - today's BiH Directorate for Economic Planning (DEP). In 2005, they made a "Proposal of measures to mitigate the effects of rising prices of basic foodstuffs due to the introduction of VAT". The document contained a brief overview of poverty in BiH, an overview of the social protection system in BiH, an analysis of consumption in BiH, the assumptions taken into account in the drafting of the proposal of measures to mitigate the effects of rising prices of basic foodstuffs due to the introduction of VAT,

a brief analysis of the elements that can affect the price movement after the introduction of VAT, a projection of increase in revenues from VAT and the necessary resources to mitigate the effects of rising prices. Finally, the document gave an overview of the earlier and a proposal for the next activities. Based on data from the 2004 Living Standard Measurement Survey in BiH, the effects were analyzed of rising prices due to the introduction of VAT on 10 basic food and non-food products which are the basis of the subsistence minimum in Bosnia and Herzegovina. Food groceries included flour, bread, milk, oil, and sugar, and non-food groceries included personal hygiene products, detergents and household cleaning agents, utilities included water and electricity, and energy-generating products included the household firewood.

It is estimated that, for the purpose of annulling the effects of VAT on the poor in BiH in 2006, based on the increase in prices of 10 basic foods and supplies it is necessary to allocate KM 43.48 million, of which KM 24.12 million for the FBiH and KM 19.36 million for the RS (Directorate for economic planning, 2005).

Improving health and health care of the population are priorities for poverty reduction and sustainable growth. However, poor individuals often sacrifice their health care, because they cannot afford to pay the necessary fees for additional costs (participation, drugs, etc.). Therefore, their health is getting worse, which pushes them further into deeper and deeper poverty.

Revenues for the financing of health systems are collected from public, private and external sources. Governments collect revenues through direct and indirect taxes. So collected revenues for health care are then transferred to the health care sector in the form of internal transfers, subsidies and donations. Mandatory contributions for social health insurance are paid by employees, employers and self-employed. Private income for health care include voluntary premiums paid by households for private insurance and customer payments by patients directly to public and private service providers. Some private health care providers and pharmacies have only income from payments by service users.

The way in which the functions of financing the health care are designed has different financial impacts on the government, health insurers, service providers and consumers, which has a significant impact on achieving outcomes/final results of the health care system. It also affects the amount of health care funds that are spent on the different forms of health care, justice in health care revenue collection from public and private sources, and the distribution and effectiveness of cost management of health care.

## **The methodology and assumptions**

Consideration of the issue concerning the impact of the tax reform is a broad topic and the impact on the economy and society as a whole is unmistakable. However, in this document, our interest is focused on the impact of the reform on the most vulnerable populations through the approach of direct measurement of the impact, which implies a simple kind of analysis of the impact on the position of the analyzed group (population below the poverty line - border). This type of analysis assumes that there will be no significant changes in the behaviour of households that are analyzed, for example, price changes will not bring a change in the amount of consumption. The used method of measuring the direct impact includes an analysis that predicts the distribution impact of components of benefit and cost at the individual level.

The document Tax reform proposes two variants of relieving the economy. The first involves the abolition of contributions for health insurance and unemployment. The second version includes the abolition of contributions for health insurance and unemployment, and the abolition of income tax. In order to compensate for the “missing revenues” to public sector, the Institution proposes the savings in the public sector, the increase and the introduction of new taxes that do not burden the economy, and if necessary, as a last resort, an increase in the VAT rate. The increase in the VAT rate is an unpopular measure on the one hand, but also implies compliance with state institutions in the BiH Fiscal Council, so that more efficient and easier to adopt measures would be the measures under the jurisdiction of the Federation of BiH. In this sense, a much more powerful effect would be achieved if, in the implementation of the tax reform, the VAT rate would not have to be increased.

Abolition of contributions for health insurance includes health care financing by the Beveridge model through taxes. Given that the proposed reform involves financing of the health system from taxes and from the budget, it is natural that all citizens are entitled to health care. This is an important positive side effect because the proposed reform provides for the right to health care of all citizens of the FBiH. The load on the Employment Offices with “fictitious unemployed” who apply to registers of Employment Offices in order to exercise the right to health care, because with the tax reform, all citizens of FBiH would have health insurance by default.

Since the document of the tax reform did not include measurement of the impact of the reform on the most vulnerable part of the population, this analysis aims to assess the impact of the reform on the poorest categories of citizens in the FBiH through a simulation on the micro-data from the 2011 Household Budget Survey (HBS).

Since the VAT is seen as the most direct way to influence the standard of living of citizens, this analysis is concerned with assessment of impact of the reform in the case of a VAT increase on the one hand, and on the other hand, with giving the vested right to health care to every citizen of the FBiH, including the poor residents of the community.

The analysis uses the standard methodology of the World Bank to measure poverty, which is also used by statistical institutions in BiH.

The simulation consists of three parts. The first part relates to simulation of the effects of a possible rise in prices on an increase in poverty. The second part relates to the effects of poverty reduction through the positive impact that the reform would have on the poor category, since the uninsured poor people would be covered by health care. The third part relates to the combining and summarizing these two impacts.

The analysis of the impact of the tax reform was based on several assumptions.

The first assumption to simulate the impact of the reform is that the standard of living of citizens who did not exercise the right to health care, for any reason, will improve after the reform, as they will gain the right to health care. The poor segments of society, through obtaining free health care, receive a cash equivalent of health services (applied into the calculation in the final finding) and thus improve the standard of living.

The second assumption is that an equivalent amount of money for which the standard of living one uninsured adults would improve after the reform corresponds to the minimum voluntary payment of health insurance for an adult in the amount of about KM 60.

The third assumption is that any changes in the prices of basic necessities will not affect the change in the total household consumption.

The fourth assumption is that the entire amount of the possible VAT increase will be transferred to final consumers through a price increase.

The fifth assumption is that the Tax reform will not affect the net salaries, which in the analysis remain the same, i.e. that the gross salaries will be reduced and adapted to the new tax policy.

The sixth assumption is that the health care system at the level of current consumption, while increasing efficiency, will be able to absorb additional insured people and that the demand for health services will not significantly increase.

The key sources of information in the document are the 2011 Household Budget Survey, and other available statistical data.

## Measuring poverty and indicators

Measuring poverty in BiH started with the Living Standard Measurement Survey, which was conducted for the first time in 2001, and repeated in 2004. From 2004 until today, poverty is measured by the Household Budget Survey (HBS).

Each HBS classifies consumption expenditures according to the COICOP classification in 12 categories: (1) food and non-alcoholic beverages, (2) alcoholic beverages and tobacco products, (3) clothing and footwear, (4) housing and utilities, (5) furniture and household appliances, (6) health care, (7) transport, (8) communication (9), recreation/leisure and culture, (10) education, (11), restaurants and hotels, (12) other products and services.

For all products, annual consumption is calculated for each household. In the analysis of absolute poverty, the total household consumption does not include spending on health care, while the analysis of relative poverty includes health care spending.

Expenses per household member are simply calculated by dividing the total expenditure by the number of household members. They were used in the analysis of absolute poverty, while the analysis of relative poverty used expenses according to adult equivalent. The actual size of households is converted to the size measured by the number of adults according to the modified OECD II equivalence scale.

Analysis of poverty helps to focus the government and civil society on the poor and the conditions in which they live. In practice there is no single measure for determining the poverty line (border), but a number of different concepts and indicators are used, which in fact reflect two basic roles that the poverty line should have. The first role of the poverty line is to determine the living conditions which, when met, make a person is no longer considered "poor". Another role of the established poverty line is to allow different comparisons, comparisons of poverty line in families of different sizes and demographic structures, of families living in different places, and comparisons in time. In this way, the expenditures necessary to meet basic needs and avoid poverty are specified.

To make a poverty indicator credible and reliable, it needs to fulfil both roles of the poverty line or to be at least part of the set of indicators that give a complete picture of the state of poverty in a society. In practice, poverty is often defined as absolute and relative.

Absolute poverty is defined as the level of consumption expenditure that is lower than a certain threshold, depending on the price of certain consumer package. First, we define the package, which, according to a certain criterion, contains the necessary products, and then calculate its value by adding all values obtained multiplying the

quantities by the prices of products from the package. This value is taken as the minimum level of consumption a household must meet in order to attain consumption expenditures in accordance with the given “sufficiency” criterion, below which the households are considered poor, given that their consumption does not reach a certain level. The “sufficiency” criterion that is used here and that is in accordance with the proposal of the World Bank (2003) refers to the minimum calorific value of a food consumption package. People need food to survive, i.e. a certain number of calories, vitamins and protein is necessary to maintain life and keep energy needed to live, work and participate in the human community. Nutritionists have calculated minimum caloric requirements that individuals must take according to their age, gender and level of effort spent. When the table with minimum caloric needs is defined, the appropriate quantities and amounts are calculated based on the market price for each product. In practice, this process must be adapted to the individual country, and the actual dietary habits of individual and conditions in which the individual lives. The monetary value of the minimum food consumption package will indicate the minimum food expenditure level under which the households are considered poor (poverty threshold, so-called. general line - poverty line). Absolute poverty line does not measure poverty relative to other layers of society, but instead seeks to define the minimum values of consumption that is necessary to any person regardless of time and place.

Relative poverty is defined as the level of consumption expenditure that is lower than a certain threshold, depending on the total consumption expenditure of the entire population. Once all households are ranked according to the level of consumption, one arbitrary part of the median<sup>1</sup> of expenditure value will indicate the threshold below which households are considered poor, if their spending does not reach a certain defined level. Therefore, households are considered poor compared to the others if, for example, the median of consumption rises only because the middle- and high-income households have higher consumption, then the poverty threshold will rise, and thus the number of households that are considered poor will be higher. Regardless of the absolute needs, people may consider themselves poor when their living standard is well below the standard of others in their country. This form of poverty is expressed by relative poverty line, which defines poverty in comparison with “typical” national standard of living. The relative poverty line has one big disadvantage. It is not possible to monitor changes over time on the basis of it. Relative assessments of poverty over time cause confusion when evaluating the changes in inequality and changes in the state of poverty<sup>2</sup>.

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<sup>1</sup> The median (medium, central value) is a term from statistics that determines the distribution centre. One half the value of a set (distribution) is located above the median, and one half below. The median is less sensitive to extreme values than the arithmetic mean, which makes it particularly suitable for irregular asymmetrical distributions.

<sup>2</sup> For example, if the incomes of all inhabitants of a country increases (decreases) by X monetary units, the percentage of relatively poor people will not change even though the life standard in the country has improved (deteriorated).

When it comes to poverty indicators, the most important indicators are the size and the gap of poverty.

Poverty incidence is the percentage of poor people in relation to the total population.

The poverty gap represents the average distance of consumption of poor people from the poverty line (border). The poverty gap is expressed as a percentage of the poverty line.

## **The status of poverty in BiH and FBiH**

Last year 7 poverty lines (borders) were done in Bosnia and Herzegovina, 3 relative and 4 absolute poverty lines. The relative poverty line for BiH is published by the BiH Agency for Statistics<sup>3</sup>.

This analysis will use the absolute poverty line of 2007 published by the BiH Agency for Statistics updated with inflation in 2007-2011. Below, we call this poverty line the absolute poverty line. Data analysis below refers to data from 2011, when the Extended Household Budget Survey was conducted.

The absolute poverty line (border) in BiH in 2011 amounted to KM 238 per household member in the prices of 2007. This means that a three-member household is considered poor if their total income on all grounds (salaries, pensions, social assistance, sales of own products, transfers from home and abroad, etc.) is less than KM 714 (KM 238 x 3 members) in the prices of 2007.

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<sup>3</sup> The relative poverty line for the RS published by the RS Republican Institute for Statistics. In 2011, the International Bureau for Humanitarian Issues - IBHI did the relative poverty line for the FBiH. In 2007, the BiH Agency for Statistics did the absolute poverty line for BiH, which was updated for 2011 by the IBHI in cooperation with the World Bank. The Republican Institute for Statistics did the absolute poverty line for the RS. The IBHI used the updated poverty line for BiH for the purposes of updating the poverty profile in the FBiH. In addition to these practically three poverty lines, in 2007 the World Bank published the absolute poverty line, which is methodologically different from the poverty line published by the BiH Agency for Statistics.

**Table1: Estimated height of the absolute poverty line per month for one-member and household three-member household on the basis of data on inflation (CPI)**

Year	2007	2008	2009	2010	2011	2012	2013
CPI (2007=100)	100.00	107.70	107.38	109.31	113.24	115.62	115.39
ABSOLUTE POVERTY LINE UPDATED FOR INFLATION IN KM PER MONTH (one-member household)	238	256	256	260	270	275	275
ABSOLUTE POVERTY LINE UPDATED FOR INFLATION IN KM PER MONTH (three-member household)	714	768	768	780	810	825	825

In 2011, there were 23.4% of poor individuals or 741,652 individuals, bearing in mind that the Household Budget Survey estimated the population present in BiH at 3,169,786. The poverty gap was estimated at 6.4% of the poverty line<sup>4</sup>.

By household type, the poorest categories in BiH are “Couple with children + other relatives” in which 39.7% of poor individuals live, “Single parents + other relatives” in which 34.4% of poor individuals live, and “Couple with 3 or more children”, in which 30.9% of poor individuals live.

By sex of householder, 24.0% of poor people live in households where men are householders, while 20.1% of poor individuals live in households where women are householders.

By the number of members, the poorest are households with 5 or more members in which 36.3% of individuals are poor. Observing these households, almost every second person or 47.7% of people are poor in households with 5 or more members in which the householder is aged between 15 and 34 years.

Every second person in BiH is poor, or 53.5% of individuals living in households with 4 members of which 3 are children.

According to the current activity status, 43.8% of people unable to work, 40.9% of inactive and 37.0% of the unemployed are poor. In rural areas, 46.1% of people unable to work, 44.4% of inactive persons and 40.3% of the unemployed are poor.

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<sup>4</sup> This theoretically means that if all the inhabitants of Bosnia and Herzegovina (poor and non-poor together) would give 15.32 KM (238 KM X 6.4%) monthly in a hypothetical joint fund for the poor after which the money would be distributed to poor people, in BiH there would be no absolutely poor people, i.e. all persons should be above the absolute poverty line.

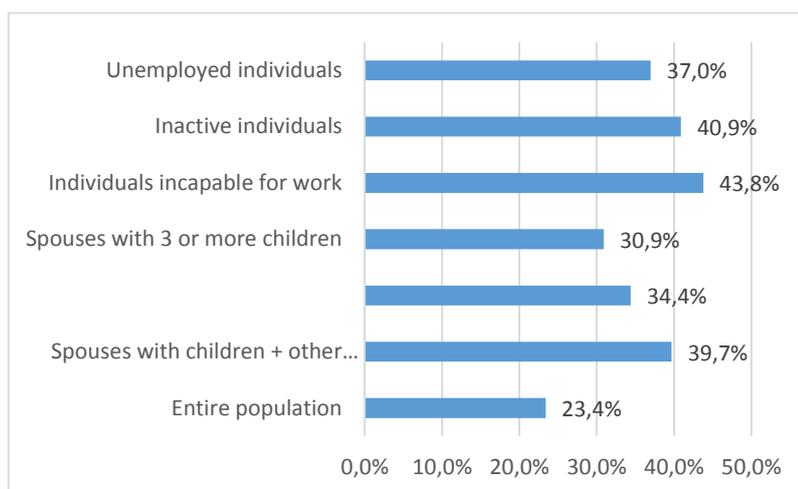
By the employment status of the householder, 29.9% of people are poor in households where the householder is “Self-employed or has free occupation”.

Almost every third person or 33.7% of people living in households where the householder is employed in the agricultural sector are poor, while a similar situation is in the construction sector where 33.4% of people are poor in households in which the householder is employed in the construction sector.

By the education level of householders in BiH, almost every second person or 46.6% of people living in households where the householder has no education is poor. Every third person or 34.9% of people living in households where the householder completed 1-8 grades of elementary school is poor.

Every third child in BiH or 33.2% of children aged 0-5 years is poor; it is similar with children 6-17 years of age who are poor in 30.2% of cases.

**Chart 1: Rates of absolute poverty in BiH in 2011 by type of household or the characteristics of individuals**



The richest tenth of the population in BiH spends 4.9 times more than the poorest tenth of the population.

The Gini coefficient<sup>5</sup> for household consumption in 2011 was 0.3338 for BiH.

<sup>5</sup> The Gini coefficient (Gini index, Gini ratio) is the most commonly used measure of inequality. The Gini coefficient was published by the Italian statistician and sociologist Corrado Gini in 1912 in the paper "Variability and Mutability". In the case of absolute equality, Gini coefficient has a value of 0, and in the case of absolute inequality it is equal to 1. Looking globally, the Gini coefficient varies between about 0.25 in the Scandinavian and some Central European countries to about 0.6 in some African and Latin America countries. For the Organization for Economic Cooperation and Development countries, the Gini coefficient ranges from 0.24 (Slovenia) and 0.49 (Chile).

In 2011, there were 22.7% of poor individuals or 464,418 individuals in FBiH, given that the Household Budget Survey estimates the population present in the FBiH at 2,043,587. The poverty gap is estimated at 6.4%, like at the BiH level.

By the type of household, the poorest categories in the FBiH are “Couple with children + other relatives” in which 41.2% of poor individuals live, “Single parents + other relatives” in which 32.3% of poor individuals live, and “Couple with 3 and more children” in which 29.7% of poor individuals live.

By the sex of the householder in the FBiH, 23.5% of poor people live in households where men are householders, while 18.3% of poor individuals live in households where women are householders.

By the number of members, the poorest households are those with 5 or more members in which 35.1% of individuals are poor. Observing these households, almost every second person or 48.9% of people are poor in households with 5 or more persons where the householder is aged between 15 and 34 years.

Every second person in the FBiH, or 51.6% of individuals living in households with 4 members of which are 3 children, is poor.

According to current activity status, 48.2% of people unable to work, 40.3% of inactive and 37.4% of the unemployed are poor. In rural areas, 41.9% of people unable to work are poor, 50.4% of inactive people and 42.0% of the unemployed.

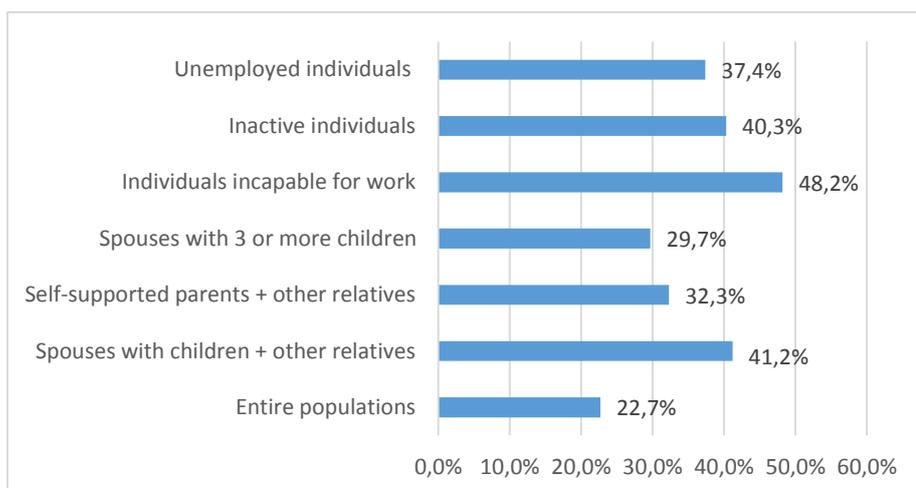
According to the employment status of the householder, in the FBiH, 33.5% of people are poor in households where the householder is “Self-employed or has free occupation”.

Almost two out of five people or 37.8% of people living in a household where the householder is employed in the agricultural sector in the FBiH are poor. The situation is similar in the construction sector where 30.9% of people are poor in households in which the householder is employed in the construction sector.

According to the education level of the householders in the FBiH, almost every other person or 52.4% of people living in households where the householder has no education are poor. Every third or 35.1% of persons live in households where the householder completed 1-8 grades of elementary school.

Every third child in the FBiH or 31.8% of children aged 0-5 years is poor; it is similar with children 6-17 years of age who are poor in 39.0% of cases.

**Chart 2: Rates of absolute poverty in FBiH in 2011 by type of household or the characteristics of individuals**



Same as at the state level, the richest tenth of the population in the FBiH spends 4.9 times more than the poorest tenth of the population.

The Gini coefficient for household consumption in 2011 for the FBiH amounted to 0,341.

## Findings

The basic assumption of the analysis is that, if there is an increase in the VAT rate in the implementation of the tax reform, the prices will rise in the same equivalent amount as far as the VAT rate increases, i.e. that the entire burden of the VAT increase will be fully transferred to the expense of citizens in final consumption.

According to the poverty border (line) of KM 238 per household member per month (in prices of 2007) the FBiH in 2011 had 22.7% of poor individuals, or in absolute terms, 464,418 poor citizens (Table 1).

A Household Budget Survey gives the total household consumption on the basis of which we calculated the equivalent consumption after the change in the VAT rate by the following formula:

$$\hat{Y}_d = Y_d * \frac{T_1}{T_2}$$

where:

$\hat{Y}_d$  – equivalent (parity) household consumption at the new VAT rate

$Y_d$  – total household consumption at the current VAT rate

$T_1$  – current VAT rate

$T_2$  – new VAT rate

According to the scenarios of increasing the VAT rate and rising prices on that basis, we obtain the following the impact of rising prices on the poorest segments of the population.

**Table 1: The impact of VAT rate growth or price rising on poverty**

VAT rate in %	% poor in FBiH	Total number of the poor
17	22,7	464.418
18	23,1	471.616
19	23,7	484.986
20	24,2	495.509
21	24,5	500.798
22	24,9	507.855
22,5%	25,1	512.425
23,5%	25,4	518.733

The calculation of the Institution, the 2011 HBS data used

From the above table it is clear that only an increase in VAT (and an equivalent price increase) would lead to an increase in poverty, where a VAT increase by 1 percentage point increases the poverty rate by an average of 0.44 percentage points. If the government fails to align its policies (full coverage of population with health insurance), the total number of the poor would increase from 464,418 (VAT rate of 17%) to 507,855 (VAT rate 22%), i.e. the number of the poor would increase by around 43,000. An even worse situation is if the VAT rate increased to 23.5%, because without full coverage of citizens with health insurance, in this case, the number of the poor would be increased by about 54,000, or 11.7%.

Since with the implementation of the tax reform all FBiH citizens will have health insurance, below we give the positive effects on poverty on this basis.

According to data from the Extended Household Consumption Survey, the FBiH has 5.4% of the population or 111,110 people without health insurance. Of 111,110 people without health insurance, 39,185 people are poor. Of 39,185 uninsured people, 30,555 are aged 18 and over.

The overall effect on the improvement of living standards of the poor people on a monthly basis would amount to  $30,555 \times \text{KM } 60 = \text{KM } 1,833,300$  or  $\text{KM } 21,999,600$  annually.

If we observed separately the effect of the impact of the full coverage of the population with health insurance, the poverty would be reduced from 22.7% to 18.7%, i.e. in absolute numbers the number of the poor would theoretically be decreased from 464,418 to 386,899, which means that 77,519 people would be less poor.

The combined (pooled) effect, which implies the implementation of the tax reform and a compensation for deficits by a possible VAT increase (increase in the number of the poor on the assumption that there will be a rise in prices), along with full coverage of population with health insurance (decrease in the number of the poor), is given below (Table 2).

**Table 2: The combined effect of the reform and VAT increase**

S/N	VAT rate in %	The number of the poor in the case of the introduction of a higher VAT rate without the introduction of the right to health care for all citizens in the FBiH		The number of the poor in the case of the introduction of a higher VAT rate with the introduction of the right to health care for all citizens in the FBiH	
		% of the poor in FBiH	Total number of the poor	% of the poor in FBiH after the reform	Total number of the poor after the reform
1	Base VAT 17	22,7	464.418	18,7	386.899
2	18	23,1	471.616	18,9	392.390
3	19	23,7	484.986	19,2	398.133
4	20	24,2	495.509	19,7	407.334
5	21	24,5	500.798	20,4	421.488
6	22	24,9	507.855	21,2	438.939
7	22,5	25,1	512.425	21,2	438.939
8	23,5	25,4	518.733	21,9	453.232

The calculation of the Institution; the 2011 HBS data used.

An estimation of the number of the poor after the “worst” option for citizens (the tax reform does not advocate this solution) would increase VAT by 6.5% (VAT rate of 23.5%), suggests that the number of the poor (453,232) would be lower than it would

be without the implementation of the reform (464,418) by 11,186 poor citizens less. From the above table it can be concluded that, the lower the rate of VAT increase is, the greater impact the reform has on poverty reduction.

Table 2, serial number 1, shows us the effects of the tax reform without increasing VAT. We notice a dramatic decrease in percentages and number of the poor in the FBiH from 22.7% and 464,418 citizens to 18.7% or 386,899 citizens. Such a reform without increasing VAT gives the most significant poverty reduction to 77,519 fewer poor citizens.

Numbers 2 to 8, Table 2, give us comparative values in percentage and the number of the poor for any possible increase in the VAT rate. As we can see, even in the case of the most dramatic increase in the VAT rate to 23.5%, the percentage and the number of the poor is less than the number before the reform. In other words, the effect of giving the right to health care to all citizens of the FBiH is much larger and more powerful for their standard of living, than the effect of price increases due to the increase in the VAT rate.

According to the concrete proposal of compensation for the “lost” revenues of public sector due to relieving the economy, on page 25 of the document Tax Reform for the Purpose of Investments and Employment, it is proposed (if other measures are not sufficient and as a last resort) to increase VAT in proposal 1, variant III, to 18%, and in the proposal 2, variant III, to 19%.

Analyzing these two proposals, it is clear that in the first version (VAT rate 18%), the number of the poor would be reduced by 72,028, from 464,418 before the reform, to 392,390 after the reform.

In the second variant (VAT rate 19%), the number of the poor would be reduced by 66,285, from 464,418 before the reform, to 398,133 after the reform.

Despite the fact that the first variant significantly reduces the number of the poor, the second variant is more favourable because it contributes more to the realization of the key objectives of the tax reform.

## **Conclusion**

The impact of the tax reform is analyzed to a limited extent, only through the impact on the poorest segments of the population. We did not take into account the effects of increasing other taxes on living standard, and the analysis is limited to a possible increase in VAT. In the implementation of the tax reform, we assumed the least optimistic reaction of manufacturers and retailers to the possible increase in VAT, or the complete transfer of the burden of rising prices to the consumer.

It should be noted that the relief of the economy advocated by the tax reform is significant, and that the savings of business entities on this basis are significantly higher than the costs in the event that the VAT increase is passed on to commercial companies, and not at the expense of citizens by increasing the prices. Therefore, it is quite realistic to expect that there will be no massive increase in prices due to any increase in the VAT rate, and if the price increase happens, it will have a symbolic character.

In this analysis, we assume the worst variant for the citizens, i.e. that the total amount of the VAT increase will be transferred to citizens.

Due to a reduction in the tax burden on labour, it is realistic to expect an increase in employment and reduction of the shadow economy. This analysis does not deal with those effects because they are accurately presented and explained in the document of the tax reform. Also, as the burden on labour is reduced and the competitiveness of the domestic economy increased, the analysis does not include the possibility of an impact on reducing the prices of domestic producers, which would have a positive impact on living standard. The analysis does not address the possibility of entering the formal economy of a significant number of workers, thus increasing revenues in the PIO Fund, and increasing private consumption as a certain result of employment increase due to the increase of competitiveness of domestic production and investment growth.

Finally, with all the limitations, assumptions, calculations and estimates, this analysis clearly shows that the proposed tax reform has a positive impact on poverty reduction, even with an increase in the VAT rate by 6.5 pp (VAT rate of 23.5%) because the expected benefits of giving the poor the health insurance is greater than the expected cost of the poor due to possible price increases because of the growth of VAT. Such an increase in the VAT rate (to 23.5%) is not advocated by the tax reform, nor is it necessary or realistic to occur in the implementation of proposals for reforms. Analyzing the most radical variant, we wanted to show that, even in such a proposal, the effects on poverty reduction are positive.

The greatest poverty reduction occurred in the proposal with the lowest percentage increase in VAT.

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