



National Accounts Methodology
Description of Sources and Methods
Part A, GNI Compilation
Bosnia and Herzegovina

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PART A ANNUAL NATIONAL ACCOUNTS AT CURRENT PRICES

CHAPTER 1

THE STATISTICAL SYSTEM AND THE ARCHITECTURE OF NATIONAL ACCOUNTS

1.1 Institutional framework

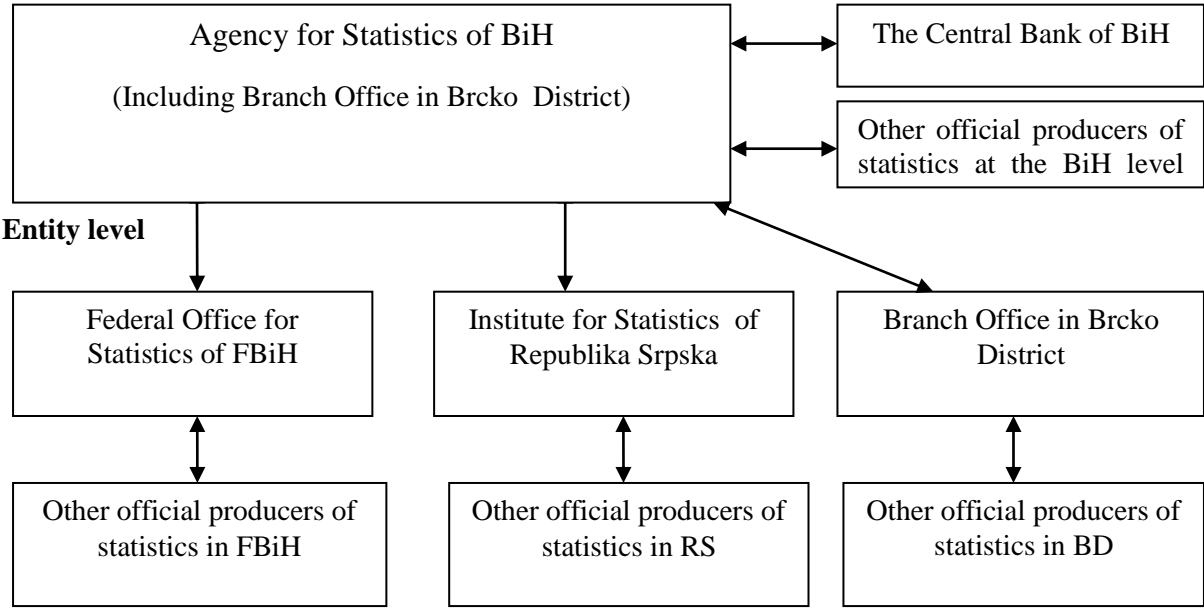
1.1.1 Statistical System of Bosnia and Herzegovina – Organisation of National Accounts

The statistical system of Bosnia and Herzegovina (BiH) encompasses Agency for Statistics of Bosnia and Herzegovina (BHAS), the Central Bank of Bosnia and Herzegovina (CBBH) and other official producers of statistics at the level of Bosnia and Herzegovina; Federal Office for Statistics of Federation of BiH (FIS) and Institute for Statistics of Republika Srpska (RSIS) at the entity level, and other official producers of statistics in Federation of Bosnia and Herzegovina and Republika Srpska. At the level of Brcko District, Brcko Branch is organised as a part of the Agency for Statistics of Bosnia and Herzegovina, and together with other producers of statistics in Brcko District, it is a part of the statistical system of BiH.

According to the provisions of the Law on Statistics of BiH, statistical institutions which directly participate in the production of statistics of Bosnia and Herzegovina are: the Agency for Statistics of Bosnia and Herzegovina, Federal Office for Statistics of Federation of Bosnia and Herzegovina, Institute for Statistics of Republika Srpska and Agency for Statistics of Bosnia and Herzegovina – Brcko Branch (organisational unit of the Agency for Statistics of Bosnia and Herzegovina since 2005).

Statistical system of Bosnia and Herzegovina

BiH level



1.1.1.1 Agency for Statistics of BiH

Agency for Statistics of Bosnia and Herzegovina, according to the Law on Statistics of Bosnia and Herzegovina, is a state institution competent to process, disseminate and endorse statistics of Bosnia and Herzegovina, perform international representation and co-operation with organisations and other bodies and fulfil the international obligations of Bosnia and Herzegovina in the field of statistics.

The Agency for Statistics of Bosnia and Herzegovina produces and disseminates statistics of Bosnia and Herzegovina determined by the Statistical Programme of Bosnia and Herzegovina, which is prepared for four yearly rolling period with the relevant details broken down on a yearly basis. The Entities have own Statistical Programme but their Programmes have to include the all activities planned in the Statistical programme of Bosnia and Herzegovina. A detailed overview of the proposed statistical activities for each budget year is elaborated in a Work Plan, following consultations with the entity statistical institutes.

In collecting and processing statistics of BiH, the entity institutes should apply the standards and practice issued by the Agency and transmits the data in accordance with the Agency's requirements. The mentioned standards and practice have to be compliant to the international practice and standards.

When it is necessary for compilation of statistics at the level of Bosnia and Herzegovina, the Agency may require the entity institutes to provide data at the level of individual statistical units, which may include confidential data according to the existing laws.

Although the Law on Statistics of BiH, and later an Agreement on the implementation of harmonised methodologies and standards in producing statistics of Bosnia and Herzegovina, signed between Ministry of Finance of BiH, entity ministries of finance, the Agency for Statistics of BiH and entity statistical institutes, lay down the role and competences of the Agency for Statistics of BiH, the provisions of the mentioned legislation have not yet been applied in an adequate manner and, as a consequence, it is impossible for the Agency for Statistics of BiH to implement the tasks determined by the law and ensure further development of the National Accounts in Bosnia and Herzegovina.

The Director of the Agency manages the work of the Agency and he is accountable to the Council of Ministers of Bosnia and Herzegovina for his work.

National Accounts within the Agency for Statistics of BiH are organised as a separate Department that is a part of the Sector of Economic Statistics. The total number of employees is seven.

1.1.1.2 Federal Office for Statistics of FBiH

Federal Office for Statistics is an administrative body responsible for statistics of Federation of Bosnia and Herzegovina. Federal Office of Statistics of FBiH organises and conducts statistical surveys in which Federation of Bosnia and Herzegovina is interested in, in accordance with the Work Plan and Programme of carrying out statistical surveys interesting to Federation of Bosnia and Herzegovina and according to the principle of impartiality, objectivity and professional independence. Federal Office for Statistics of FBiH has 10 cantonal organisational units for statistics. They collect required data from legal entities who are registered on the canton territory and defined as reporting units.

Federal Office for Statistics of FBiH has responsibility to collect process and transmit to the Agency for Statistics of Bosnia and Herzegovina the statistical data deemed by the Agency for Statistics as needed for production of statistics of BiH, within the time specified by the Statistical Programme i.e. the Work Plan.

In collecting and processing statistical data, Federal office for statistics will submit data to the Agency in compliance with the international methodologies and standards and in line with the guidelines issued by the Agency.

National Accounts within Federal office for statistics of FBiH are organised as a Department for the Statistics of National Accounts within the Sector of National Accounts and Prices, with seven employees.

1.1.1.3 Institute for Statistics of Republika Srpska

Republika Srpska Institute of Statistics is a republic administrative organisation responsible for implementing statistical activities, independent in producing statistics within the scope of its activities with the main task to produce official statistical data for all categories of users. Statistical surveys are implemented through six regional offices. The regional offices carry out methodological and organisational preparations and conduct statistical activities for the respective region covered by their activities.

Republika Srpska Institute of Statistics is responsible to collect, process and transmit to the Agency for Statistics of BiH the statistical data deemed by the Agency for Statistics as needed for production of statistics of Bosnia and Herzegovina, within the time specified by the Statistical Programme of Bosnia and Herzegovina i.e. the Work Plan.

In collecting and processing statistical data, Institute for Statistics Republika Srpska will submit the data to the Agency in compliance with the international methodologies and standards and in line with the guidelines issued by the Agency.

National Accounts within Institute for Statistics of Republika Srpska are organised as National Accounts Department of the Sector of National Accounts, Registers and Sampling, with six employees.

1.1.1.4 Agency for Statistics of BiH – Branch Office Brcko District

The production of statistical data for Brcko District, as a separate administrative unit within Bosnia and Herzegovina, was carried out by the independent Bureau of Statistics of Brcko District until 2004. Since 2005, the Bureau was reconstituted as the organisational unit of the Agency for Statistics of BiH.

Branch Office Brcko District employs one statistician who works on national accounts.

1.1.1.5 The Central Bank of Bosnia and Herzegovina

According to the Law on the Central Bank of Bosnia and Herzegovina (CBBH), the Central Bank of Bosnia and Herzegovina is responsible for collecting, processing and publishing of monetary sector statistics and balance of payments statistics, including foreign trade data, implementing the international standards of the International Monetary Fund (IMF).

The Central Bank of Bosnia and Herzegovina, according to the Law on the CBBH, BH Statistics Law and the Memorandum signed between Agency for Statistics of BiH and the CBBH, is in charge of compilation and dissemination of Balance of Payments statistics for Bosnia and Herzegovina. Compilation and dissemination is done according to the internationally recognized standards, set by the International Monetary Fund (IMF) and most recently published in 2009 in the sixth edition of Balance of Payments and International Investment Position Manual (BPM6).

The main data sources are statistical and other government institutions, commercial banks and the CBBH. With the purpose of obtaining more accurate and reliable data, the CBBH conduct quarterly and annual statistical surveys in local companies with foreign investment, insurance, telecom and post organizations, pension funds, embassies and international organizations in BiH.

The data are supplemented with information from international organizations and institutions publications as well as statistics institutions of other countries from the region.

CBBH estimates balance of payments items for all missing data in accordance with the recommendations of the IMF.

In January 2007, the Agency for Statistics of BiH signed the Memorandum of Understanding with the Central bank of BH which lays out the areas of responsibilities and methods of cooperation, aiming to improve development of economic and financial statistics in BiH.

1.2 Gross domestic product – approaches used

The compilation of the National Accounts in Bosnia and Herzegovina is based on methodology recommended by the United Nations the System of National Accounts 2008 (2008 SNA) and the European system of Accounts 2010 (ESA 2010). In the period until 1991, as in all former republics of ex-Yugoslavia, the concept of material production was used, that is calculation of only material production and services related to production. There are no reliable estimates of GDP for the war period 1992 – 1995.

1.2.1 GDP by production approach

Agency for statistics of BiH (BHAS) is responsible for the estimation of gross domestic product (GDP) for BiH by production approach in line with the European System of Accounts 2010 (ESA 2010). Data are prepared by the Agency for Statistics of Bosnia and Herzegovina based on the data compiled separately for the two Entities (Federation of Bosnia and Herzegovina and Republika Srpska), and by Brcko District. These estimates are compiled by the respective entities' institutes of statistics and by Bureau of Statistics of Brcko District. Data aggregated at the two-digit level are transmitted to BHAS.

Estimates of GDP by production approach are prepared according to the KD BiH 2010 which is harmonized with European Classification of Activity NACE Rev. 2.

Agency for statistics of BiH calculates components of production and income account for the Institutions of General Government of BiH and Central bank of BiH (which represent about 2,98% of GDP in 2015). The components compiled by BHAS are allocated to the entities and the Brcko District using the coefficients of the distribution of indirect taxes from single account of Indirect Tax Authorities (ITA) of BiH to the entities.

At the same time, the Entity institutes collect necessary data for all the units registered in the entities except the institutions at the level of the BiH and the CB, process data according to the headquarters and principal activity of business entities, including data delivered by the BHAS, and they compile elements of the production account, formation of income account and the GDP for entities. In the second stage, the Entities deliver to the BHAS components of the production account and formation income account aggregated at two digit level of the Classification of economic Activities of BiH 2010.

GDP estimates by production approach were revised in 2013 with the publication of the series for the period 2005-2012 after the implementation new classification NACE Rev 2.

In the first half of 2017 ESA 2010 was implemented in annual GDP estimates by production and income approach. This was followed by a publication of revised annual GDP estimates by production and income approach for the 2005-2015 period in line with the ESA 2010 methodology.

1.2.2 GDP by expenditure approach

With a view to improve National Accounts statistics of Bosnia and Herzegovina, the Agency for Statistics of BiH started compilation of gross domestic product by expenditure approach in 2006. Annual GDP estimates by expenditure components were compiled on an experimental basis for 2004 and 2005, both at current and constant prices. Those estimates, which were disseminated in 2007, were compiled only at the countrywide level. The estimates of GDP by expenditure approach are now a part of regular compilation programme of annual national accounts estimates.

GDP by expenditure approach is defined as total domestic final consumption corrected by external trade balance with the rest of the world. The Agency for Statistics of BiH publishes the main components of GDP by expenditure: Household final consumption expenditure (HFCE), Final consumption of non-profit institutions serving households, Final consumption of general government, Gross capital formation (GFCF) and Export and import of goods and services at current and constant prices (at prices of previous year).

Due to the fact that neither Input/Output framework nor Supply/Use tables has been developed yet, the discrepancy between the two approaches of GDP estimates has not been reconciled.

Table 1.1 Discrepancies between GDP by production and expenditure approach, mKM

	2012	2013	2014	2015
1	2	3	4	5
GDP by production approach	26 223	26 779	27 359	28 589
GDP by expenditure approach	27 564	28 241	28 343	29 727
Discrepancy %	5.1	5.5	3.6	4.0

1.2.3 GDP by income approach

GDP by the income approach is estimated at the same time and with the same data sources as GDP by the production approach. The income approach is aligned to the production approach to give the same GDP by making gross operating surplus the residual. The estimates of GDP by income approach are available from 2005 onwards.

1.2.4 Cooperation with other institutions

With an aim of improving data sources for the compilation of national accounts, in February 2008 Agency for Statistics of BiH signed Annex of the Protocol of Cooperation with Indirect Taxation Authority, regarding availability of databases of external trade, Value added tax (VAT) - payers as well as individual data from VAT reports. Agency for Statistics of BiH still do not use a very important data source to control quality of coverage and estimates and for the further development of national accounts due to short time series of data.

By using available data on net primary income and net current transfers from CBBH, the Agency for Statistics of BiH has calculated the estimates of gross national income and gross disposable income.

1.3 Accounts prepared

Activities on the implementation of the sectoral classification of institutional units in BiH in the Statistical Business Register started within the framework of the IPA 2012 Twinning Project. Since all planned activities have not yet been completed, the compilation of annual sectoral accounts for the level of BiH was not possible in earlier periods. Currently, only the production account and the income generation account at the level of the total economy are compiled.

The compilation of production account and generation of income accounts for Bosnia and Herzegovina is performed in all statistical institutions of BiH at the same time. Entities' institutes for statistics and Brcko Branch compile the production account and generation of income account for all residential institutional units in their respective territories. Agency for Statistics of Bosnia and Herzegovina calculates components of production account and income account for the Institutions of General Government of BiH and the Central Bank of BiH. The components of the production account compiled by BHAS are allocated to the entities and the Brcko District using the coefficients of the distribution of indirect taxes from single account of Indirect Tax Authorities of BiH to the entities.

Table 1.2 Compilation of Production Accounts in BiH, 2015, mKM

	Output	Intermediate consumption	Gross value added	Net taxes less subsidies	Gross domestic product
1	2	3	4	5	6
Bosnia and Herzegovina	49 436	25 854	23 582	5 006	28 588
Federation of Bosnia and Herzegovina	32 201	16 710	15 491	3 197	18 688
Republika Srpska	16 101	8 533	7 568	1 636	9 204
Brcko District	1 134	611	523	173	696

Table 1.3 Compilation of Generation of Income Accounts in BiH, 2015, mKM

	Gross value added	Compensation of employees	Net other taxes on production	Consumption of fixed capital	Net operating surplus/mixed income
1	2	3	4	5	6
Bosnia and Herzegovina	23 582	13 894	141	4 014	5 533
Federation of Bosnia and Herzegovina	15 491	9 269	113	2 681	3 428
Republika Srpska	7 568	4 397	26	1 279	1 866
Brcko District	523	228	2	54	239

1.4 Classification system

1.4.1 Classification used for the production approach

1.4.1.1 Statistical classification of economic activities in the European community (NACE)

KD BiH 2010 is a new classification of activities based on the current Statistical Classification of Economic Activities in the European Community –NACE Rev. 2.

Comparability of KD BiH 2010 with the United Nation’s International Standard Industrial Classification of all Economic Activities -ISIC Rev. 4 comes from the fact that first two levels (sections and divisions) of NACE Rev. 2 are the same with ISIC Rev. 4.

Classification of Activities of BiH (“Official Gazette BiH”, No. 47/10), KD BiH 2010 has been in use since 01.01.2011. Therefore, the statistical institutions assigned activity codes to all enterprises in the SBR, based on the new classification - KD BiH 2010. New codes in the SBR have been assigned to enterprises based on the data from multiple sources: purposefully conducted statistical survey, already available data from regular statistical surveys and by using special statistical methods.

1.4.1.2 Classification of Products by Activity (CPA)

Classification of Product by Activities of Bosnia and Herzegovina 2010 (CPA BiH 2010) is in line with the Statistical Classification of Products by Activity in the European Economic Community - CPA - 2008 version.

The Classification of Products by Activity (CPA) 2010 is used for classification of products consumed by household, as part of estimates of final consumption expenditure.

1.4.1.3 The Nomenclature of Industrial Products (PRODCOM)

The Nomenclature of Industrial Products (PRODCOM) 2010 was introduced in 2011. PRODCOM was used for collecting data on regular industrial production in Bosnia and Herzegovina. Data on industrial production were collected using new Nomenclature of Industrial Products of Bosnia and Herzegovina (NIP BiH 2010).

1.4.2 Classification used for the expenditure approach

1.4.2.1 Classification of Individual Consumption by Purpose (COICOP)

The estimate of household final consumption has been done in accordance with the Classification of individual Consumption by Purpose (COICOP).

1.4.2.2 Harmonized system (HS)

Harmonized System (HS) is an international classification of goods by numerical coding system, which has been developed by the World Customs Organization (WCO). HS classification contains sections, chapters, headings and sub-headings and corresponding numerical codes. HS covers 21 sections (marked as I through XXI) and 97 chapters (marked as 01 through 97). With adoption of the Law on Customs Tariff of BiH (Official Gazette of BiH, 1/98) Article 2, Bosnia and Herzegovina has adopted HS WCO classification. By decision to apply Article 2 of the Law on Customs Tariff of BiH (Official Gazette of BiH, 6/98), the tariff item of BiH Customs Tariff is composed of ten digits and accordingly, the seventh and eighth digits are harmonized with the EU classification (Combined Nomenclature-CN). However, the ninth and tenth digits are used to go beyond to provide a classification to satisfy the BiH specific needs.

1.4.2.3 Combined Nomenclature (CN)

The Combined Nomenclature is the goods classification used within the EU for the purposes of foreign trade statistics. Combined Nomenclature is coded by eight-digit system and is fully in line with the Harmonized System (HS) at the level of six digits.

1.4.2.4 Standard International Trade Classification (SITC)

Standard International Trade Classification - SITC rev.4 was accepted by the United Nations Statistical Commission in March 2006. SITC includes 2,970 items, 1,023 subgroups, 261 groups, 67 divisions and 10 sections. Standard International Trade Classification was developed on the basis of Harmonized System and represents one of the basic classifications for international trade in goods statistics.

1.4.2.5 Balance of payment classification

For classification Balance of payment data, the special Balance of payment classification have been used.

CHAPTER 2

THE REVISION POLICY AND THE TIMETABLE FOR REVISING AND FINALISING THE ESTIMATES

There is no common revision policy established in Bosnia and Herzegovina. Routine (annual) revisions are conducted by the entities' institutes independently and without written justifications to data users on reasons for revision. Major revisions of national accounts data were carried out uniformly in all statistical institutes only after the completion of the projects which brought up significant changes in the data (introducing the calculation by constant prices, project of estimation of non-observed economy activities, the calculation of imputed rental, implementation NACE Rev2, implementation ESA 2010).

First big revision of *GDP by production approach* was published in 2006 and referred to the data series of 2000 to 2005. That revision also covered estimates of the value of imputed rental of owner occupied dwellings.

By second big revision carried out in 2007, the estimates of non-observed economy for the period 2003 – 2006 were included in the official estimates of GDP. In 2008, non-observed economy was included in the data series from 2000 to 2007.

By third revision carried out in 2012 methodological improvements have been done in estimation GDP by production approach. Methodological improvements are related to the value added calculation for insurance companies. Mentioned revision of the data required the needs for revision of previously calculated and published data series of GDP.

By fourth big revision carried out in 2013, NACE Rev 2 was implemented in data series 2005-2012.

Fifth revision: The big major revision of all GDP time series data took place on May 2017 according to ESA 2010 methodological improvements. BHAS published annual GDP time series 2005-2015. The revision consists of the following methodological improvements: the capitalisation of research and development expenditure, calculation of own-account software, allocation of the Central bank output, the improvements in calculation of the non-life insurance.

In this revision, except the ESA 2010 changes, some additional methodological changes have been made due to the use of the better data sources (improvements relating to the calculation of output for microcredit organisations, the calculation of taxes on products and subsidies on products at previous year prices). This statistical revision affected the average increase of 0,09% at the GDP level in nominal terms throughout the whole period from 2005 to 2015. On a nominal increase of GDP, expenditure on research and development, throughout the whole period, had average impact of 0.07%. Other revision elements had a positive or negative impact on the level of GDP. The allocation of the output of the Central Bank has a negative impact on GDP according to the ESA 2010 methodology because it is not done allocation output Central Bank in previous accounts as recommended by the ESA 95 methodology. Illegal activities are not included in the calculation. The most important changes and improvement are presented below.

Table 2.1 GDP by production approach, revisions, mKM

	2000	2001	2002	2003	2004	2005	2006	2007
1	2	3	4	5	6	7	8	9
GDP by production approach	9 611	10 480	11 651	12 303	13 497			
First revision in 2005	10 713	11 599	12 829	13 443	14 678	15 791		
Change, nominal level (%)	11.5	10.6	10.1	9.3	8.75	-	-	-
Second revision in 2007	11 689	12 565	13 821	14 505	15 786	16 928	19 121	21 647
Change, nominal level (%)	9.1	8.3	7.7	7.9	7.5	7.2	-	-
Third revision in 2012	11 820	12 678	13 982	14 728	15 998	17 218	19 500	21 981
Change, nominal level (%)	1.1	0.9	1.1	1,5	1.3	1.7	1.9	1.5
Fourth revision in 2013						17 148	19 567	22 065
Change, nominal level (%)						-0.4	0.3	0.4
Fifth revision in 2017						17 650	20 057	22 548
Change, nominal level (%)						-0.021	-0.015	0.015

Table 2.1 continue

	2008	2009	2010	2011	2012	2013	2014	2015
1	10	11	12	13	14	15		
Third revision in 2012	24 898	24 202	24 773	25 666				
Change, nominal level (%)	-	-	-	-				
Fourth revision in 2013	24 984	24 307	24 879	25 772	25 734			
Change, nominal level (%)	0.3	0.4	0.4	0.4				
Fifth revision in 2017	25 519	24 799	25 365	26 231	26 223	26 779	27 359	28 589
Change, nominal level (%)	0.059	0.075	0.073	0.083	0.113	0.133	0.200	0.234

The big major revision of all GDP by production approach time series data took place in 2017 according to ESA 2010 methodological improvements. This statistical revision affected the average increase of 0.09% at the GDP level in nominal terms throughout the whole period from 2005 to

2015. The total impact of the implementation of new ESA 2010 methodology on the 2008-2015 GDP by estimates is given in the table below.

Table 2.2 GDP by production approach according to ESA95 and ESA 2010, mKM

	2008	2009	2010	2011	2012	2013	2014	2015
1	2	3	4	5	6	7	8	9
GDP, ESA 95	25 504	24 780	25 346	26 210	26 193	26 743	27 304	28 522
GDP, ESA 2010	25 519	24 799	25 365	26 231	26 223	26 779	27 359	28 589
Change, nominal level (%)	0.059	0.075	0.073	0.083	0.113	0.133	0.200	0.234

First big revision *GDP by expenditure* approach was in 2012. The main purpose of the revision was to improve data quality of the GDP and obtaining the new data series from 2007 to 2011, that would be comparable with data from 2012 onwards.

Table 2.3 GDP by expenditure approach, revision, mKM

	2007	2008	2009	2010	2011
1	2	3	4	5	6
GDP by expenditure approach	24 424	28 116	27 895	27 954	
First revision in 2012	23 327	26 091	25 810	25 885	26798
Change, nominal level (%)	2.3	4.7	5.4	5.5	-

Second big revision carried out in 2017 according to ESA 2010 methodological improvements. The most significant methodological changes in the ESA 2010, with a direct impact on the estimation of GDP according to the expenditure approach, are: the capitalisation of research and development expenditure, calculation of own-account software and implementation of sector classification.

Table 2.4 GDP by expenditure approach according to ESA95 and ESA2010, mKM

	2008	2009	2010	2011	2012	2013	2014	2015
1	2	3	4	5	6			
GDP ESA 95	26 165	25 921	25 995	26 799	27492	28 374	28 365	29 666
GDP ESA 2010	26 187	25 971	26 035	26 844	27 564	28 240	28 343	29 727
Change, nominal level (%)	0.08	0.19	0.15	0.17	0.26	-0.47	-0.08	0.21

2.1 Research and development

ESA 2010 recommends research and development (R&D) to be treated as gross fixed capital formation. In the ESA 95 R&D was classified as intermediate consumption.

R&D is treated as investment in the national accounts if it meets the following criteria: the assets requirement and basic requirement which determinates that it must be included to product or to service of fixed assets. Research and development as a subcategory of intellectual property products has all characteristics as any other capital asset. The main data sources used in R&D estimates are annual statistical survey collected from legal entities dealing with research and development: bussines units, government and non-profit institutions, universities. The coverage is one of the basic problems of this survey in the world, as is the case and in Bosnia and Herzegovina. Data for business sector were collected from business companies employing more than 10 persons.

Definitions of research and development based on international standards set by the OECD and published in the Frascati Manual (The Measurement of Scientific and Technological Activities-Proposed Standard Practice for Surveys of Research and Experimental Development - Frascati Manual, 2002 and 2007), published by OECD.

Eurostat task force produced templates that Member States could use to submit data for their first estimates of R&D as capital formation. These tables are used in the R&D estimates.

Data are calculated for activity and sectors by bottom-up method. The sector approach used in R&D surveys is not applied in the calculation of R&D in national accounts. The starting point for the calculation is total **Intramural expenditure** on R&D according to Frascati Manual framework.

The total intramural expenditure on R&D performed on the national territory during the reporting calendar year, and consists of gross current and investment expenditures. Current expenditures (costs) that include: 1) labour costs and the costs of compensation for employees (gross salary and allowances of gross wages for all employees in R&D activities, other compensation of employees in R&D, for example, scholarship, awards, etc; and another expenses; 2) other current costs (material costs based on research and development- raw material, energy and other expenses). Investment expenditures include expenditures for land and buildings, machinery and equipment, patents, licences, studies and projects, software and hardware (which including the total costs of the purchase of computers, devices, systems, components and equipment, and acquisitions costs or developing software for its own purposes) and other expenditures. In order to avoid duplication, these items should be deducted from internal R&D expenditures, such as capital expenditures, payments for licenses for the use of intellectual property and software production expenditures for their own needs. The first two items are calculated on the basis statistical survey. Experts from national accounts decided that they are not currently calculating the item for the production of software for their own account. The estimation of other taxes on production and other subsidies on production is based on the data on other taxes and subsidies on production for M 72 KD BiH 2010 (Scientific research and development). Data on extramural purchases of R&D are estimated on the basis of Frascati survey.

The estimation of consumption of fixed capital and net operating surplus (only for market producers) is based on applying the coefficients. The coefficients for CFC are calculated on the basis of the share of consumption of fixed capital in compensation of employees for S11 and S13 in M 72 activity.

Net operating surplus is calculated using share of net operating surplus in output for M 72 activity. This share is applied on total compensation of employees for R&D.

Calculation of some items was not possible due to lack of data sources (postgraduate students, adjustments for NOE, other adjustments). Table 2.5 presents the calculation of output of R&D for 2015.

Table 2.5 Output of R&D, 2015, 000 KM

		S11		S12		S13		S14		S15		TOTAL	
		+	-	+	-	+	-	+	-	+	-	+	-
1	Frascati Manual Intramural expenditures on R&D	16.185		4.202		33.526		0		480		54.393	
2	Subtract payments for licences to use intellectual products (principally R&D assets, such as patents) that should be recorded as GFCF		1.618		946		74						2.638
3	Subtract expenditure on own-account production of software		0	0	0	0	0	0	0	0	0		0
4	Add payments to postgraduate students not included in FM data	0				0						0	
5	Subtract capital expenditures		949		1.089		3.557						5.595
6	Add other taxes on production not included in FM data	17		14		5				13		50	
7	Subtract other subsidies on production		4		3		0						7
8	Add extramural purchases of R&D that should be recorded as intermediate consumption. Applies only to R&D industry	2.176				166						2.342	
9	Sub-Total (1 to 8): current expenditures	18.378	2.571	4.216	2.038	33.697	3.631	0	0	493	0	56.785	8.240
10	Add estimate of consumption of fixed capital plus a return to capital (for non market producers only consumption of fixed capital):												
11	- Option 1: As percentage of current expenditures (line 9) or compensation of employees	1.595		647		1.538				2		3.782	
12	<i>Net operating surplus</i>	626				0						626	
13	Adjustment for exhaustiveness												
14	Other adjustments												
15	Balance : Output of R&D		18.028		2.825		31.604		0		496		52.953

Table 2.6 presents the calculation of GFCF of R&D for 2015.

Table 2.6 GFCF, 2015, 000KM

		S11		S12		S13		S14		S15		TOTAL	
		-	+	-	+	-	+	-	+	-	+	-	+
1	R&D output		18.028		2.825		31.604				496		52.953
2	Add Imports of R&D		47		20		54				3		124
3	Add trade margins												
4	Add taxes on products												
5	Subtract subsidies on products												
6	Subtract extramural purchases of R&D that should be recorded as intermediate consumption. Applies only to R&D industry	2.176				166						2.342	
7	Subtract Acquisitions of R&D not expected to provide a benefit												
8	Subtract changes in inventories of finished R&D												
9	Subtract Exports of R&D												
10	Add Net purchases of R&D between domestic sectors												
11	Sub-Total	2.176	18.075		2.845	166	31.658				499	2.342	53.077
12	Balance: Total GFCF of R&D		15.899		2.845		31.492				499		50.735
13	Add/subtract capital transfers of R&D assets between sectors in capital account												

2.2 Non-life insurance

Measuring and recording the activity of non-life insurance (all classes of insurance except life insurance) in macroeconomic statistics is one of areas in which ESA2010 has brought improvements.

Under the new ESA2010, changes have been made to the method for estimating non-life insurance output. ESA2010 recommends that measurement of non-life insurance output should not be affected by the volatility of the occurrence of the risk and proposes the removal of claims resulting from catastrophic events. ESA2010, therefore recommends that the output of the non-life insurance activity should be calculated using the adjusted claims. In such cases, measurement of the non-life insurance output using the ESA95 basic formula as actual premiums earned plus premium supplements minus claims due could be extremely volatile (even negative).

To be in line with the ESA2010, it was therefore decided to use the moving average method to exclude volatility in claims paid and to estimate adjusted claims. It was decided to use 3 year moving average method.

Using the method chosen, adjusted claims paid each year are estimated using a moving average of actual claims paid over three years.

Table 2.7 Non-life insurance output according ESA95 and ESA 2010, 000 KM

Non-life insurance output ESA 95	2011	2012	2013	2014	2015
Output	220 607	231 717	243 572	232 090	251 122
Intermediate consumption	111 993	117 120	123 954	126 059	130 592
Value added	108 614	114 597	119 618	106 031	120 530
GDP	26 209 627	26 193 056	26 743 085	27 304 359	28 522 508
Value added / GDP (%)	<i>0.41</i>	<i>0.44</i>	<i>0.45</i>	<i>0.39</i>	<i>0.42</i>

Non-life insurance output ESA 2010	2011	2012	2013	2014	2015
Output	220 641	234 312	239 187	259 588	277 978
Intermediate consumption	111 993	117 120	115 720	126 059	130 592
Value added	108 648	117 192	123 467	133 529	147 386
GDP	26 231 262	26 222 710	26 778 754	27 358 710	28 585 811
Value added / GDP (%)	<i>0.41</i>	<i>0.45</i>	<i>0.46</i>	<i>0.49</i>	<i>0.52</i>

2.3 Allocation of central bank output

According to ESA 2010, commissions and fees for directly measured services invoiced by the central bank both in respect of resident and non-resident units should be allocated to these units. Only the part of the total central bank output (sum of costs less commissions and fees) which is not sold has to be, by convention, allocated to the intermediate consumption of other FIs – subsectors S.122 (deposit-taking corporations except the central bank) and S.125 (other financial intermediaries, except insurance corporations and pension funds) – in proportion to the respective value added of each of these subsectors.

Allocation of part of the total central bank output increased intermediate consumption of other FIs in KD activities 64 because it was not included according to ESA 95 in intermediate consumption. Implementation of ESA 2010 led only to a change in the allocation of central bank output, while the output as a sum of costs remained unchanged.

Table 2.8 Allocation of Central bank output, 2015, 000 KM

	Output	Intermediate consumption	Value added
1	2	3	4
Financial and insurance activities	1 602 744	572 033	1 030 711
Central bank (CB)	31 151	8 887	22 264
Financial service activities, except insurance and pension funding	1 244 100	406 747	837 353
Commissions and fees	9 188		
Output of CB less commissions and fees	21 963		

Table 2.8 continue

	Output	Intermediate consumption	Value added
1	2	3	4
Financial and insurance activities	1 602 744	593 966	1 008 748
Central bank	31 151	8 887	22 264
Financial service activities, except insurance and pension funding	1 244 100	428 710	815 390

The allocation of the output Central Bank has a negative impact on GDP according to the ESA 2010 methodology because it is not done allocation output Central Bank in previous accounts as recommended by the ESA 95 methodology.

2.4 Valuation of output for own final use for market producers

The output produced for own final use consists of goods and services that are retained either for own final consumption or for capital formation by the same institutional unit. The ESA 2010 (3.45) and ESA 95 (3.49) state that output for own final use is to be valued at the basic prices of similar products sold on the market; this generates net operating surplus or mixed income for such output.

Sources data for calculation of software for own final use is the redesign of the investment survey (INV 01). The new and more detailed classification of non-financial assets required the redesign of the questionnaire. It was reason to start the updating of the questionnaire. The survey carried out in 2015 for the reference year 2014 according to the new classification.

Total realized gross fixed capital formation in own-account software are increased for mark-up. The mark up is obtained by multiplying the total of realized GFCF in own-account software with the share of the net operating surplus in the output of the 62 division of KD BiH - Computer programming, consulting and related services. The estimation of data for the period 2005-2015.

Impact of this change on GDP is very small, for 2015 0.021% of GDP.

Table 2.9 Valuation of output for own final use

	2008	2009	2010	2011	2012	2013	2014	2015
1	2	3	4	5	6			
Valuation of output for own final use of market producers	2 054	3 765	3 559	2 269	1 811	1 864	2 644	5 940

Change, nominal level (%)	0.008	0.015	0.014	0.009	0.007	0.007	0.010	0.021
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CHAPTER 3

THE PRODUCTION APPROACH

3.0 GDP according to the production approach

Gross Domestic Product (GDP) by production approach is the sum of Gross Value Added (GVA) at basic prices for activities plus taxes less subsidies on products. GVA at basic prices is equal output at basic prices less intermediate consumption at purchasers' prices. Financial intermediation services indirectly measured (FISIM) are calculated at total economy level.

Gross domestic product (GDP) of Bosnia and Herzegovina has been calculated according to the methodology of System of National Accounts – SNA 2008 and European System of National Accounts ESA 2010. The calculation is based on the data of business enterprises registered and allocated according to the Classification of activities KD BiH 2010, which has been harmonized with the European classification NACE – Rev.2.

Table 3.1 shows main components of GDP by production approach for 2015.

Table 3.1 GDP by production approach, 2015, 000 KM

	Value	% of GDP
Output at basic prices	49 436 409	172.9
Minus: Intermediate consumption at purchasers' prices	25 854 126	90.4
Gross value added at basic prices	23 582 283	82.5
Plus: Taxes on products	5 171 636	18.1
Minus: Subsidies on products	164 866	0.6
Gross domestic product (at market prices)	28 589 053	100.0

GDP, by production approach with following components: output, intermediate consumption (IC) and gross value added (GVA) by divisions of NACE Rev. 2, is shown in Table 3.2.

Table 3.2 Output, IC and GVA by activities, 2015

Activity	Output	Intermediate consumption	Gross value added	Structure of gross value added	
				%	
000 KM					
A	Agriculture, forestry and fishing	4 000 939	2 217 507	1 783 432	7.3
B	Mining and quarrying	927 264	361 931	565 333	2.3
05	Mining of coal and lignite	595 409	200 806	394 603	1.6
06	Extraction of crude petroleum and natural gas	-	-	-	-
07	Mining of metal ores	183 782	82 396	101 386	0.4
08	Other mining and quarrying	137 845	74 816	63 030	0.3
09	Mining support service activities	10 227	3 913	6 314	0.0
C	Manufacturing	13 057 374	9 720 924	3 336 450	13.7
10	Manufacture of food products	2 588 043	2 042 466	545 577	2.2
11	Manufacture of beverages	387 812	236 813	150 999	0.6
12	Manufacture of tobacco products	68 598	48 988	19 610	0.1
13	Manufacture of textiles	528 819	418 606	110 213	0.5
14	Manufacture of wearing apparel	238 549	105 450	133 098	0.5
15	Manufacture of leather and	385 418	212 920	172 497	0.7

	related products				
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	909 091	671 269	237 822	1.0
17	Manufacture of paper and paper products	401 201	292 965	108 236	0.4
18	Printing and reproduction of recorded media	195 110	110 946	84 164	0.3
19	Manufacture of coke and refined petroleum products	1 067 096	1 056 631	10 465	0.0
20	Manufacture of chemicals and chemical products	427 257	269 868	157 388	0.6
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	169 918	85 262	84 656	0.3
22	Manufacture of rubber and plastic products	539 564	391 185	148 379	0.6
23	Manufacture of other non-metallic mineral products	470 880	302 727	168 153	0.7
24	Manufacture of basic metals	1 647 522	1 405 636	241 886	1.0
25	Manufacture of fabricated metal products, except machinery and equipment	1 288 205	844 306	443 899	1.8
26	Manufacture of computer, electronic and optical products	53 344	31 839	21 505	0.1
27	Manufacture of electrical equipment	323 656	249 465	74 191	0.3
28	Manufacture of machinery and equipment, n.e.c.	206 755	130 621	76 134	0.3
29	Manufacture of motor vehicles, trailers, semi-trailers	463 997	363 183	100 814	0.4
30	Manufacture of other transport equipment	4 036	2 473	1 563	0.0
31	Manufacture of furniture	491 783	347 735	144 048	0.6
32	Other manufacturing	65 593	35 190	30 404	0.1
33	Repair and installation of machinery and equipment	135 129	64 379	70 750	0.3
D	Electricity, gas, steam and air conditioning supply	2 037 145	927 776	1 109 369	4.6
E	Water supply; sewerage, waste management and remediation activities	572 333	265 072	307 261	1.3
F	Construction	3 250 738	2 125 902	1 124 836	4.6
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	6 634 507	2 807 918	3 826 588	15.7
H	Transportation and storage	2 133 997	1 099 436	1 034 562	4.3
I	Accommodation and food service activities	1 061 369	493 053	568 316	2.3
J	Information and communication	2 084 098	770 222	1 313 876	5.4
K	Financial and insurance activities	1 659 200	586 544	1 072 656	4.4
L	Real estate activities	1 755 926	320 209	1 435 717	5.9
	Of which: imputed rent	1 435 613	215 133	1 220 480	5.0
M	Professional, scientific and technical activities	1.484.406	688 740	795 666	3.3
N	Administrative and support service activities	442 578	205 352	237 226	1.0
O	Public administration and	3 295 259	827 829	2 467 429	10.1

	defence; compulsory social security				
P	Education	1 510 237	194 040	1 316 196	5.4
Q	Human health and social work activities	1 863 648	504 263	1 359 385	5.6
R	Arts, entertainment and recreation	1 114 497	788 399	326 098	1.3
S	Other service activities	550 895	219 143	331 752	1.4
T	Activities of households as employers; undifferentiated goods-and services-producing activities of households for own use	-	-	-	-
U	Activities of extraterritorial organisations and bodies	-	-	-	-
Total of activities		49 436 409	25 124 260	24 312 149	100.0

Dates for publishing first and final data are established by Plan of activity, and based on these, the Calendar of data publishing is determined. According to the Plan in BHAS, the date for publishing the first results of GDP by the production approach is July the 20th, and for final data December the 15th.

3.1 The reference framework

3.1.1 The Register

Statistical Business Register (SBR) is a register kept and maintained by the Agency for Statistics of BiH in cooperation with the Federal Office of Statistics for the Entity of BiH, Republika Srpska Institute of Statistics for the Entity of BiH and Branch office of the Agency for statistics of BiH in Brčko District.

SBR be kept and maintained on the basis of the Act on Statistics of BiH („Official Gazzete BiH“, No 26/04 and 32/10), and the Act on Classification of Economic Activities of BiH („Official Gazzete BiH“, No 76/06, 100/08 and 32/10) and Regulation of EU (Regulation EC No 177/2 008) establishing a common framework for business registers for statistical purposes .

Considering that the SBR in use only since the 2009, the statistical institutions are working hard to improve data quality, the further harmonization of the methodology of keeping, updating and processing data of the SBR, as well as including new data sources.

SBR represents basis for conducting of statistical surveys and serves as a frame for preparation (design) the sample for statistical surveys, as well as for monitoring of business demography of statistical units.

SBR contains information on enterprises, local units and their legal and local legal units, as well as relations (connections) between those units. Activities on the introduction of enterprise group, as mandatory statistical unit, are started throught the EU Twinning project.

SBR units can be divided as follows:

- Administrative units: Legal unit and Local legal unit
- Statistical units: Enterprises and Local unit

Legal unit is a place where all the information obtained from administrative system is being kept, and which is not possible to change.

Following variables are being tracked for legal units: 13-digit tax number, RS registration number, full name, short name, activity, registration date, date of last change, closure date, ownership, equity origin, legal form, entrepreneur type, entrepreneur education, account at Central Bank of BiH, financial data, employment data, entity, canton/region, municipality, settlement, postal code, street name and number, phone number, fax number, e-mail, responsible person and source for updating.

The SBR contains option „History “ within the legal unit, which gives an overview of all historical data.

Local legal unit is a place where all information collected from the administrative registers (regarding the units which are parts of a legal unit) are kept. Just as the legal units, the local legal units must be registered as well, so we can say with certainty that the scope of local legal units in SBR is good.

The same variables exist for local legal unit as well, except for those which are typical only for the legal unit (such as ownership, equity origin, legal form, financial data, and employees' data).

Historical data overview in SBR exist for each local legal unit, as well as overview of link with appropriate legal unit and appropriate local unit.

An enterprise is the basic statistical unit for economic data. It can contain more than one legal unit. Initially, the data are collected from administrative system, but they can be corrected with information obtained from the statistical surveys. The entrepreneurs are found as well under „enterprise “within the Statistical Business Register.

One enterprise is created for each legal unit, thus, resulting in relation 1:1. Besides the main activity, it is possible to enter up to 3 secondary activities. It means that the user is allowed to have an overview of the most important enterprise's activities.

The following variables are tracked for one enterprise:

enterprise unique statistical number, 13-digit tax number, RS registration number, activity status, full name, short name, activity, registration date, date of last change, closure date, entity, canton/region, municipality, settlement, postal code, address name and number, phone number, fax number, e-mail address, source for updates and corrections.

SPR has the possibility to provide following reviews: financial data, employment data, history, surveys containing the enterprise, as well as overview of all links/relations with the legal units and local units.

Local unit is an enterprise or its part (for example work shop, factory, warehouse, office, mine, storage), geographically located on the exactly specified place. One or more persons perform some economic activity (sometimes just as part-time) for the same enterprise on each of those locations, except in some exceptional cases. One enterprise can have more than one local unit.

Besides the main activity, each local unit can have up to three secondary activities. By using the menu on local unit, it is possible to review links/relations with enterprises and appropriate local legal unit.

For the calculation of the annual GDP by the production method SBR is used for the purpose of:

- control of coverage
- checking and updating the codes of activity
- verification the activities of units.

3.1.2 Data sources

Statistical institutions collect essential data for GDP calculation in the following way:

3.1.2.1 Federal Office for statistics of BiH:

- Business entities that complete annual financial statements following the Chart of accounts for enterprises are required to fulfil a special statistical form “Statistical Annex of Annual Financial statement (StatAnex)” which contains all necessary data for the statistics of national accounts;
- Data for banks and insurance companies are collected by a statistical survey;
- Data for budgetary users and non-budgetary funds are taken from regular annual financial statements (Profit and loss account, Balance sheet and Additional data on employees and salaries);
- For associations and non-profit institutions, annual financial statements are available;
- Data for unincorporated enterprises (entrepreneurs who perform their own activities) are collected from statistical surveys. Reporting units are Tax Authority offices in municipalities, which fill in questionnaires on the basis of administrative data (tax form for assessment of liability for taxation of each entrepreneur). Data in aggregated form at the municipality level by NACE activities are filled in a questionnaire, and not for an entrepreneur individually;
- Data for individual agriculture households are collected from statistical questionnaire. Reporting unit is municipality, and detailed data on quantities and values of produced and consumed products are collected at municipality level, not at the level of individual agriculture household. Data source for filling in this questionnaire is agriculture statistics;
- Taxes on products and services and import data (indirect taxes) are taken over from Ministry of Finance which prepares and publishes tables “Overview of total generated and allocated public revenues” and Indirect Taxation Authority;
- Data on the subsidies on products are collected and used from budgetary statistics.

3.1.2.2 Institut for statistics of Republika Srpska

Main data sources for legal entities are annual financial statements (administrative sources). Annual financial statements are most important data source for GDP calculation. They consist of Profit and loss account, Balance sheet, and Accounting Annex for legal entities. This data source excludes only the households sector (entrepreneurs), for which there is still no legal framework for obligatory submission of annual financial statements. Agency for intermediation, informatics, and finances – APIF, is in charge of collection and coverage of Annual financial statements. APIF delivers them in the *Access* format to the Institute for Statistics of Republika Srpska (RSIS), at the individual subject level, in April of the current year for the previous year. After the data are taken from APIF, first of all, the APIF register is compared with the statistical administrative register, to control coverage and check the activities, which are then, on the basis of the principal activity of an institutional unit with location in Republika Srpska (RS), grouped by activities of the Classification of economic activities.

APIF collects annual financial statements for the following legal entities:

- Non-financial enterprises;
- Non-profit institutions, associations;
- Banks and insurance companies;
- Public enterprises and agencies (indirect budget users, such as hospitals, etc.).

Each unit of this group maintains a specific bookkeeping accounting system and has a unique chart of accounts. All financial statements contain elements of revenues and expenditure, i.e. necessary elements for the calculation of output and intermediation consumption by data sources.

Branch statistics within RSIS are also data source for:

- Agriculture statistics – a part that relates to individual agriculture;
- Prices statistics, forestry statistics, industry statistics and other branch statistics for the constant prices calculation;
- Estimation of research and development
- Non-observed economy (NOE) estimates using labour statistics.

Due to the lack of financial statements for entrepreneurs, a statistical pilot survey was carried out for the components relevant to the GVA calculation of this segment of economy. At the end of 2008, the Pilot Survey for entrepreneurs was conducted. Survey was based on the sample of entrepreneurs with five or more employees, and it included all necessary and relevant categories for the GDP calculation. On the basis of the data from the entrepreneurs' sample, aggregation of data to the total number of registered entrepreneurs was done, using data from labour statistics.

Household budget survey data were used for estimation of individual construction and real rent.

For the calculation of agricultural production (output), data on yield of agricultural products (early crops and fruit, late crops, fruit and vineyards and citrus fruit) were used, as well as data on number of livestock and production of livestock products. Data were used from Economic Accounts for Agriculture (EEA). Prices of agricultural products (output) are collected through reports on purchase of agricultural products from family agricultural producers, reports on direct sale of agricultural products from own production of agricultural enterprises and cooperatives, and reports on sale of agricultural products on green markets.

For the calculation of intermediate consumption, the data from external trade statistics, energy statistics, statistics of industrial production, national accounts statistics, as well as norms. Statistics Department of Agriculture in 2011 for the first time published a calculation of EAA for the period from 2005 to 2010 and after that they are regularly published.

3.1.2.3 Agency for statistics of Bosnia and Herzegovina

Agency for statistics of Bosnia and Herzegovina (BHAS) collects and processes financial statements of BiH central agencies belonging to general government sector. After calculating the GVA elements, BHAS delivers them to the entities, according to established coefficients (32.3% belongs to RS, 65.15% to FBiH, and 3.55% to the Brcko District). BHAS delivers to RSIS the part which belongs to RS and which refers to the central state level, as already calculated categories of output, intermediate consumption, GVA, consumption of fixed capital, compensation of employees, number of employees, and a part of taxes.

BHAS calculates the value of the imputed rent at current and constant prices.

GDP components are calculated by the territory and main activity (NACE Rev.2) of institutional unit (organizational principle), not according to homogeneous units (establishment).

3.1.2.4 Bureau of Statistics of Brcko District

Brcko District of Bosnia and Herzegovina is a separate administrative unit that is under the sovereignty of Bosnia and Herzegovina. Brcko District was officially established in 8th March 2000. City Brcko is the centre of Brcko District. The Constitution of Bosnia and Herzegovina as well as all existing laws are applicable to the entire territory of the District.

In accordance with the Law on Statistics of Bosnia and Herzegovina Statistical Office of Brcko District is reconstituted as organisational unit of the Agency for statistics of BiH. After integration in the Office Agency, the state of BiH is responsible for funding Branch Office Brcko District. Branch Office Brcko District directly collects all the statistics on the area of Brcko District.

Until proclamation of District the town Brcko was partly under the control of the Federation of BiH and the other part under the control of the Republika Srpska. Since on the level of BiH there is no unified accounting system, the entities apply different accounting systems. The companies which were operating in the area under the control of Republika Srpska apply business accounting rules by the RS and the enterprises which were operating in the area under the control of the FBiH apply business accounting rules by the Federation. These inherited conditions make difficult collecting statistical data.

The following data sources have been used for compilation of gross domestic product (GDP) in the Brcko District of Bosnia and Herzegovina in 2015:

Two different accounting systems are in use in the Brcko District. The enterprises, which fulfil their financial statements in accordance in the balance sheets of enterprises in Federation of BiH (FBiH), also fill in a separate statistical forms 'Statistical Annex of Annual Accounting Statement', as an integral part of the annual financial statements. The above-mentioned form includes data required by the statistics of national accounts.

For enterprises, which work in line with the accounting system of Republika Srpska (RS), the data from the prescribed annual financial statements are taken as the data source for the compilation of GDP and its components, since balance sheets contain the required data.

For non-profit organizations and associations, the annual financial statements are available.

For entrepreneurs, the data are collected by using a statistical questionnaire "Calculation of gross value added and output for individual sector of non-agriculture activities for municipality". A reporting unit is the Department of Economic Development, and the Tax Authority of the Brcko District. An established committee makes estimates of the data, and administrative data of the Tax Authority are used as a basis for these estimates (Tax forms filled out by entrepreneurs).

For individual agricultural households, the data are collected by using a statistical questionnaire "Annual calculation of output and value added for private sector of agriculture without legal entities-agriculture households for municipality". A reporting unit is the Department of Agriculture, which provides detailed data on the quantity and values of produced and consumed goods at the level of the Brcko District. The data of agricultural statistics are a base for completing this questionnaire.

Data on taxes on products and services and imports are taken over from the Annual financial statements of the Agency for Finance of the Brcko District.

The data on subsidies are collected from the Department of Economic Development, and the Department of Agriculture.

The particularities of the Brcko District of BiH, in comparison with the entities, are shown in the calculation of the gross value added in sections O (Public administration and defence), P (Education) and, partly, section S (Other service activities). In fact, the institutions of the Brcko District are organised in a different way than in the entities, and complete calculation for these sections are derived from the Annual report on budget execution, which is drawn up by the Agency for Finance of the Brcko District.

The output of budget users is calculated by cost approach. Majority of the business entities in these sections are integral part of the government institutions. Personnel department of all employees, payment and collection of revenues are centralized. Elementary and secondary schools and other communal services are integral parts of the Government department, and they do not have a status of legal units and ,thus, no obligation of submitting final statements. Everything is included in the Annual financial statement on implementation of budget which is broken down into Government departments and units in accordance with the particularities of the activities they carry out. Output of these activities is compilation of the following categories: compensation of employees, intermediate consumption and depreciation.

3.1.3 Market and non-market units

Legal entities as institutional units are divided into market and non – market producers. Market producers sell their goods and services to other units for economically significant prices, which covers at least 50% of their production costs. This implies that if less than 50% of production costs is covered by sale, then an institutional unit is a non – market producer.

3.1.4 Output and production boundary

Output consists of all goods and services produced during the accounting period (calendar year) within production boundary. According to the ESA 2010 definitions, production boundary comprises production destined for the market, production for own needs, and other non - market production. Production of goods and services for own use, which is included in GDP calculation, refers to:

- Building of a dwelling for own account;
- Production and processing of agricultural products;
- Housing services produced by owner-occupiers.

Products retained for own final use can only be produced by the household sector.

Output is calculated by two methods, by production method, or as a sum of costs that occur during the production process. With market producers, output consists of sums of revenues, changes in inventories, trade margin, subsidies on products, while for non-market producers costs method is used. Output is expressed at basic prices.

3.1.5 Intermediate consumption

Intermediate consumption at purchasers' prices consists of :

- Goods and services that are used in the production process (costs of materials, fuel and energy costs, transport costs, rent, fairs, presentation, financial transactions, etc.);
- Value of goods and services obtained from other local business units of the same institutional unit;
- Expenditure of using rented fixed assets;
- Membership fees and other charges given to non-profit institutions;
- Staff training;
- Expenditure of procurement of work clothing necessary for work activities;
- Expenditure of non-life insurance;
- Financial Intermediation Services Indirectly Measured at the level of the overall economy – FISIM;
- Expenditure of procurement of tiny tools and inventory used during production process.

According to the accounting regulations of RS, lifetime of assets which lasts one year represents the boundary between distinguishing and defining the intermediate consumption of goods and gross fixed capital formation into fixed assets.

3.2 Valuation

3.2.1 Introduction

In accordance with the basic accounting principles, data in annual financial statements that are used for the calculation of output components and intermediate consumption are on accrual basis. The exceptions are some data for direct budget units and funds at the level of municipalities and government, which are on the cash basis, such as taxes.

3.2.2 Output

Output is evaluated at basic prices, from which taxes on products are excluded, but subsidies on products are included. For non-market producers, the calculation of output by cost method equals the sum of consumption of the fixed capital, other taxes on production, compensation of employees, intermediate consumption, while other subsidies on production are deducted from it. Output for market producers is the sum of sale of products and services, sale of goods minus the purchase value of sold goods i.e. trade margin, changes in inventories of finished products and work-in-progress, as well as subsidies on products.

3.2.3 Intermediate consumption

Intermediate consumption is evaluated at purchasers' prices.

3.2.4 Gross value added

GVA at basic prices is equal to the difference between output at basic prices and intermediate consumption at purchasers' prices.

3.2.5 Taxes on products

For the purpose of national accounts, BHAS takes the data on taxes from Indirect tax authority (ITA). Data that are indirect taxes, besides VAT, are taxes on imports and import duties, excise and all other taxes calculated on goods and services, also including sales taxes and road tolls. All taxes on the mentioned grounds, as well as VAT, are paid into the Single account of Indirect Taxation Authority of BiH and allocated to the entities and the Brcko District according to the agreed ratios of distribution.

Data are not classified by types of taxes and used in the total amount for GDP calculation. Total taxes on products in 2015 amounted 5 171 636 thousands KM, which is 18.1% of GDP.

3.2.6 Subsidies on products

Subsidies on products and services are non-returnable payments of government institutions to market producers, provided for the production process of enterprises or for the sale or import of products.

The main data source for subsidies on products is budgetary statistics.

For the first time, for the calculation of output for market producer, data were included from budgetary statistics on subsidies on products for 2007. Until then, data on subsidies derived from those collected from business entities. These subsidies mainly relate to the subsidies for agriculture, manufacturing industry and passenger rail transport.

Total subsidies on products in 2015 amounted 164 866 thousands KM.

3.2.7 Changes in inventories

According to the financial statement -Balance sheet- value of inventories for goods, raw materials and materials, work-in-progress and finished products are shown at the beginning and at the end of the accounting year at current prices. In national accounts, value of inventories by activities and type of inventories at the beginning and at the end of the accounting year are revaluated with the average price of that year. Changes in inventories are calculated as the difference between value at the end and value at the beginning of the year, by average prices. Changes in inventories of finished products and work-in-progress calculated in this way are included in the output calculation at current prices. Data sources for average prices are CPI and PPI.

3.3 Transition from private accounting and administrative concepts to ESA 2010 national accounting concepts

Entity statistical institutions have different situation according to accounting rules:

Federal Office for Statistics of BiH: Accounting and Auditing Law in F BiH regulates accounting and auditing used in private and public enterprises, entrepreneurs and other legal entities. In accordance with this Law, business entities are obliged to use International Accounting Standards (IAS), and International Financial Reporting Standards (IFRS), as well as other accompanying guidelines and explanations.

For the calculation of GDP components for enterprises, FIS uses the ‘Statistical Annex’, which is a part of obligatory annual financial statements. The ‘Statistical Annex’ data are presented in line with the accounting regulations.

Budgetary users at all budget levels (FBiH, cantons and municipalities) and non-budgetary funds conduct a budgetary accounting in accordance with the provisions of the Law on the Budget in FBiH. Essential changes of regulations within budgetary users accountancy are expected in the foreseeable future, as well as the beginning of publishing and applying special International Public Sector Accounting Standards (IPSAS). Budgetary units and non-budgetary funds submit financial statements prepared in line with the modified accrual basis principle. Revenues are recorded on cash basis, while expenditures are recorded on accrual basis.

3.3.1 Data sources for enterprises

Annual financial statement for enterprises, ‘Profit and loss account’, submitted to FIA has been conceptualized by the so-called functional principle and not natural type of revenues and costs for an accounting period. Consequently, FIS had to provide necessary data through the ‘Statistical Annex’. For this large group of business entities, it is possible to compare some aggregated data from Profit and loss account and ‘Statistical Annex’, as well as coverage of reporting units (which is very good).

The structure of ‘Statistical Annex’ is designed in such a way to meet most requirements of ESA 2010 concept. The most important adjustments for the production approach according to the ESA 2010 concept refer to the calculation of output which apart from operating revenues also includes changes in stocks of finished goods and work in progress (changes in stocks of finished goods and work in progress at average prices), as well as costs of traded goods. Data on subsidies on products are collected and used from budgetary statistics.

3.3.1.1 Output

Output is calculated at the level of institutional units (organizational principle) that are residents of the FBiH.

The items from ‘Statistical Annex - Table 1’ on the basis of which output is calculated are:

- Revenue from sold trade goods to legal joint entities
- Revenue from sold trade goods on domestic market
- Revenue from sold trade goods on foreign market
- Revenue from sold products and services to legal joint entities
- Revenue from sold products and services on domestic market
- Revenue from sold products and services on foreign market
- Revenue from activation or consumption of goods
- Other operating revenues (from rents, membership fees)
- Subsidies on product
- Changes in inventories of work in progress

- Changes in inventories of finished goods
- Costs of sold goods

3.3.1.2 Intermediate Consumption (IC)

Intermediate consumption is valued at purchasers` prices and represents a value of goods and services used as input during the production process, excluding fixed assets, registered as consumption of fixed capital. Products used for intermediate consumption are recorded and valued at the moment when they enter the production process.

The items from ‘Statistical Annex - Table 1’ on the basis of which intermediate consumption is calculated are:

- Costs of raw materials, energy and spare parts
- Costs of services
- Other operating costs
- Adjustment of value of stocks

In line with ESA 2010 requirements, from ‘other operating costs’ are excluded items which are included in compensation of employees allowances for employees, expenses for the other rights of employees, and allowances and other costs for members of the supervisory boards and commissions and by the taxes to be paid regardless of financial outcomes. Transport cost and accommodation cost are included in intermediate consumption and allowances for business trip are included in compensation of employees.

3.3.1.3 Methodological corrections for non-exhaustiveness

Output and intermediate consumption for enterprises are adjusted for estimates of NOE according to the non-exhaustiveness type (N1 to N7), in compliance with EUROSTAT-OECD Tabular Approach. Detailed description of sources and methods used for estimates of non-exhaustiveness is given in Chapter 7.

3.3.2 Data sources for financial institutions

The financial sector consists of financial companies and all financial institutions (commercial banks, Central Bank, microcredit financial institutions, investment funds, leasing companies, insurance companies).

The data source used to measure output and gross value added for the financial institutions is statistical survey. Financial services provided by financial organizations generate their output. Output for this activity consists of fees for bank services directly calculated and FISIM, where income is generated indirectly. FISIM is calculated as the difference between interests receivable from debtors (active interests) and payable to depositors (passive interests). The fact that FISIM is not allocated to the final consumers, the total GVA is reduced for these services. For the calculation of FISIM in national accounts, all relevant data are calculated on the base of statistical survey which is used for the output calculation for the banks.

Output is calculated as sum net interests and fees for banks services. Intermediate consumption of banks and other financial institutions includes expenses of materials, services, energy and other operating expenses.

Main data source for the calculation of value added for insurance companies is statistical form „Annual statement of insurance and reinsurance companies“ which insurance companies submit directly to FIS. Output of insurance companies is equal to the part of gross premium which insurance companies charge for their services. Gross premium consist of technical premium, prevention

premium and expense loading which insurance companies use for covering their operating expenses. Intermediate consumption of insurance companies includes material expenses, expenses of services and other non-material expenses such as intermediate consumption, consumption of fixed capital, compensation of employees etc., and it is calculated by insurance companies. Intermediate consumption of insurance companies includes material expenses, expenses of services and other non-material expenses.

3.3.3 Data sources for General Government

Two data sources are used in the calculation of GDP categories for general government sector. Data source for direct budgetary users for all levels of government (FBiH, cantons and municipalities) and non-budgetary funds are annual financial statements. For other non-market producers from general government sector, data are collected through 'Statistical Annex' (e.g. health institutions, Directorate for roads and similar). As there are several levels of authority in BiH (institutions at the BiH level, entity, municipal and, in FBiH, cantonal level), Agency for statistics of BiH (BHAS), conducts the calculation of GDP categories for the state level, and the data are allocated to the entities according to agreed principle of public revenues distribution.

Output is calculated by cost approach based on data from all mentioned sources. Output is obtained as a sum of compensation of employees, intermediate consumption and consumption of fixed capital and other taxes on production.

3.3.3.1 Compensation of employees

For direct budgetary users, Compensation of employees include following accounting items from annual financial statement:

- Gross salaries and wages
- Allowances for employees' other costs
- Employer's social contributions and other contributions

All mentioned items in the 'Profit and loss account' are shown as synthetic accounts that are classified by analytical standard at the Chart of accounts.

Gross salaries consist of the calculated net salaries and wages (for holidays, sick leaves, paid absence), employees' social contributions (for pension and disability insurance, health and unemployment).

Allowances for employees' other costs consist of cash remuneration for transport to and from work, separate living allowance, food at work, allowance for annual holiday, extra payments at retirement, jubilee rewards and similar allowances.

Employers' actual social contributions consist of compulsory employers' social contributions at the standard rate.

For other non-market producers from general government sector, compensation of employees covers the same items from the 'Statistical Annex'.

3.3.3.2 Intermediate consumption

Accounting item 'Expenses for material and services' from 'Profit and loss account' is included in intermediate consumption for direct budgetary users. This item consists of the expenses for transport costs, expenses for energy and utility services, transport and fuel services, purchase of materials, as well as expenses of current maintenance, renting of property and equipment, and contractual services and other special services.

For other non-market producers from general government sector, calculation of intermediate consumption is based on the same items from 'Statistical Annex'.

3.3.3.3 Consumption of fixed capital

For direct budgetary users, consumption of fixed capital is estimated to be 6% of GVA for activity O - Public administration and defence; compulsory social security, and to be 5% of GVA for direct budgetary users registered at other activities. Starting from the specific situation in BiH, where complete census of fixed assets by ownership has not been carried out, calculation of consumption of fixed capital is done according to the mentioned percentages. These percentages are established in line with recommendations of the international expert, observing the experience of neighbouring countries.

For other non-market producers from general government sector, the value of consumption of fixed capital is taken over from 'Statistical Annex'.

3.3.3.4 Methodological corrections for non-exhaustiveness

Methodological corrections for non-exhaustiveness in general government sector have not been made so far.

3.3.4 Data sources for unincorporated enterprises

Majority of future entrepreneurs face dilemma whether to choose the status of entrepreneur (self-employed person) or enterprise (legal entity). The answer is a matter of choice and personal decision based on the needs and opportunities. Before taking a final decision, it is necessary to consider positive and negative sides of both.

Advantages of entrepreneur are:

- Registration procedure is more simple (registration procedure is shorter, costs are lower and procedure can be done by the entrepreneur on his/her own, while the services of lawyer are required for registering legal entity);
- Bookkeeping is more simple and cheaper (financial records keeping is carried out according to the principle of simple bookkeeping by entrepreneurs, while a certified accountant has to manage financial records for legal entity);
- The method of calculation and payment of tax obligations, especially VAT is simpler (e.g. entrepreneurs have to calculate and pay VAT only for collected invoices, while enterprises have to do it for all invoices issued although they are not still paid. In circumstances where the long terms of delay in payment exist, the option to pay VAT only for collected invoices is shown as a huge advantage).

Self-employment is the simplest organizational form of business, where legal and registered activities are carried out independently and continuously. Each activity, which has making profit as an aim, should be registered. Some activities such as agriculture, handicraft, and household services are carried out mostly unregistered, because of low income. However, a number of persons registered for carrying out mentioned activities have been increasing recently.

Unincorporated enterprises – self-employed workers comprise craftsmen and free lancers who perform economic activities in order to gain profit from selling products or providing services on the market. Whether self-employment is one of the craft or freelance depends on the activity performed by entrepreneur. Thus, according to the Law on Craft, freelancing includes the activities of lawyers, notaries, engineers, architects, accountants, etc. The craft are handicraft activities, transport, hotels and restaurants and trade.

Data source used for calculating main macroeconomic categories for this group of business entities is statistical survey ‘*Calculation of gross value added and output for individual sector of non-agriculture activities for municipality* (‘*DV-DZ*’). Reporting units for this survey are Tax Authority offices in municipalities. Tax Authority office has all data required by ‘*DV-DZ*’ questionnaire; these data are essential for calculation of total output and GVA. Data are aggregated at the municipality level, not at the level of business entity.

Self-employed (entrepreneurs) have to fill in tax declaration forms in accordance with provisions of FBiH Tax Authority Law. If self-employed fail to submit their tax declaration forms to the respective Tax Authority office in the defined period, then the Tax Authority office will do it for them on the base of their previous business activities.

On the basis of the data from Annual tax declaration form, Tax Authority office in municipality fills in statistical ‘*DV-DZ*’-form with the following data:

- Number of self-employed that carry out particular activity as main or additional activity;
- Number of employees;
- Average monthly earnings of self-employed (net wage + profit) and employee's salary;
- Sum of assessed and calculated taxes, contributions and other contractual obligations.

‘*DV-DZ*’ form data are presented as aggregates by activities for whole municipality. The mentioned data, which are an integral part of ‘*DV-DZ*’ form, are determined by Tax Authority office by applying two methods:

- Data takeover method: Data on number of self-employed in main and secondary occupations, number of employees, a sum of calculated taxes and contributions, monthly earnings are taken over from Tax Authority records;
- Estimation method: a commission set up by Tax Authority office makes estimates for categories required by the form, for which Tax Authority either has no data or deems that the information given in Annual tax declaration form for natural persons is unrealistic.

Calculation of gross output and GVA is done by income approach. First, net value added at basic prices is calculated and represents basis for calculation of intermediate consumption and consumption of fixed capital. Net value added at basic prices is calculated as a sum of compensation of employees, mixed income and other taxes on production. Intermediate consumption and consumption of fixed capital are calculated by applying coefficients to net value added. Coefficients of intermediate consumption and consumption of fixed capital are different by activities, and they are calculated on the basis of intermediate consumption and consumption of fixed capital share in net value added of small enterprises (up to 5 employees). Coefficients used are shown in Table 3.5.

Table 3.3 Used coefficients for calculation of IC and CFC

	Intermediate consumption coefficients	Consumption of fixed capital coefficients
Construction F	1.19	0.08
Transport, storage and communication H	1.00	0.20
Wholesale and retail trade G	0.24	0.04
Accommodation and food service activities I	1.25	0.12
Manufacturing C	1.11	0.13
Other activities L,P,Q,R,S	0.93	0.08

Using data from ‘*DV-DZ*’ form, filled in by Tax Authority office in municipality on the basis of available data, the calculation of production elements for unincorporated units is done in NA Department, and it is shown in the following table. Calculation is done at the 2-digit level of NACE activities.

1. Number of self employed
2. Number of employees

3. Income of self employed
4. Net salary of employees
5. Taxes and contributes on salary
6. Tax on firm and other taxes on production
- 7. STARTING VALUE (3+4+5+6)**
8. Consumption of fixed capital (7 X Coef. Am)
9. Gross value added at basic prices (7 + 8)
10. Intermediate consumption (7 X Coef. IC)
- 11. Gross output at basic prices (9 + 10)**

Agriculture, forestry and fishing comprise production of individual agriculture households, including households registered as Entrepreneurs, as well as agriculture production of enterprises. Necessary data for calculation of output, intermediate consumption and GVA for enterprises are collected through „Statistical Annex of annual financial statement“, while the data for individual agriculture households are collected through particular statistical survey „Annual calculation of output and value added for private sector of agriculture without legal entities - agriculture households for municipality (DV-POLJ)“. Reporting unit is municipality, and detailed data on quantities and values of produced and consumed products are collected at municipality level, not at the level of individual agriculture household. Data source for filling in this questionnaire is agriculture statistics.

Output

The output of individual agriculture sector is calculated by using collected data on produced quantities and prices by products. The products are classified by the following types: for cereals, vegetables, industrial and feed crops, fruits and fruit processing, increase of livestock and livestock breeding products. The prices collected through „DV-POLJ“ form, in accordance with defined methodology, are wholesale prices adjusted by the prices of the products used for feeding household members or livestock, for seeds or sale at a market place. Individual agriculture producers, according to legislation, receive subsidies on production and products. Data on subsidies on the production and products have been collected by the FBiH Ministry of agriculture and the cantonal ministries of finance. This value is incorporated in output.

Intermediate consumption

Intermediate consumption for enterprises is calculated using data from the „Statistical Annex“ what is described in details in § 3. 3. 1. For individual agriculture sector, necessary data for the calculation of intermediate consumption (data on costs in-kind – for feeding of livestock and seeds and costs in cash) are collected through „DVPOLJ“ form. Corrections for NOE for entrepreneurs (craftsmen and freelances) are done by non-exhaustiveness types that are described in detail in Chapter 7.

3.3.5 Data sources for Non-profit institutions serving households (NPISHs)

Data source for the calculation of the main GDP categories for Non-profit institutions serving households (NPISHs) is Annual financial statements (Profit and loss accounts and Additional data on number of employees and wages). This is a very heterogeneous group of business entities registered as associations and other non-profit organizations and non-profit funds and foundations.

Collected accounting data are calculated in GDP categories in line with ESA 2010 concept. Output is calculated by cost method. The output equals a sum of compensation of employees, intermediate consumption, consumption of fixed capital and other taxes on production.

Compensation of employees consists of net wages and salaries, contributions from and on salaries and remuneration wages.

Intermediate consumption is calculated as a sum of the following items: Material and energy, Services and Travel costs from Profit and loss accounts.

Value of consumption of fixed capital is taken over from Profit and loss accounts for associations and other non-profit organizations.

Institut for statistics of Republika Srpska: Accounting rules and Chart of accounts in RS do not entirely meet the needs of national accounts, and do not provide for consistent use of ESA 2010 methodology for the GDP calculation by production approach. This is why certain adjustments and adaptations of financial statement data are required to meet the needs of national accounts. An integral part of financial statements is an accounting Annex which has largely simplified the GDP calculation by production method. Accounting Annex has been designed by the staff from RSIS National Accounts department in cooperation with RS Association of Accountants and Auditors and the RS Ministry of Finances department, responsible for regulations and legislation of accounting profession.

3.3.6 Data sources for enterprises

The main source of data for the calculation of GDP are annual financial reports for market enterprises.

Output

Output at basic prices consists:

- Revenue from sold products and services on domestic market
- Revenue from sold products and services on foreign market
- Revenue from sold trade goods
- Other revenue (from rents, membership fees)
- Changes in inventories of finished goods and work in progress
- Costs of sold goods
- Subsidies on product

Intermediate consumption

Intermediate consumption at purchaser prices consists of :

- Costs of raw materials
- Costs of other materials
- Costs of fuel and energy
- Costs of services
- Non material costs

Intermediate consumption is corrected for :

- Gross insurance premium;
- Employees' fees expenditure;
- Part of tax expenditure

Negative conceptual corrections consist of gross insurance premium and expenditure of employees' fees. In financial reports, the item costs of insurance premium is a part of synthetic account of non-material costs which comprises of :

- Expenditure of employees' fees;
- Representation costs;
- Non-production services costs;
- Cost of insurance premiums;
- Costs of money transfers;
- Membership fees costs;

- Other non-material costs.

Non-material costs item, in addition to the category of costs which make up intermediate consumption, comprises also a part of costs that refers to employees' fees, and those are:

- Per diems for business trips;
- Fees for field bonuses;
- Fees for living apart;
- Fees for employees' food during worktime;
- Travelling fees to and from work.

According to the ESA methodology principles, national accounts experts corrected a part of non-material costs which refers to employees' fees, which was done within the scope of negative conceptual correction. The part excluded from intermediate consumption is included into compensation of employees.

Positive conceptual correction refers to the part of costs of taxes which in financial report can be found within the item costs of taxes. Through analysis of the above mentioned item in direct contact with enterprises, the conclusion was made that, in addition to other taxes on production, costs which refers to production and which should be included in intermediate consumption is booked as well on the same item(costs of taxes). Because of this, a conceptual correction is made and included a part of the item costs of taxes into intermediate consumption.

Data sources for financial institutions

The main source of data for the calculation of GDP are annual financial reports for financial institutions.

Output is calculated as the difference between interests receivable and payable and fees for banks services. Intermediate consumption of banks and other financial institutions includes expenses of materials, services, energy and other operating expenses. Intermediate consumption also

Calculation of output and intermediate consumption for the part of Central Bank which belongs to RS is obtained as already accounted category from the Agency for Statistics of Bosnia and Herzegovina.

Output of insurance companies is equal to the part of gross insurance premium which insurance companies charge for their services corrected with damages and expenses for technical reservation that were taken over.

For intermediate consumption calculation of insurance companies, in addition to standard costs, also commissions costs are included, other acquisition costs, reinsurance costs, other technical expenses and non-technical expenses.

3.3.7 Data sources for government

General Government sector consists of non-market enterprises as indirect budget users and government as a direct budget user. There are two sources of data, and these are Budget Report for local and entity levels of government (direct budget users) and financial reports for public non-market enterprises (hospitals, funds, etc.). Budget Report which refers to revenues is based on cash principle, while costs are on the accrual base. GVA calculation for this sector is done by costs method.

Output

Output for general government sector is calculated as a sum of intermediate consumption, compensation of employees, other taxes on production and consumption of fixed capital.

Intermediate consumption

Intermediate consumption of the government sector consists of:

- Travelling expenses;
- Energy costs;
- Costs of communal services;
- Material supply;
- Costs of transport services;
- Costs of rent;
- Costs of current maintenance;
- Other costs

3.3.8 Data sources for unincorporated units

Individual entrepreneurs are still not obliged by the law to submit annual financial reports with all necessary categories of revenues and expenses. Number of submitted financial reports that deal with double accounting is very small, so there are more of those who paid flat taxation. Data in reports for flat taxation are not on the satisfactory level to meet the national accounts needs.

Because of the lack of financial reports in the area of entrepreneurs, annual statistical survey carry out for the components that are relevant for the gross value added calculation of this segment of the economy. Survey is based on the sample of entrepreneurs who employ five or more people, and it includes all necessary and relevant categories for GDP calculation. On the basis of the data from sample for individual entrepreneurs' area, aggregation of data to the total number of registered individual entrepreneurs was done, using data from labour statistics.

Individual agricultural production which is based on the data from economic accounts for agriculture (EEA). The important sources data for NA is production account.

3.3.9 Data sources for non-profit institutions

Non-profit institutions, which belong to the sector Non-profit institutions serving households, include different clubs and associations, cultural and other fellowships, syndicate organizations and all other institutions whose business activities are non-market. Main source of data for non-profit institutions are financial reports which are based on accrual principle and they are provided by APIF. GVA calculation for this sector is done using costs method, as it was mentioned before for general government sector. Exhaustiveness adjustments in this sector refer to estimates of religious communities. Because religious communities are not obliged to submit financial reports, adjustments were made for their non-reporting.

Output

Output for non-profit institutions is calculated as a sum of intermediate consumption, compensation of employees, other taxes on production and consumption of fixed capital, i.e. costs approach is used. Output is increased also for estimates of religious communities, as exhaustiveness adjustment.

3.3.4.2 Intermediate consumption

Intermediate consumption of the non-profit institutions serving households sector consists of :

- Costs of material for making;
- Costs of other material;
- Costs of fuel and energy;
- Costs of production services;

- Non-material costs.

3.4 The roles of direct and indirect estimation methods

Estimation of GDP according to the production approach is mainly based on direct method, using data from regular annual statistical surveys or Annual accounting statements, depends on a group of business entities for which data are collected. Annual accounting statements, which usually cover all sectors except that of households, are available three or four months after the end of the calendar year.

Direct data are collected from each of the entity statistical institutions, by NACE and type of business entity. These data are then aggregated together to form the totals for Bosnia and Herzegovina.

3.5 The roles of benchmarks and extrapolations

Benchmark and extrapolation methods are used for the estimate of GDP component for imputed rent. Estimate of value of imputed rent is based on OECD methodology. It was carried out within EUROSTAT-OECD Project for improving exhaustiveness of GDP estimates in Western Balkan Countries, in which BHAS and entity institutes participated. Estimate was done by user cost method, as the sum of estimated consumption of fixed capital, intermediate consumption, taxes on production and operating surplus. The estimate was made for 2004 (benchmark year), and after that annual series of data were made at current and constant prices. The calculation of imputed rent is done by BHAS, and then it is delivered to the entities.

3.6 Main approaches taken concerning non-observed economy

During 2004, the Project on Non-observed economy (NOE) started in cooperation and organization of EUROSTAT and OECD. The project was focused on the improvement of exhaustiveness of sources for the GDP estimate. The project was implemented in two phases, using Tabular Approach to NOE estimate by types of non-exhaustiveness (from N1 to N7), and they were included in GDP calculation by production approach. Illegal activities were not included (N2).

Total estimates of NOE for GDP 2015 amounted to KM 1 873 086 thousands forming 7.7% of total GVA (illegal activities not included). Estimates for NOE will be explained in more detail in Chapter 7.

There are following type of non-exhaustiveness:

- N1 - Producers who deliberately avoid registration;
- N2 - Illegal activities;
- N3 - Not obliged to register;
- N4 - Legal persons not surveyed;
- N5 - Legal registered un-incorporated enterprise not surveyed;
- N6 - Producers deliberately under-reporting;
- N7 - Other statistical deficiencies.

3.7 Agriculture, forestry and fishing (A)

Introduction

Agriculture, forestry and fishing comprise production of individual agriculture households, including households registered as Entrepreneurs, as well as agriculture production of enterprises. Necessary data for calculation of output, intermediate consumption and GVA for enterprises are collected

through „Statistical Annex of annual financial statement“, while the data for individual agriculture households are collected through particular statistical survey „Annual calculation of output and value added for private sector of agriculture without legal entities - agriculture households for municipality (DV-POLJ)“. Reporting unit is municipality, and detailed data on quantities and values of produced and consumed products are collected at municipality level, not at the level of individual agriculture household. Data source for filling in this questionnaire is agriculture statistics.

Estimated GVA of Agriculture, forestry and fishing for 2015 amounts to 1 783 430 thousand KM, which is 7.3% of GVA for all activities and 6.2% of GDP. The most important part of agriculture production includes production of individual agriculture households, and their GVA is around 80.3% of GVA of Agriculture, forestry and fishing.

Table 3.4: A Agriculture, forestry and fishing, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
A Total	4 000 937	2 217 507	1 783 430	100.0	6.2
Enterprises	725 345	392 645	332 700	18.1	1.2
Individual farmers	3 217 273	1 785 329	1 431 944	80.4	5.0
Entrepreneurs	56 349	39 547	16 802	1.4	0.1
R&D	1 959	-14	1 973	0.0	0.0
Software	11	0	11	0.0	0.0

Table 3.4: Share of Entities in activity Agriculture, forestry and fishing, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	4 000 937	2 217 507	1 783 430	100.0
Federation of Bosnia and Herzegovina	1 855 876	999 049	856 827	48.0
Republika Srpska	2 039 398	1 181 899	857 499	48.1
Brcko District	105 663	36 559	69 104	3.9

Corrections of GVA, for Agriculture, forestry and fishing, for NOE amounted 51 357 thousand KM or 2.9% according to the total value for GVA of this activity.

Output

The output of Agriculture, forestry and fishing in 2015 amounts to 4 000 937 thousand KM, and it is 8.1% of the Output of all activities. The most important part of agriculture production includes production of individual farmers (80.4%).

Table 3.5 : Output of Agriculture, forestry and fishing, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	690 209	35 136	725 345
Individual farmers	3 214 878	2 395	3 217 273
Entrepreneurs	45 434	10 915	56 349
R&D	1 959		1 959
Software	11		11
Total output	3 952 491	48 446	4 000 937
Federation of Bosnia and Herzegovina			
Enterprises	335 917	12 588	348 505
Individual farmers	1 506 961		1 506 961

Entrepreneurs	279	120	399
R&D			
Software	11		11
Total output	1 843 168	12 708	1 855 876
Republika Srpska			
Enterprises	348 430	19 453	367 883
Individual farmers	1 613 606		1 613 606
Entrepreneurs	45 155	10 795	55 950
R&D	1 959		1 959
Software			
Total output	2 009 150	30 248	2 039 398
Brcko District			
Enterprises	5 862	3 095	8 957
Individual farmers	94 311	2 395	96 706
Entrepreneurs			
R&D			
Software			
Total output	100 173	5 490	105 663

Intermediate consumption

Intermediate consumption of Agriculture, forestry and fishing in 2015 amounts to 2 217 507 thousand KM and it is 55.4% of output. Corrections for NOE of intermediate consumption are negative and amounts to 2 911 thousand KM.

Table 3.6: Intermediate consumption of Agriculture, forestry and fishing, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	397 248	-4 603	392 645
Individual farmers	1 784 443	886	1 785 329
Entrepreneurs	38 741	806	39 547
R&D			
Software			
Total Intermediate consumption	2 220 418	-2 911	2 217 507
Federation of Bosnia and Herzegovina			
Enterprises	178 419	1 496	179 915
Individual farmers	819 000		819 000
Entrepreneurs	134		134
R&D			
Software			
Total Intermediate consumption	997 553	1 496	999 049
Republika Srpska			
Enterprises	214 013	-7 405	206 608
Individual farmers	935 892		935 892
Entrepreneurs	38 607	806	39 413

R&D	-14		-14
Software			0
Total Intermediate consumption	1 188 498	-6 599	1 181 899
Brcko District			
Enterprises	4 816	1 306	6 122
Individual farmers	29 551	886	30 437
Entrepreneurs	0		0
R&D			
Software			
Total Intermediate consumption	34 367	2 192	36 559

3.8 Mining and quarrying (B)

Introduction

GVA for activity Mining and quarrying is generated mostly by large companies in state ownership, while the share of Entrepreneurs is not significant.

Estimated GVA for 2015 amounts to 565 333 thousand KM, which is 2.0% of GDP. Section Mining of coal and lignite has the largest share in GVA (69.8%) for activity B.

Table 3.7: B Mining and quarrying, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
B Total	927 264	361 931	565 333	100.0	2.0
Enterprises	926 576	361 830	564 746	99.9	2.0
Entrepreneurs	185	105	81	0.0	0.0
R&D	502	-4	506	0.1	0.0

Table 3.8: Share of Entities in activity Mining and quarrying, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	927 264	361 931	565 333	100.0
Federation of Bosnia and Herzegovina	550 765	201 339	349 426	61.8
Republika Srpska	376 177	160 368	215 809	38.2
Brcko District	322	224	98	0.0

Corrections of the GVA for NOE amounted 15 355 thousand KM.

Output

The output of activity B in 2015 amounts to 927 264 thousand KM, which is 1.9% of the output of the whole economy.

Table 3.9: Output of Mining and quarrying, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	915 629	10 947	926 576
Entrepreneurs	167	18	185

R&D	502		502
Total output	916 299	10 965	927 264
Federation of Bosnia and Herzegovina			
Enterprises	543 076	7 600	550 676
Entrepreneurs	71	18	89
R&D			
Total output	543 147	7 618	550 765
Republika Srpska			
Enterprises	372 231	3 347	375 578
Entrepreneurs	96		96
R&D	502		502
Total output	372 830	3 347	376 177
Brcko District			
Enterprises	322		322
Entrepreneurs			
R&D			
Total output	322		322

Intermediate consumption

Value of intermediate consumption amounts to 361 931 thousand KM and its share in output is 39.0 %. Corrections of the intermediate consumption are negative and amounts to 4 390 thousand KM, which is 2.7% of the total intermediate consumption for this activity.

Table 3.10: Intermediate consumption of Mining and quarrying, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	366 220	-4 390	361 830
Entrepreneurs	105		105
R&D	-4		-4
Total Intermediate consumption	366 321	-4 390	361 931
Federation of Bosnia and Herzegovina			
Enterprises	201 462	-159	201 303
Entrepreneurs	36		36
R&D			
Total Intermediate consumption	201 498	-159	201 339
Republika Srpska			
Enterprises	164 534	-4 231	160 303
Entrepreneurs	69		69
R&D	-4		-4
Total Intermediate consumption	164 599	-4 231	160 368
Brcko District			
Enterprises	224		224
Entrepreneurs			
R&D			
Total Intermediate consumption	224		224

3.9 Manufacturing (C)

Introduction

GVA for activity Manufacturing amounts to 3 336 450 thousand KM and its share is 13.7% in total GVA of all activities and 11.7% in GDP

In total GVA for this activity, the enterprises participate with 93.9%, while Entrepreneurs participate with just 5.9%.

Largest share in GVA for this activity have: Manufacture of food products 16.35%; Manufacture of fabricated metal products, except machinery and equipment 13.30%; Manufacture of basic metals 7.25%; Manufacture of wood and of products of wood and cork, except furniture 7.13% and Manufacture of leather and related products 5.17%.

Table 3.11: C Manufacturing, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
C Total	13 057 374	9 720 924	3 336 450	100.0	11.7
Enterprises	12 507 541	9 375 360	3 132 181	93.9	11.0
Entrepreneurs	541 578	345 585	195 993	5.9	0.7
R&D	8 191	-21	8 212	0.2	0.0
Software	64	0	64	0.0	0.0

Table 3.12: Share of Entities in activity Manufacturing, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	13 057 374	9 720 924	3 336 450	100.0
Federation of Bosnia and Herzegovina	8 687 733	6 331 056	2 356 677	70.6
Republika Srpska	3 995 747	3 103 438	892 309	26.7
Brcko District	373 894	286 430	87 464	2.6

Corrections of GVA for Manufacturing for NOE amounts to 218 631 thousand KM and its share is 6.6% in the total value for GVA of this activity.

Output

The output of Manufacturing amounts to 13 057 374 thousand KM and it is 26.4% of the Output of all activities

Corrections of Output for NOE amounts to 277 540 thousand KM and it is 2.1% of total value of output for this activity.

Table 3.13: Output of Manufacturing 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	12 296 678	210 863	12 507 541
Entrepreneurs	474 901	66 677	541 578
R&D	8 191		8 191
Software	64		64

Total output	12 779 834	277 540	13 057 374
Federation of Bosnia and Herzegovina			
Enterprises	8 329 795	80 325	8 410 120
Entrepreneurs	245 716	26 565	272 281
R&D	5 268		5 268
Software	64		64
Total output	8 580 843	106 890	8 687 733
Republika Srpska			
Enterprises	3 603 767	125 227	3 728 994
Entrepreneurs	223 718	40 112	263 830
R&D	2 923		2 923
Software			
Total output	3 830 408	165 339	3 995 747
Brcko District			
Enterprises	363 116	5 311	368 427
Entrepreneurs	5 467		5 467
R&D			
Software			
Total output	368 583	5 311	373 894

Intermediate consumption

Intermediate consumption for this activity amounts to 9 720 924 thousand KM and its share in Output is 74.4%.

Corrections of Intermediate consumption for NOE amounts to 58 909 thousand KM which is 0.6% of the total intermediate consumption for this activity.

Table 3.14: Intermediate consumption of Manufacturing 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	9 323 419	51 941	9 375 360
Entrepreneurs	338 617	6 968	345 585
R&D	-21	0	-21
Software	0	0	0
Total Intermediate consumption	9 662 015	58 909	9 720 924
Federation of Bosnia and Herzegovina			
Enterprises	6 158 337	7 582	6 165 919
Entrepreneurs	159 366	5 771	165 137
R&D			
Software			
Total Intermediate consumption	6 317 703	13 353	6 331 056
Republika Srpska			
Enterprises	2 884 171	41 550	2 925 721
Entrepreneurs	176 541	1 197	177 738
R&D	-21		-21
Software			

Total Intermediate consumption	3 060 691	42 747	3 103 438
Brcko District			
Enterprises	280 911	2 809	283 720
Entrepreneurs	2 710	0	2 710
R&D			
Software			
Total Intermediate consumption	283 621	2 809	286 430

3.10 Electricity, gas, steam and air conditioning supply (D)

Introduction

Production in this activity is generated mostly in public enterprises.

GVA for this activity is 1 109 369 thousand KM and its share is 4.6% in total GVA for all activities and 3.9% in GDP.

Table 3.15: D Electricity, gas, steam and air conditioning supply, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
	000 KM			%	
D Total	2 037 145	927 776	1 109 369	100.0	3.9
Enterprises	2 024 189	925 118	1 099 071	99.1	3.8
Entrepreneurs	5 284	391	4 893	0.4	0.0
R&D	847	0	847	0.1	0.0
Non-market producers	6 825	2 267	4 558	0.4	0.0

Table 3.16: Share of Entities in activity Electricity, gas, steam and air conditioning supply, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	2 037 145	927 776	1 109 369	100.0
Federation of Bosnia and Herzegovina	1 455 943	752 884	703 059	63.4
Republika Srpska	564 165	171 360	392 805	35.4
Brcko District	17 037	3 532	13 505	1.2

Corrections of GVA for Electricity, gas, steam and air conditioning supply for NOE amounts to 15 929 thousand KM and share in the total value for GVA of this activity is 1.4%.

Output

Output for this activity amounts to 2 037 145 thousand KM and it is 4.1% of output for all activities. Corrections of output for NOE amounts to 11 347 thousand KM or 0.6% of total value of output for this activity.

Table 3.17: Output of Electricity, gas, steam and air conditioning supply, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	2 017 996	6 193	2 024 189
Entrepreneurs	130	5 154	5 284

R&D	847		847
Non-market producers	6 825		6 825
Total output	2 025 798	11 347	2 037 145
Federation of Bosnia and Herzegovina			
Enterprises	1 443 898	6 193	1 450 091
Entrepreneurs	130	332	462
R&D	847		847
Non-market producers	4 543		4 543
Total output	1 449 418	6 525	1 455 943
Republika Srpska			
Enterprises	557 061		557 061
Entrepreneurs		4 822	4 822
R&D			
Non-market producers	2 282		2 282
Total output	559 343	4 822	564 165
Brcko District			
Enterprises	17 037		17 037
Entrepreneurs			
R&D			
Non-market producers			
Total output	17 037		17 037

Intermediate consumption

Intermediate consumption for this activity amounts to 927 776 thousand KM and its share output is 45.5%.

Corrections of the Intermediate consumption for NOE are negative and amounts to 4 582 thousand KM.

Table 3.18: Intermediate consumption of Electricity, gas, steam and air conditioning supply, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	930 060	-4 942	925 118
Entrepreneurs	31	360	391
R&D			
Non-market producers	2 267		2 267
Total Intermediate consumption	932 358	-4 582	927 776
Federation of Bosnia and Herzegovina			
Enterprises	751 484	-139	751 345
Entrepreneurs	31		31
R&D			
Non-market producers	1 508		1 508
Total Intermediate consumption	753 023	-139	752 884
Republika Srpska			
Enterprises	174 038	-3 797	170 241
Entrepreneurs		360	360
R&D			

Non-market producers	759		759
Total Intermediate consumption	174 797	-3 437	171 360
Brcko District			
Enterprises	4 538	-1 006	3 532
Entrepreneurs			
R&D			
Non-market producers			
Total Intermediate consumption	4 538	-1 006	3 532

3.11 Water supply; sewerage, waste management and remediation activities (E)

Introduction

GVA for this activity amounts to 307 261 thousand KM and it is 1.3% of total GVA of all activities and 1.1% in GDP.

In the total GVA for this activity enterprises are mostly engaged with 98.6% while the share of Entrepreneurs is 0.1%. Largest share in GVA for this activity has Water collection treatment and supply (54.4%).

Table 3.19: E Water supply; sewerage, waste management and remediation activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
E Total	572 333	265 072	307 261	100.0	1.1
Enterprises	562 772	259 808	302 964	98.6	1.1
Entrepreneurs	7 433	4 345	3 088	1.0	0.0
R&D	484	-3	487	0.2	0.0
Software	7		7	0.0	0.0
Non-market producers	1 637	922	715	0.2	0.0

Table 3.20: Share of Entities in activity Water supply; sewerage, waste management and remediation activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	572 333	265 072	307 261	100.0
Federation of Bosnia and Herzegovina	404 100	195 519	208 581	67.9
Republika Srpska	167 214	69 553	97 661	31.8
Brcko District	1 019		1 019	0.3

Corrections of GVA for this activity for NOE amounts to 15 997 thousand KM or 5.2% in the total GVA of this activity.

Output

Output for this activity amounts to 572 333 thousand KM which is 1.2% of output for all activities. Corrections of output for NOE amounts to 13 930 thousand KM which is 2.4% of total output for this activity.

Table 3.21: Output of Water supply; sewerage, waste management and remediation activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	555 396	7 376	562 772
Entrepreneurs	1 893	5 540	7 433
R&D	484		484
Software	7		7
Non-market producers	623	1 014	1 637
Total output	558 403	13 930	572 333
Federation of Bosnia and Herzegovina			
Enterprises	394 002	6 668	400 670
Entrepreneurs	1 288	498	1 786
R&D			
Software	7		7
Non-market producers	623	1 014	1 637
Total output	395 920	8 180	404 100
Republika Srpska			
Enterprises	160 375	708	161 083
Entrepreneurs	605	5 042	5 647
R&D	484		484
Software			
Non-market producers			
Total output	161 464	5 750	167 214
Brcko District			
Enterprises	1 019		1 019
Entrepreneurs			
R&D			
Software			
Non-market producers			
Total output	1 019		1 019

Intermediate consumption

Intermediate consumption amounts to 265 072 thousand KM and its share in output for this activity is 46.3%.

Corrections of the Intermediate consumption for NOE has negative value and it is amounts to 2 067 thousand KM.

Table 3.22: Intermediate consumption of Water supply; sewerage, waste management and remediation activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	262 810	-3 002	259 808
Entrepreneurs	3 973	372	4 345
R&D	-3	0	-3
Software	0	0	0

Non-market producers	359	563	922
Total Intermediate consumption	267 139	-2 067	265 072
Federation of Bosnia and Herzegovina			
Enterprises	194 083	-161	193 922
Entrepreneurs	675	0	675
R&D			
Software			
Non-market producers	359	563	922
Total Intermediate consumption	195 117	402	195 519
Republika Srpska			
Enterprises	68 159	-2 273	65 886
Entrepreneurs	3 298	372	3 670
R&D	-3		-3
Software			0
Non-market producers			0
Total Intermediate consumption	71 454	-1 901	69 553
Brcko District			
Enterprises	568	-568	0
Entrepreneurs			
R&D			
Software			
Non-market producers			
Total Intermediate consumption	568	-568	0

3.12 Construction (F)

Introduction

GVA for activity Construction amounts to 1 124 836 thousand KM and it is 4.6% of GVA for all activities and 3.9% in GDP.

GVA for enterprises amounted to 878 063 thousand KM which is 78.1% of total GVA in this activity while Entrepreneurs in construction generated 6.0% and individual construction 15.9% of GVA in this activity.

Largest share in GVA for this activity have: Construction of buildings (46.0%); Civil engineering (28.1%) and Specialised construction activities (25.9%).

Table 3.23: F Construction, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
F Total	3 250 738	2 125 902	1 124 836	100.0	3.9
Enterprises	2 603 908	1 725 845	878 063	78.1	3.1
Entrepreneurs	153 356	85 778	67 578	6.0	0.2
Software	2	0	2	0.0	0.0
Individual construction	493 472	314 279	179 193	15.9	0.6

Table 3.24: Share of Entities in activity Construction, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	3 250 738	2 125 902	1 124 836	100.0
Federation of Bosnia and Herzegovina	1 954 748	1 284 409	670 339	59.6
Republika Srpska	1 249 863	814 824	435 039	38.7
Brcko District	46 127	26 669	19 458	1.7

Corrections of GVA for activity Construction for NOE amounts to 200 751 thousand KM or its share is 17.8% in the total GVA of this activity.

Output

Output for this activity amounts to 3 250 738 thousand KM and it is 6.6% of total output of all activities.

Corrections of output for NOE amounts to 382 323 thousand KM and its share in total value of output for this activity is 11.8%.

Table 3.25: Output of Construction, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	2 487 154	116 754	2 603 908
Entrepreneurs	109 316	44 040	153 356
Software	2	0	2
Individual construction	271 943	221 529	493 472
Total output	2 868 415	382 323	3 250 738
Federation of Bosnia and Herzegovina			
Enterprises	1 598 084	38 844	1 636 928
Entrepreneurs	63 150	33 139	96 289
Software	2	0	2
Individual construction		221 529	221 529
Total output	1 661 236	293 512	1 954 748
Republika Srpska			
Enterprises	849 261	76 356	925 617
Entrepreneurs	42 055	10 248	52 303
Software			
Individual construction	271 943		271 943
Total output	1 163 259	86 604	1 249 863
Brcko District			
Enterprises	39 809	1 554	41 363
Entrepreneurs	4 111	653	4 764
Software			
Individual construction			
Total output	43 920	2 207	46 127

Intermediate consumption

Intermediate consumption of activity Construction amounts to 2 125 902 thousand KM which is 65.4% of output for this activity.

Corrections of the Intermediate consumption for NOE amounts to 181 572 thousand KM which is 8.5% of total value for intermediate consumption of this activity.

Table 3.26: Intermediate consumption of Construction, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	1 707 224	18 621	1 725 845
Entrepreneurs	66 821	18 957	85 778
Software			
Individual construction	170 285	143 994	314 279
Total Intermediate consumption	1 944 330	181 572	2 125 902
Federation of Bosnia and Herzegovina			
Enterprises	1 080 336	2 772	1 083 108
Entrepreneurs	38 751	18 556	57 307
Software			
Individual construction		143 994	143 994
Total Intermediate consumption	1 119 087	165 322	1 284 409
Republika Srpska			
Enterprises	602 423	15 849	618 272
Entrepreneurs	25 915	352	26 267
Software			
Individual construction	170 285		170 285
Total Intermediate consumption	798 623	16 201	814 824
Brcko District			
Enterprises	24 465	0	24 465
Entrepreneurs	2 155	49	2 204
Software			
Individual construction			
Total Intermediate consumption	26 620	49	26 669

3.13 Wholesale and retail trade; repair of motor vehicles and motorcycles (G)

Introduction

This activity G has the largest share in GVA of all activities and GDP.

GVA for this activity amounts to 3 826 588 thousand KM and its share is 15.7% in total GVA for all activities and 13.4% in GDP.

In GVA for this activity the share of enterprises is the most significant and it amounts to 85.4%, while the share of Entrepreneurs is 14.6%. Largest share in GVA for this activity has division Retail trade (51.1%).

Table 3.27: G Wholesale and retail trade; repair of motor vehicles and motorcycles, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
	000 KM		%		
G Total	6 634 507	2 807 918	3 826 588	100.0	13.4

Enterprises	5 879 569	2 609 985	3 269 584	85.4	11.4
Entrepreneurs	754 920	197 933	556 987	14.6	1.9
Software	17	0	17	0.0	0.0

Table 3.28: Share of Entities in activity Wholesale and retail trade; repair of motor vehicles and motorcycles. 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	6 634 507	2 807 918	3 826 588	100.0
Federation of Bosnia and Herzegovina	4 549 029	1 891 385	2 657 644	69.5
Republika Srpska	1 909 942	864 332	1 045 609	27.3
Brcko District	175 536	52 201	123 335	3.2

Corrections of GVA for the activity G for NOE amounts to 416 585 thousand KM and its share in total GVA for this activity is 10.9%.

Output

Output for activity G amounts to 6 634 507 thousand KM and it is 13.4% of output for all activities. Share of output of enterprises in total output for this activity is 88.6%, while the share of Entrepreneurs is 11.4%

Corrections of output for NOE amounts to 482 171 thousand KM and it is 7.3% of total output for this activity.

Table 3.29: Output of Wholesale and retail trade; repair of motor vehicles and motorcycles, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	5 669 697	209 872	5 879 569
Entrepreneurs	482 621	272 299	754 920
Software	17		17
Total output	6 152 336	482 171	6 634 507
Federation of Bosnia and Herzegovina			
Enterprises	3 994 773	105 657	4 100 430
Entrepreneurs	230 883	217 699	448 582
Software	17		17
Total output	4 225 673	323 356	4 549 029
Republika Srpska			
Enterprises	1 557 543	92 477	1 650 020
Entrepreneurs	208 515	51 406	259 921
Software			
Total output	1 766 059	143 883	1 909 942
Brcko District			
Enterprises	117 381	11 738	129 119
Entrepreneurs	43 223	3 194	46 417
Software			
Total output	160 604	14 932	175 536

Intermediate consumption

Intermediate consumption for activity G amounts to 2 807 918 thousand KM and it is 42.9% of output for this activity

Corrections of Intermediate consumption for NOE is positive and it amounts to 65 586 thousand KM or 2.3% of total value of Intermediate consumption for this activity.

Table 3.30: Intermediate consumption of Wholesale and retail trade; repair of motor vehicles and motorcycles, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	2 600 758	9 227	2 609 985
Entrepreneurs	141 574	56 359	197 933
Software			
Total Intermediate consumption	2 742 332	65 586	2 807 918
Federation of Bosnia and Herzegovina			
Enterprises	1 753 736	3 549	1 757 285
Entrepreneurs	77 856	56 244	134 100
Software			
Total Intermediate consumption	1 831 592	59 793	1 891 385
Republika Srpska			
Enterprises	807 495	1 726	809 221
Entrepreneurs	54 996	115	55 111
Software			
Total Intermediate consumption	862 491	1 841	864 332
Brcko District			
Enterprises	39 527	3 952	43 479
Entrepreneurs	8 722	0	8 722
Software			
Total Intermediate consumption	48 249	3 952	52 201

3.14 Transportation and storage (H)

Introduction

In this activity the enterprises with 86.8% of GVA are dominant.

GVA for activity Transportation and storage amounts to 1 034 562 thousand KM and it is 4.3% of total GVA for all activities and 3.6% of GDP. Share of the enterprises in GVA amounts to 86.8%. Share of the Entrepreneurs is 12.8% and share of non-market producers is 0.3%. The most important activity is Land transport and transport via pipelines with 72.8% share in GVA for activity H – Transport and storage.

Table 3.31: H Transportation and storage, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
H Total	2 133 998	1 099 436	1 034 562	100.0	3.6
Enterprises	1 910 983	1 012 839	898 144	86.8	3.1

Entrepreneurs	218 675	85 823	132 852	12.8	0.5
Non-market producers	4 340	774	3 566	0.3	0.0

Table 3.32: Share of Entities in activity Transportation and storage, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	2 133 998	1 099 436	1 034 562	100.0
Federation of Bosnia and Herzegovina	1 462 391	741 471	720 920	69.7
Republika Srpska	592 073	302 410	289 663	28.0
Brcko District	79 534	55 555	23 979	2.3

Corrections of GVA for activity Transportation and storage for NOE 105 956 thousand KM and it is 10.2% of the GVA for this activity.

Output

Output for this activity amounts to 2 133 998 thousand KM and it is 4.3% of output for all activities. Corrections of output for NOE amounts to 116 796 thousand KM and it is 6.2% of total value for output for activity Transportation and storage (H).

Table 3.33: Output of Transportation and storage, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	1 867 459	43 524	1 910 983
Entrepreneurs	145 403	73 272	218 675
Non-market producers	4 340		4 340
Total output	2 017 202	116 796	2 133 998
Federation of Bosnia and Herzegovina			
Enterprises	1 324 881	35 576	1 360 457
Entrepreneurs	52 079	47 167	99 246
Non-market producers	2 688		2 688
Total output	1 379 648	82 743	1 462 391
Republika Srpska			
Enterprises	478 491	4 744	483 235
Entrepreneurs	82 824	24 362	107 186
Non-market producers	1 652		1 652
Total output	562 967	29 106	592 073
Brcko District			
Enterprises	64 087	3 204	67 291
Entrepreneurs	10 500	1 743	12 243
Non-market producers			
Total output	74 587	4 947	79 534

Intermediate consumption

Intermediate consumption for activity Transportation and storage (H) amounts to 1 099 436 thousand KM and its share in output for this activity is 51.5%

Corrections of the Intermediate consumption is positive and amounts to 10 840 thousand KM and it is 1.0% of total value for Intermediate consumption for activity Transportation and storage (H).

Table 3.34: Intermediate consumption of Transportation and storage, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	1 010 677	2 162	1 012 839
Entrepreneurs	77 145	8 678	85 823
Non-market producers	774	0	774
Total Intermediate consumption	1 088 596	10 840	1 099 436
Federation of Bosnia and Herzegovina			
Enterprises	707 445	3 414	710 859
Entrepreneurs	22 245	7 890	30 135
Non-market producers	477	0	477
Total Intermediate consumption	730 167	11 304	741 471
Republika Srpska			
Enterprises	255 619	-3 633	251 986
Entrepreneurs	50 127		50 127
Non-market producers	297		297
Total Intermediate consumption	306 043	-3 633	302 410
Brcko District			
Enterprises	47 613	2 381	49 994
Entrepreneurs	4 773	788	5 561
Non-market producers			
Total Intermediate consumption	52 386	3 169	55 555

3.15 Accommodation and food service activities (I)

Introduction

GVA for activity Accommodation and food service activities (I) amounts to 568 316 thousand KM and it is 2.0% of total GVA for all activities 2.3% of GDP.

In GVA for this activity Entrepreneurs have share of 70.6% while the share of enterprises is 27.8% and of non-market producers 1.6%. The most important activity is Food and beverage service activities with 77.7% share in GVA for activity I - Accommodation and food service activities.

Table 3.35: I Accommodation and food service activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
I Total	1 061 369	493 053	568 316	100.0	2.0
Enterprises	307 877	149 771	158 106	27.8	0.6
Entrepreneurs	737 465	336 345	401 119	70.6	1.4
Software	22	0	22	0.0	0.0
Non-market producers	16 006	6 937	9 069	1.6	0.0

Table 3.36: Share of Entities in activity Accommodation and food service activities, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	1 061 369	493 053	568 316	100.0
Federation of Bosnia and Herzegovina	801 821	383 039	418 782	73.7
Republika Srpska	233 085	100 164	132 921	23.4
Brcko District	26 463	9 850	16 613	2.9

Corrections of GVA for activity I - Accommodation and food service activities for NOE amounts to 215 243 thousand KM and it is 37.9% of the GVA for this activity.

Output

Output for activity I - Accommodation and food service activities amounts to 1 061 369 thousand KM and it is 2.1% of output for all activities.

Corrections of output for NOE amounts to 361 309 thousand KM and it is 29.6% of total output for this activity.

Table 3.37: Output of Accommodation and food service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	280 861	27 016	307 877
Entrepreneurs	403 172	334 293	737 465
Software	22		22
Non-market producers	16 006		16 006
Total output	700 060	361 309	1 061 369
Federation of Bosnia and Herzegovina			
Enterprises	239 496	24 206	263 702
Entrepreneurs	252 653	282 406	535 059
Software	22		22
Non-market producers	3 038		3 038
Total output	495 209	306 612	801 821
Republika Srpska			
Enterprises	40 823	2 663	43 486
Entrepreneurs	134 597	42 035	176 632
Software			
Non-market producers	12 968		12 968
Total output	188 387	44 698	233 085
Brcko District			
Enterprises	542	147	689
Entrepreneurs	15 922	9 852	25 774
Software			
Non-market producers			
Total output	16 464	9 999	26 463

Intermediate consumption

Intermediate consumption for activity I - Accommodation and food service activities amounts to 493 053 thousand KM and its share in output for this activity is 46.5%.

Corrections of the Intermediate consumption for this activity amounts to 146 066 thousand KM and it is 29.6% of the total value of Intermediate consumption for activity I - Accommodation and food service activities.

Table 3.38: Intermediate consumption of Accommodation and food service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	149 310	461	149 771
Entrepreneurs	190 740	145 605	336 345
Software	0	0	0
Non-market producers	6 937	0	6 937
Total Intermediate consumption	346 987	146 066	493 053
Federation of Bosnia and Herzegovina			
Enterprises	127 940	311	128 251
Entrepreneurs	109 750	143 577	253 327
Software	0		0
Non-market producers	1 461	0	1 461
Total Intermediate consumption	239 151	143 888	383 039
Republika Srpska			
Enterprises	21 178	78	21 256
Entrepreneurs	72 592	840	73 432
Software			0
Non-market producers	5 476		5 476
Total Intermediate consumption	99 246	918	100 164
Brcko District			
Enterprises	192	72	264
Entrepreneurs	8 398	1 188	9 586
Software	0		0
Non-market producers	0		0
Total Intermediate consumption	8 590	1 260	9 850

3.16 Information and communication (J)

Introduction

GVA for activity Information and communication amounts to 1 313 876 thousand KM and it is 5.4% of total GVA for all activities and 4.6% of GDP. Share of the enterprises in GVA amounts to 94.2%. Share of non-market producers are 4.6% and share of Entrepreneurs in GVA is not significant.

The most important activity is Telecommunications with 70.0% share in GVA for activity J - Information and communication.

Table 3.39: J Information and communication, 2015

	Output	Intermediate consumption	Gross value added	% of GDP
	000 KM		%	

J Total	2 084 098	770 222	1 313 876	100.0	4.6
Enterprises	1 963 231	734 585	1 228 646	93.5	4.3
Entrepreneurs	23 554	7 068	16 486	1.3	0.1
R&D	842	0	842	0.1	0.0
Software	12	0	12	0.0	0.0
Non-market producers	96 459	28 569	67 890	5.2	0.2

Table 3.40: Share of Entities in activity Information and communication, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	2 084 098	770 222	1 313 876	100.0
Federation of Bosnia and Herzegovina	1 350 784	512 080	838 704	63.8
Republika Srpska	729 698	256 163	473 535	36.0
Brcko District	3 616	1 979	1 637	0.1

Corrections of GVA for activity Information and communication for NOE amounts to 65 699 thousand KM and it is 5.0% of the total GVA for this activity.

Output

Output for activity Information and communication amounts to 2 084 098 thousand KM and its share is 4.2% in the total output of all activities. The most significant part of output for this activity is created by enterprises (93.5%). Telecommunications has share 68.7% in output for this activity. Corrections of output for NOE amounts to 49 548 thousand KM and it is 2.4% output of total output for this activity.

Table 3.41: Output of Information and communication, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	1 923 593	39 638	1 963 231
Entrepreneurs	13 644	9 910	23 554
R&D	842	0	842
Software	12	0	12
Non-market producers	96 459	0	96 459
Total output	2 034 550	49 548	2 084 098
Federation of Bosnia and Herzegovina			
Enterprises	1 237 558	26 882	1 264 440
Entrepreneurs	10 581	3 969	14 550
R&D	842	0	842
Software	12	0	12
Non-market producers	70 940	0	70 940
Total output	1 319 933	30 851	1 350 784
Republika Srpska			
Enterprises	684 321	10 854	695 175
Entrepreneurs	3 063	5 941	9 004
R&D			0
Software			0
Non-market producers	25 519		25 519
Total output	712 903	16 795	729 698

Brcko District			
Enterprises	1 714	1 902	3 616
Entrepreneurs	0		0
R&D	0		0
Software	0		0
Non-market producers	0		0
Total output	1 714	1 902	3 616

Intermediate consumption

Intermediate consumption for this activity amounts to 770 222 thousand KM and its share in output is 37.0%. Corrections of the Intermediate consumption is negative and amounts to 16 151 thousand KM.

Table 3.42: Intermediate consumption of Information and communication, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	751 180	-16 595	734 585
Entrepreneurs	6 624	444	7 068
R&D	0	0	0
Software	0	0	0
Non-market producers	28 569	0	28 569
Total Intermediate consumption	786 373	-16 151	770 222
Federation of Bosnia and Herzegovina			
Enterprises	482 357	993	483 350
Entrepreneurs	5 787	0	5 787
R&D	0	0	0
Software	0	0	0
Non-market producers	22 943	0	22 943
Total Intermediate consumption	511 087	993	512 080
Republika Srpska			
Enterprises	267 994	-18 738	249 256
Entrepreneurs	837	444	1 281
R&D			0
Software			0
Non-market producers	5 626		5 626
Total Intermediate consumption	274 457	-18 294	256 163
Brcko District			
Enterprises	829	1 150	1 979
Entrepreneurs	0		0
R&D	0		0
Software	0		0
Non-market producers	0		0
Total Intermediate consumption	829	1 150	1 979

3.17 Financial and insurance activities (K)

Introduction

Financial and insurance activities consist of banks (including Central Bank of BiH), insurance and reinsurance, micro credit organisations, investment funds, financial enterprises, non-profit institutions.

GVA for this activity amounts to 1 072 656 thousand KM and it is 4.4% of total GVA for all activities and 3.8% of GDP. The banks have the most significant share in GVA for this activity with 73.4%, while insurance and reinsurance companies have share of 14.6%.

The most important activity is Financial service activities, except insurance and pension funding with 81.4% share in GVA for activity K - Financial and insurance activities.

Table 3.43: K Financial and insurance activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
K Total	1 659 200	586 544	1 072 656	100.0	3.8
Enterprises	76 680	24 320	52 360	4.9	0.2
Banks	1 180 839	393 771	787 068	73.4	2.8
Insurance	299 453	142 788	156 665	14.6	0.5
R&D	2 824	-20	2 844	0.3	0.0
Software	1 780	0	1 780	0.2	0.0
Other institutional units	94 840	23 899	70 941	6.6	0.2
Non-market producers	2 784	1 786	998	0.1	0.0

Table 3.44: Share of Entities in activity Financial and insurance activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	1 659 200	586 544	1 072 656	100.0
Federation of Bosnia and Herzegovina	1 183 242	400 217	783 025	73.0
Republika Srpska	464 768	179 556	285 212	26.6
Brcko District	11 190	6 771	4 419	0.4

Corrections of GVA for activity Financial and insurance activities for NOE amounts to 9 730 thousand KM and it is 0.9% of the total GVA of this activity.

Output

Output for this activity amounts to 1 659 200 thousand KM and its share is 3.4% in the total output of all activities.

The most significant part of output for this activity is created by Financial service activities, except insurance and pension funding (78.4%).

Activity Insurance, reinsurance and pension funding, except compulsory social security has share of 18.0% in the total output of this activity.

Activities auxiliary to financial services and insurance activities consist of financial enterprises such as investment funds, stock exchanges, exchange office etc. Share of output of this activity in total output for K amounts to 3.4%.

Corrections of output for NOE amounts to 9 629 thousand KM and it is 0.6% of the total output for this activity.

Table 3.45: Output of Financial and insurance activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	68 132	8 548	76 680
Banks	1 180 839	0	1 180 839
Insurance	299 453	0	299 453
R&D	2 824	0	2 824
Software	1 780	0	1 780
Other institutional units	93 759	1 081	94 840
Non-market producers	2 784	0	2 784
Total output	1 649 571	9 629	1 659 200
Federation of Bosnia and Herzegovina			
Enterprises	68 132	8 548	76 680
Banks	847 950		847 950
Insurance	183 652		183 652
R&D			0
Software			0
Other institutional units	74 960		74 960
Non-market producers			0
Total output	1 174 694	8 548	1 183 242
Republika Srpska			
Enterprises			0
Banks	331 783		331 783
Insurance	105 717		105 717
R&D	2 824		2 824
Software	1 780		1 780
Other institutional units	18 799	1 081	19 880
Non-market producers	2 784		2 784
Total output	463 687	1 081	464 768
Brcko District			
Enterprises	0	0	
Banks	1 106	0	1 106
Insurance	10 084	0	10 084
R&D	0	0	
Software	0	0	
Other institutional units	0	0	0
Non-market producers	0	0	
Total output	11 190	0	11 190

Intermediate consumption

Intermediate consumption for Financial and insurance activities amounts to 586 544 thousand KM and its share in output is 35.4%.

Corrections of the Intermediate consumption for NOE have negative value and amounts to 101 thousand KM.

Table 3.46: Intermediate consumption of Financial and insurance activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	24 200	120	24 320
Banks	393 771	0	393 771
Insurance	142 788	0	142 788
R&D	-20	0	-20
Software	0	0	0
Other institutional units	24 120	-221	23 899
Non-market producers	1 786	0	1 786
Total Intermediate consumption	586 645	-101	586 544
Federation of Bosnia and Herzegovina			
Enterprises	24 200	120	24 320
Banks	268 954		268 954
Insurance	89 901		89 901
R&D			0
Software			0
Other institutional units	17 042		17 042
Non-market producers			0
Total Intermediate consumption	400 097	120	400 217
Republika Srpska			
Enterprises			0
Banks	124 502		124 502
Insurance	46 431		46 431
R&D	-20		-20
Software			0
Other institutional units	7 078	-221	6 857
Non-market producers	1 786		1 786
Total Intermediate consumption	179 777	-221	179 556
Brcko District			
Enterprises	0	0	
Banks	315	0	315
Insurance	6 456	0	6 456
R&D	0	0	
Software	0	0	
Other institutional units	0	0	0
Non-market producers	0	0	
Total Intermediate consumption	6 771	0	6 771

For calculation of output and its components for Central bank BiH data have been collected directly from Central bank using a special form. Calculation has been made using cost approach. Output and its components have been allocated to the entities using the same coefficient as for Central government institutions.

Table 3.47 Allocation data to the entities and Brcko District, 2015, 000KM

	Output	Intermediate consumption	Value added	Percentage of total - %
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Federation of BiH	568 921	108 754	460 166	64.15
Republika Srpska	286 456	54 759	231 697	32.30
Brcko District	31 483	6 018	25 465	3.55
BiH	886 860	169 531	717 329	100.00

3.18 Real estate activities (L)

Introduction

GVA for activity Real estate activities amounts to 1 435 717 thousand KM and it is 5.9% of total GVA for all activities and 5.0% of GDP. The most significant part of GVA for this activity is created on the basis of estimates of imputed rent. Imputed rent refers to value of services to owner-occupied dwellings. The estimates of imputed rent according to the user-cost approach are based on the Household Budget Survey (HBS) data from 2004. The share of imputed rent in the GVA for this activity amounts to 88.1%. Enterprises have share of 10.1%, while the share of Non-market producers and Entrepreneurs is not very significant.

Table 3.48: L Real estate activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
L Total	1 755 926	320 209	1 435 717	100.0	5.0
Enterprises	237 791	93 481	144 310	10.1	0.5
Entrepreneurs	29 083	3 479	25 605	1.8	0.1
Imputed rent	1 487 679	222 897	1 264 782	88.1	4.4
Software	17	0	17	0.0	0.0
Non-market producers	1 356	353	1 003	0.1	0.0

Table 3.49: Share of Entities in activity Real estate activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	1 755 926	320 209	1 435 717	100.0
Federation of Bosnia and Herzegovina	1 232 372	236 029	996 343	69.4
Republika Srpska	490 097	79 776	410 321	28.6
Brcko District	33 457	4 404	29 053	2.0

Corrections of GVA for NOE for this activity amounts to 91 459 thousand KM and it is 6.4% of the total GVA for this activity.

Output

Output for activity Real estate activities amounts to 1 755 926 thousand KM and its share in the total output for all activities is 3.6%. Corrections of output for NOE amounts to 102 775 thousand KM and it is 5.9% of the total output for this activity.

Table 3.50: Output of Real estate activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	214 140	23 651	237 791

Entrepreneurs	1 933	27 150	29 083
Imputed rent	1 435 705	51 974	1 487 679
Software	17	0	17
Non-market producers	1 356	0	1 356
Total output	1 653 151	102 775	1 755 926
Federation of Bosnia and Herzegovina			
Enterprises	193 506	21 860	215 366
Entrepreneurs	1 566	367	1 933
Imputed rent	961 762	51 974	1 013 736
Software	17	0	17
Non-market producers	1 320	0	1 320
Total output	1 158 171	74 201	1 232 372
Republika Srpska			
Enterprises	20 607	1 771	22 378
Entrepreneurs	367	26 783	27 150
Imputed rent	440 533		440 533
Software			0
Non-market producers	36		36
Total output	461 543	28 554	490 097
Brcko District			
Enterprises	27	20	47
Entrepreneurs	0		0
Imputed rent	33 410		33 410
Software			
Non-market producers			
Total output	33 437	20	33 457

Intermediate consumption

Intermediate consumption for this activity amounts to 320 209 thousand KM and its share in output for Real estate activities is 18.2%. Total corrections of the Intermediate consumption for NOE is positive and amounts to 11 316 thousand KM and it is 3.5% of the total value for intermediate consumption for this activity.

Table 3.51: Intermediate consumption of Real estate activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	92 595	886	93 481
Entrepreneurs	801	2 678	3 479
Imputed rent	215 145	7 752	222 897
Software	0	0	0
Non-market producers	353	0	353
Total Intermediate consumption	308 893	11 316	320 209
Federation of Bosnia and Herzegovina			
Enterprises	82 798	992	83 790
Entrepreneurs	703	0	703

Imputed rent	143 444	7 752	151 196
Software	0	0	0
Non-market producers	340	0	340
Total Intermediate consumption	227 285	8 744	236 029
Republika Srpska			
Enterprises	9 762	-115	9 647
Entrepreneurs	98	2 678	2 776
Imputed rent	67 341		67 341
Software			0
Non-market producers	13		13
Total Intermediate consumption	77 213	2 563	79 776
Brcko District			
Enterprises	35	9	44
Entrepreneurs	0		0
Imputed rent	4 360		4 360
Software	0		
Non-market producers	0		0
Total Intermediate consumption	4 395	9	4 404

The very important methodological adjustment to output and intermediate consumption in NACE L related to calculation of dwelling services. The estimate of dwelling services was based on the methodology proposed by OECD. The estimate was based on the cost approach as sum of intermediate consumption, consumption of fixed capital, taxes on production and operating surplus. The estimate was made for 2004 (2004-benchmark year). The inclusion of these estimates of dwelling services in the GDP official estimates would increase the comparability of the GDP compiled in BiH and with that compiled in other countries.

3.18.1 Data sources used for the user cost estimation of dwelling services

The last population census as the most important data source on dwelling stock and estimation of dwelling services as well was carried out in BiH in 1991. Due to the war which came afterwards, the data collected on dwelling stock were neither processed nor published. The last available data on dwelling stock were data from the population census carried out in 1981.

Household budget survey 2004 (HBS) - Data collected by the household budget survey in 2004 have been remained as the main data source for estimation of the dwelling stock of BiH and expenditure related to the owner occupied dwelling. The year 2004 was also chosen as the starting point and reference year for the construction of the series based on the availability of source data.

The household budget survey was implemented in BiH for the first time in 2004. The questionnaire included a set of questions related to the dwelling stock that have been used as basic information for the user cost estimation of owner occupied dwelling services. The next survey was carried out in 2007. The following basic information has been taken over from HBS:

- Type of dwelling units;
- The year of construction;
- Size of dwelling units;
- Facilities, installations and accessory space;
- Legal status of dwelling units;
- Ownership of dwelling units;
- Actual rental paid per month;

- Expenditure on maintenance and repair of dwelling units;
- Expenditure on insurance of dwelling units;
- Annual instalment for loan on dwelling units;
- Revenue from rentals of dwelling units.

Construction statistics and experts judgment have been used for some specific parts of estimation (share of land value in value of dwelling, relation between construction prices in urban and rural area, differences in quality of construction and technical equipment of dwellings between old and new built buildings etc.).

Assumptions - The lack of the relevant data required use of some assumptions. Assumptions were made for three items:

- The average price per m² for new constructed dwellings;
- The average service life of dwelling unit;
- The annual rate of dwelling stock growth rate.

Recommendations - The guidelines to the user cost approach made recommendation for some items which could be used in the absence of data relevant information as:

- The annual rate of return;
- The net operating surplus;
- The consumption of fixed assets.

Retail price indices - Until 2005 the Retail Prices Index (RPI) has been used as the main indicator of inflation in the BiH. The RPI has been available only at the level of the entities. Retail price indices have been used as price indices for the derivation of data series of output and value added from 2000 to 2006, for the entities.

Consumer price indices - The Consumer Price Index (CPI) is a measure of the average change in prices over time of a market basket of goods and services and is used as measure of consumer price inflation in the entities and in BiH as a whole. The CPI has been compiled starting with the data for January 2005. The period adopted as the base of calculation for the indices is December 2004. CPI has been used for derivation dwelling services.

Population data - For purposes of derivation imputed rentals for entities and BiH as whole, the population estimates made by the BHAS have been used. It is important to mention that these population estimates do not coincide with the aggregate obtained by summing up the respective independent estimates made by the entities because BHAS has made population estimates for BiH independent of entities.

3.18.2 Method of calculation

According to the SNA 1993, the production boundary cover a very wide range of productive activities, among other things the production of housing services for own final consumption by owner occupiers. The housing services can be calculated using standard procedure that means that the rents that would be paid are the same as the rents actually paid for similar dwellings. In the countries where the standard procedure cannot be applied user cost method is recommended.

The user cost method is method of estimating the value imputed rental by summing the relevant cost: intermediate consumption, consumption of fixed capital, other taxes on production and net operating surplus (nominal rate of return on the capital invested in the dwelling and land).

In case of BiH, the standard procedure cannot be applied as only a few dwellings are rented and the rents actually paid cannot be considered as typical. The standard procedure cannot be used because:

- Less than 25 % of all dwellings in the country are actually rented (according to HBS/2004 less than 5% of total dwellings are by tenants);

- More than half of the rented dwellings are occupied by foreigners;
- Rented dwellings are not evenly distributed throughout the country.

The estimate of dwellings services was based on the user cost method.

3.18.3 Intermediate consumption

The estimation of the total value of the intermediate consumption was mainly based on expenditure on maintenance and repair of dwellings taken over from HBS and represented 20% of gross output. Additional analysis of HBS data referred to expenditure on maintenance and repair of owner occupied dwellings has shown that those data included also some part of cost which can prolong expected lifetime of dwellings. Due to the fact that it has not been known exactly which part refers to regular maintenance and which to extraordinary cost, the share of this category in gross output has been reduced in such a way that total intermediate consumption now represents 15% of gross output.

Because of very low quality of data in HBS, gross insurance premiums paid on dwellings and insurance claims paid to owners have been estimated as zero. The same level has been retained in the refined estimation as well.

The data have not been available for gross insurance premiums and insurance claims. Net insurance premiums paid by owners have been estimated as proposed by user cost guidelines, 1% of total intermediate consumption.

3.18.4 Other taxes on production

This category consists of two type taxes: taxes paid by owners on dwelling services and taxes paid by owners on the value of dwellings and associated land. Data for the both type of taxes have not been available and have been estimated as zero.

3.18.5 Consumption of fixed capital

Consumption of fixed capital is obtained by multiplying the mid-year value of the stock of owner-occupied dwellings valued at current prices by the depreciation rate. As depreciation rate of 1.6%, proposed by user cost methodology has been used.

3.18.6 Net operating surplus

Data on current market value of the stock of dwellings at the beginning and at the end of the year have not been available. The calculation of current market value of the stock of dwellings have been made using estimated number of owner-occupied dwellings in the middle of the current year and average price of newly-constructed dwellings in current year. The current market value of the stock of dwellings at mid-year has been estimated including value of land. Value of land has been estimated as share in price per m². For dwellings in capital city area the share was the largest 30% and for rural area only 2%. The average share has been recalculated as 11% in price per m².

The recommended rate of return on dwellings in percent per annum has been used for calculation of net operating surplus, by multiplication the rate and current market value of the stock of dwellings at mid-year. In the following tables summary results for BiH and entities are presented.

Table 3.52 Estimation of owner-occupied dwelling services applying user cost method for BH, 2004, in 000 KM

Item No.	Description of the item	Value
Intermediate consumption		
UC 01	Expenditure on maintenance and repair of owner-occupied dwellings	193 590
UC 02	Gross insurance premiums paid on owner-occupied dwellings	not available
UC 03	Insurance claims paid to owners (minus)	not available
UC 04	Net insurance premiums paid by owners (UC 02) – (UC 03)	1 955
UC 05	Total intermediate consumption (UC 01) + (UC 04)	195 545

	Other taxes on production	
UC 06	Taxes paid by owners on dwelling services	0
UC 07	Taxes paid by owners on the value of owner-occupied dwellings and their associated land	0
UC 08	Total taxes paid by owners (UC 06) + (UC 08)	0
	Consumption of fixed capital	
UC 09	Consumption of fixed capital on owner-occupied dwellings at current prices (excluding land)	481 507
	Net operating surplus	
UC 10	Current market value of the stock of owner occupied dwellings at the beginning of the year (including land)	not available
UC 11	Current market value of the stock of owner-occupied dwellings at the end of the year (including land)	not available
UC 12	Current market value of the stock of owner-occupied dwellings at mid-year (including land) (UC 10) + (UC 11) / 2	25 065 360
UC 13	Rate of return on owner-occupied dwellings (including land) in percent per annum	0.025
UC 14	Net operating surplus (UC 13) * (UC 12) / 100	626 634
	Expenditure on owner-occupied dwellings services	
UC 15	Expenditure on owner-occupied dwelling services (UC 05) + (UC 08) + (UC 09) + (UC 14)	1 303 686
	Value added (UC15 - UC 05)	1 108 141

As mentioned already, 2004 was also chosen as the reference period for the construction of the series based on the availability of data. The derivation of data for BiH for 2004 at current prices has been done by aggregating data for entities and Brcko District.

Table 3.53 Imputed dwelling services, 2004, 000 KM

	Bosnia and Herzegovina	Federation of Bosnia and Herzegovina	Republika Srpska	Brcko District
Output	1 303 686	840 930	435 274	27 483
Intermediate consumption	195 545	125 422	66 537	3 586
Value added	1 108 141	715 508	368 737	23 897

The derivation of the series from 2000 has been done using indices (consumer price indices and index of population) based on 2004=100 for the current price estimates. The constant price estimates have been calculated using chained indices (volume indicator – index of population) based on previous year data. The estimates of dwelling services for owner occupied dwellings have been included in official estimation of GDP.

Table 3.54 The share estimated imputed dwelling services in total GDP by production approach, mio KM

	2008	2009	2010	2011	2012	2013	2014	2015
GDP	25 519	24 798	25 365	26 231	26 223	26 778	27 359	28 589
Imputed dwelling services	1 129	1 164	1 165	1 164	1 179	1 224	1 223	1 220
Share %	4.42	4.70	4.59	4.44	4.50	4.57	4.47	4.27

Table 3.55 Imputed dwellings services for BiH, 2004 benchmark, 000 KM

	2004	2009	2010	2011	2012	2013	2014	2015
Output, at current prices	1303 686	1369746	1370294	1369247	1387338	1439734	1438426	1435613
Value added, at current prices	1108141	1164415	1164886	1163998	1179389	1223978	1222869	1220481
Intermediate consumption,	195545	205331	205408	205249	207949	215756	215557	215132

at current prices

Output at constant price	1293158	1328182	1370294	1369247	1369006	1384811	1438426	1435701
Value added at constant prices	1099198	1129027	1162258	1163998	1163791	1177247	1222869	1220556
Intermediate consumption at constant prices	193960	199155	208036	205249	205215	207564	215557	215145

Table 3.56 The calculation of series data for Federation BiH, 2004 benchmark, 000 KM

	2004	2009	2010	2011	2012	2013	2014	2015
Output, at current prices	840 930	888 312	890 496	890 594	908 223	962 736	962 787	961 762
Value added, at current prices	715 508	755 823	757 681	757 765	772 764	819 147	819 191	818 318
Intermediate consumption, at current prices	125 422	132 489	132 815	132 829	135 459	143 589	143 596	143 443
Volume change based on number population	100.00	100.42	100.67	100.68	100.60	100.56	100.56	100.45
Price change based on expenditure on flet	100.00	105.19	105.19	105.19	107.36	113.85	113.85	113.85
Output at constant price	834 256	858 024	890 496	890 594	889 890	907 813	962 787	961 762
Value added at constant prices	709 829	730 052	757681	757 765	757 166	772416	819 190	818 318
Intermediate consumption at constant prices	124 427	127 972	132 815	132 829	132 724	135 397	143 597	143 444

Table 3.57 The calculation of series data for Republika Srpska, 2004 benchmark, 000 KM

	2004	2009	2010	2011	2012	2013	2014	2015
Output, at current prices	435 274	447 869	446 317	445 200	445 665	443 570	442 238	440 533
Value added, at current prices	368 737	379 407	378 092	377 146	377 540	375765	374 637	373 192
Intermediate consumption, at current prices	66 537	68 462	68 225	68 054	68 125	67 805	67 601	67 341
Volume change based on number population	100.00	99.30	98.96	98.71	98.82	98.35	98.06	97.70
Price change based on expenditure on flet	100.00	103.64	103.61	103.61	103.61	103.61	103.61	103.59
Output at constant price	431 391	439 518	446 317	445 200	445 665	443 570	442 238	440 621
Value added at constant prices	365 448	372 333	375 464	377 146	377 540	375 765	374 637	373267
Intermediate consumption at constant prices	65 943	67 185	70 853	68 054	68 125	67 805	67 601	67 354

Table 3.58 The calculation of series data for Brcko, 2004 benchmark, 000 KM

	2004	2009	2010	2011	2012	2013	2014	2015
Output, at current prices	27 483	33 564	33 482	33 453	33 450	33 427	33 400	33 318

Value added, at current prices	23 897	29 184	29 113	29 088	29 085	29 065	29 042	28 970
Intermediate consumption, at current prices	3 586	4 380	4 369	4 365	4 365	4 362	4 358	4 348
Volume change based on number population	100.00	101.07	100.82	100.74	100.73	100.66	100.58	100.33
Price change based on expenditure on flet	100.00	120.83	120.83	120.83	120.83	120.53	120.83	120.83
Output at constant price	27 511	30 639	33 482	33 453	33 450	33 427	33 400	33 318
Value added at constant prices	23 921	26 641	29 113	29 088	29 085	29 065	29 042	28 970
Intermediate consumption at constant prices	3 590	3 998	4 369	4 365	4 365	4 362	4 358	4 348

3.19 Professional, scientific and technical activities (M)

Introduction

GVA for Professional, scientific and technical activities amounts to 795 666 thousand KM and it is 3.3% of total GVA for all activities and 2.8% of the GDP. In GVA for this activity the share of enterprises is the most significant and it amounts to 67.0%. Share of the Entrepreneurs is 22.0%, while the share of non-market producers is 10.4%.

Largest share in GVA for this activity has division Architectural and engineering activities; technical testing and analysis (43.5%).

Division Legal and accounting activities has share of 25.6% in GVA for this activity and it mainly consists of the Entrepreneurs (lawyers, notaries and accountants).

Table 3.59: M Professional, scientific and technical activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
M Total	1 484 406	688 740	795 666	100.0	2.8
Enterprises	1 076 890	544 016	532 874	67.0	1.9
Entrepreneurs	263 670	88 421	175 249	22.0	0.6
R&D	4 859	122	4 737	0.6	0.0
Software	46	0	46	0.0	0.0
Non-market producers	138 941	56 182	82 759	10.4	0.3

Table 3.60: Share of Entities in activity Professional, scientific and technical activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	1 484 406	688 740	795 666	100.0
Federation of Bosnia and Herzegovina	1 122 053	551 503	570 550	71.7
Republika Srpska	342 846	124 740	218 106	27.4
Brcko District	19 507	12 497	7 010	0.9

Corrections of the GVA for this activity for NOE amounts to 128 908 thousand KM and it is 16.2% of the total GVA of this activity.

Output

Output for this activity amounts to 1 484 406 thousand KM and its share is 3.0% in the total output of all activities. Corrections of the output for NOE amounts to 143 671 thousand KM and it is 9.7% of total output for this activity.

Table 3.61: Output of Professional, scientific and technical activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	1 016 149	60 741	1 076 890
Entrepreneurs	180 983	82 687	263 670
R&D	4 859	0	4 859
Software	46	0	46
Non-market producers	138 698	243	138 941
Total output	1 340 735	143 671	1 484 406
Federation of Bosnia and Herzegovina			
Enterprises	773 394	47 950	821 344
Entrepreneurs	127 782	31 875	159 657
R&D	4 441		4 441
Software	44		44
Non-market producers	136 324	243	136 567
Total output	1 041 985	80 068	1 122 053
Republika Srpska			
Enterprises	233 163	11 265	244 428
Entrepreneurs	47 063	49 277	96 340
R&D	418		418
Software	2		2
Non-market producers	1 658		1 658
Total output	282 304	60 542	342 846
Brcko District			
Enterprises	9 592	1 526	11 118
Entrepreneurs	6 138	1 535	7 673
R&D	0		
Software	0		
Non-market producers	716	0	716
Total output	16 446	3 061	19 507

Intermediate consumption

Intermediate consumption of activity M amounts to 688 740 thousand KM and its share in output for this activity is 46.4%.

Total corrections of the Intermediate consumption are positive and amounts to 14 763 thousand KM and it is 2.1% of the total intermediate consumption for this activity.

Table 3.62: Intermediate consumption of Professional, scientific and technical activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			

Enterprises	543 990	26	544 016
Entrepreneurs	73 819	14 602	88 421
R&D	122	0	122
Software	0	0	0
Non-market producers	56 047	135	56 182
Total Intermediate consumption	673 977	14 763	688 740
Federation of Bosnia and Herzegovina			
Enterprises	421 357	444	421 801
Entrepreneurs	62 133	11 981	74 114
R&D	0	0	0
Software	0	0	0
Non-market producers	55 453	135	55 588
Total Intermediate consumption	538 943	12 560	551 503
Republika Srpska			
Enterprises	115 143	-1 839	113 304
Entrepreneurs	8 828	2 002	10 830
R&D	122		122
Software			0
Non-market producers	485		485
Total Intermediate consumption	124 577	163	124 740
Brcko District			
Enterprises	7 490	1 421	8 911
Entrepreneurs	2 858	619	3 477
R&D	0		
Software	0		
Non-market producers	109	0	109
Total Intermediate consumption	10 457	2 040	12 497

3.20 Administrative and support service activities (N)

Introduction

GVA for activity Administrative and support service activities (N) amounts to 237 226 thousand KM and it is 1.0% of total GVA for all activities and 0.8% of GDP. Share of the Enterprises in GVA for this activity is 87.1%, while the share of non-market producers is 9.9%. The share of the Entrepreneurs in GVA is 2.9%.

Largest share in GVA for this activity has division Security and investigation activities with 33.4%.

Table 3.63: N Administrative and support service activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
N Total	442 578	205 352	237 226	100.0	0.8
Enterprises	404 018	197 289	206 729	87.1	0.7
Entrepreneurs	10 203	3 252	6 951	2.9	0.0
Non-market producers	28 357	4 812	23 545	9.9	0.1

Table 3.64: Share of Entities in activity Administrative and support service activities, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	442 578	205 352	237 226	100.0
Federation of Bosnia and Herzegovina	318 292	135 955	182 337	76.9
Republika Srpska	78 140	33 225	44 915	18.9
Brcko District	46 146	36 172	9 974	4.2

Corrections of GVA for this activity for NOE amounts to 14 701 thousand KM and it is 6.2% of the total GVA for this activity.

Output

Output of Administrative and support service activities amounts to 442 578 thousand KM and its share in the total output of all activities is 0.9%.

Corrections of output for this activity for NOE amounts to 14 627 thousand KM and it is 3.3% of the total output for this activity.

Table 3.65: Output of Administrative and support service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	391 661	12 357	404 018
Entrepreneurs	7 933	2 270	10 203
Non-market producers	28 357	0	28 357
Total output	427 951	14 627	442 578
Federation of Bosnia and Herzegovina			
Enterprises	273 080	9 720	282 800
Entrepreneurs	5 361	2 270	7 631
Non-market producers	27 861	0	27 861
Total output	306 302	11 990	318 292
Republika Srpska			
Enterprises	74 514	558	75 072
Entrepreneurs	2 572		2 572
Non-market producers	496		496
Total output	77 582	558	78 140
Brcko District			
Enterprises	44 067	2 079	46 146
Entrepreneurs	0		0
Non-market producers	0		0
Total output	44 067	2 079	46 146

Intermediate consumption

Intermediate consumption for this activity amounts to 205 352 thousand KM and its share in output for this activity amounts to 46.4%.

Total corrections of the Intermediate consumption are negative and amounts to 74 thousand KM.

Table 3.66: Intermediate consumption of Administrative and support service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	197 363	-74	197 289
Entrepreneurs	3 252	0	3 252
Non-market producers	4 812	0	4 812
Total Intermediate consumption	205 426	-74	205 352
Federation of Bosnia and Herzegovina			
Enterprises	128 109	508	128 617
Entrepreneurs	2 607	0	2 607
Non-market producers	4 731	0	4 731
Total Intermediate consumption	135 447	508	135 955
Republika Srpska			
Enterprises	33 843	-1 343	32 500
Entrepreneurs	645		645
Non-market producers	81		81
Total Intermediate consumption	34 568	-1 343	33 225
Brcko District			
Enterprises	35 411	761	36 172
Entrepreneurs	0		0
Non-market producers	0		0
Total Intermediate consumption	35 411	761	36 172

3.21 Public administration and defence; compulsory social security (O)

Introduction

GVA for activity Public administration and defence; compulsory social security (O) amounts to 2.467.429 thousand KM and it is 10.2% of total GVA for all activities and 8.6% of GDP.

Table 3.67: O Public administration and defence; compulsory social security, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
	000 KM			%	
O Total	3 295 259	827 829	2 467 429	100.0	8.6
Enterprises	3 504	-1 291	4 795	0.2	0.0
Non-market producers	3 291 755	829 120	2 462 635	99.8	8.6

Table 3.68: Share of Entities in activity Public administration and defence; compulsory social security, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	3 295 259	827 829	2 467 429	100.0
Federation of Bosnia and Herzegovina	1 939 253	439 130	1 500 123	60.8
Republika Srpska	1 244 665	337 468	907 196	36.8
Brcko District	111 341	51 231	60 110	2.4

Corrections of GVA for NOE for this activity amounts to 3 340 thousand KM and it is 0.1% of the total GVA for this activity.

Output

Output for activity Public administration and defence; compulsory social security (O) amounts to 3 295 259 thousand KM and its share in total output for all activities is 6.7%. Corrections of output for NOE amounts to 3 570 thousand KM and it is 0.1% of the total output for this activity.

Table 3.69: Public administration and defence; compulsory social security (O)

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	3 504	0	3 504
Non-market producers	3 288 185	3 570	3 291 755
Total output	3 291 689	3 570	3 295 259
Federation of Bosnia and Herzegovina			
Enterprises	3 090	0	3 090
Non-market producers	1 932 593	3 570	1 936 163
Total output	1 935 683	3 570	1 939 253
Republika Srpska			
Enterprises	414		414
Non-market producers	1 244 251		1 244 251
Total output	1 244 665		1 244 665
Brcko District			
Enterprises	0		0
Non-market producers	111 341		111 341
Total output	111 341		111 341

Intermediate consumption

Intermediate consumption for this activity amounts to 827 829 thousand KM and its share in output for this activity is 25.1%. Total corrections of the Intermediate consumption amounts to 230 thousand KM.

Table 3.70: Intermediate consumption of Public administration and defence; compulsory social security, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	462	-1 753	-1 291
Non-market producers	827 137	1 983	829 120
Total Intermediate consumption	827 599	230	827 829
Federation of Bosnia and Herzegovina			
Enterprises	386	0	386
Non-market producers	436 761	1 983	438 744
Total Intermediate consumption	437 147	1 983	439 130
Republika Srpska			
Enterprises	69		69

Non-market producers	337 399		337 399
Total Intermediate consumption	337 468		337 468
Brcko District			
Enterprises	7	-1 753	-1 746
Non-market producers	52 977		52 977
Total Intermediate consumption	52 984	-1 753	51 231

National accounts department of Agency for statistics of BiH calculates output and its components for State level units including the Central government institutions and Central Bank of BiH. Central government institutions comprise of the ministries and other government institution. .

Data sources for calculation of national accounts aggregates for central government are annual financial reports collected by the Ministry of finance and treasury of BiH. Data are collected from all government institutions.

Gross output is calculated by cost approach as sum of intermediate consumption, compensation of employees, consumption of fixed capital and other taxes minus other subsidies on production.

Intermediate consumption is calculated as sum of the next costs: travel costs, energy and communal services, telephone and postal services, purchases material, fuel costs, operating leasing and renting, current maintenance, insurance costs and bank services, contracted services.

Consumption of fixed capital is estimated as 5% of value added.

Table 3.71 The share Central government institutions in Total Public administration in BiH, 2015

	Output	Intermediate consumption	Value added
Total - Public administration and defence – BiH	3 295 259	827 829	2 467 429
Central government institutions	886 860	169 531	717 329
Percentage of total - %	26.91	20.48	29.07

Calculated output and its components have been allocated to Entities (Federation of BiH and Republika Srpska) and Brcko District using coefficient for distribution of indirect taxes from single account of Indirect Taxation Authorities of BiH to entities (Federation of BiH 63,93%, Republika Srpska 32,52% and Brcko District 3,55%).

3.22 Education (P)

Introduction

GVA of activity Education (P) amounts to 1 316 196 thousand KM and it is 5.4% of total GVA for all activities and 4.6% u BDP-u. Share of Non-market producers is 91.4%.

Table 3.72: P Education, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
P Total	1 510 237	194 040	1 316 196	100.0	4.6
Enterprises	130 012	37 476	92 536	7.0	0.3
Entrepreneurs	24 402	4 140	20 262	1.5	0.1
R&D	750	-38	788	0.1	0.0

Software	38	0	38	0.0	0.0
Non-market producers	1 355 035	152 462	1 202 573	91.4	4.2

Table 3.73: Share of Entities in activity Education, 2015

	Output	Intermediate consumption	Gross value added	
	000 KM			%
Bosnia and Herzegovina	1 510 237	194 040	1 316 196	100.0
Federation of Bosnia and Herzegovina	1 040 464	145 246	895 218	68.0
Republika Srpska	432 671	42 389	390 281	29.7
Brcko District	37 102	6 405	30 697	2.3

Corrections of GVA for NOE for this activity amounts to 19 100 thousand KM and it is 1.5% of the total GVA for this activity.

Output

Output of activity Education (P) amounts to 1 510 237 thousand KM and it is 3.1% of output for all activities. Corrections of output for NOE amounts to 19 465 thousand KM and it is 1.3% of the total output for this activity.

Table 3.74: Output of Education, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	123 266	6 746	130 012
Entrepreneurs	12 486	11 916	24 402
R&D	750	0	750
Software	38	0	38
Non-market producers	1 354 232	803	1 355 035
Total output	1 490 772	19 465	1 510 237
Federation of Bosnia and Herzegovina			
Enterprises	83 844	6 282	90 126
Entrepreneurs	8 246	10 008	18 254
R&D	120	0	120
Software			0
Non-market producers	931 396	568	931 964
Total output	1 023 606	16 858	1 040 464
Republika Srpska			
Enterprises	33 043	208	33 251
Entrepreneurs	3 569	1 908	5 477
R&D	630		630
Software	38		38
Non-market producers	393 275		393 275
Total output	430 555	2 116	432 671
Brcko District			
Enterprises	6 379	256	6 635
Entrepreneurs	671		671
R&D	0		
Software	0		

Non-market producers	29 561	235	29 796
Total output	36 611	491	37 102

Intermediate consumption

Intermediate consumption for this activity amounts to 194 040 thousand KM and its share in output for this activity is 12.8%. Total corrections of the Intermediate consumption are positive and amounts to 365 thousand KM and it is 0.2% of the total value of intermediate consumption for this activity.

Table 3.75: Intermediate consumption of Education, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	38 050	-574	37 476
Entrepreneurs	3 517	623	4 140
R&D	-38	0	-38
Software	0	0	0
Non-market producers	152 146	316	152 462
Total Intermediate consumption	193 675	365	194 040
Federation of Bosnia and Herzegovina			
Enterprises	26 840	-247	26 593
Entrepreneurs	2 479	623	3 102
R&D	0	0	0
Software			0
Non-market producers	115 235	316	115 551
Total Intermediate consumption	144 554	692	145 246
Republika Srpska			
Enterprises	9 054	-346	8 708
Entrepreneurs	727		727
R&D	-38		-38
Software	0		0
Non-market producers	32 992		32 992
Total Intermediate consumption	42 735	-346	42 389
Brcko District			
Enterprises	2 156	19	2 175
Entrepreneurs	311		311
R&D	0		
Software	0		
Non-market producers	3 919		3 919
Total Intermediate consumption	6 386	19	6 405

3.23 Human health and social work activities (Q)

Introduction

GVA of activity Human health and social work activities (Q) amounts to 1 359 385 thousand KM and it is 5.6% of total GVA for all activities and 4.8% of GDP.

When it comes to Human health and social work activities (Q) the biggest role is played by non-market producers (public hospitals, health centres, clinics, social work centres) and they share in total GVA for this activity is 86.0%. Private sector, which has started to develop more dynamically in the recent years, becomes more and more important.

The most significant share in GVA for this activity has division Human health activities (88.7%).

Table 3.76: Q Human health and social work activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
Q Total	1 863 648	504 263	1 359 385	100.0	4.8
Enterprises	240 972	93 880	147 092	10.8	0.5
Entrepreneurs	56 910	13 216	43 694	3.2	0.2
Non-market producers	1 565 766	397 167	1 168 599	86.0	4.1

Table 3.77: Share of Entities in activity Human health and social work activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	1 863 648	504 263	1 359 385	100.0
Federation of Bosnia and Herzegovina	1 197 706	311 607	886 099	65.2
Republika Srpska	637 416	183 916	453 500	33.4
Brcko District	28 526	8 740	19 786	1.5

Corrections of GVA for NOE for this activity amounts to 41 310 thousandKM and it is 3.0% of the total GVA for this activity.

Output

Output of activity Human health and social work activities (Q) amounts to 1 863 648 thousand KM and its share in total output of all activities is 3.8%. Corrections of output amounts to 52 830 thousand KM and it is 2.8% of the total value of output for this activity.

Table 3.78: Output of Human health and social work activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	232 649	8 323	240 972
Entrepreneurs	31 533	25 377	56 910
Non-market producers	1 546 636	19 130	1 565 766
Total output	1 810 818	52 830	1 863 648
Federation of Bosnia and Herzegovina			
Enterprises	104 192	6 678	110 870
Entrepreneurs	28 244	25 043	53 287

Non-market producers	1 015 619	17 930	1 033 549
Total output	1 148 055	49 651	1 197 706
Republika Srpska			
Enterprises	124 419	1 368	125 787
Entrepreneurs	1 720	334	2 054
Non-market producers	509 575		509 575
Total output	635 714	1 702	637 416
Brcko District			
Enterprises	4 038	277	4 315
Entrepreneurs	1 569	0	1 569
Non-market producers	21 442	1 200	22 642
Total output	27 049	1 477	28 526

Intermediate consumption

Intermediate consumption for this activity amounts to 504 263 thousand KM and its share in output of this activity is 27.1%. Total corrections of the Intermediate consumption for NOE are positive and amounts to 11 520 thousand KM and it is 2.3% of the total intermediate consumption of this activity.

Table 3.79: Intermediate consumption of Human health and social work activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	95 929	-2 049	93 880
Entrepreneurs	9 608	3 608	13 216
Non-market producers	387 206	9 961	397 167
Total Intermediate consumption	492 743	11 520	504 263
Federation of Bosnia and Herzegovina			
Enterprises	38 978	-52	38 926
Entrepreneurs	8 456	3 608	12 064
Non-market producers	250 656	9 961	260 617
Total Intermediate consumption	298 090	13 517	311 607
Republika Srpska			
Enterprises	55 065	-2 070	52 995
Entrepreneurs	426		426
Non-market producers	130 495		130 495
Total Intermediate consumption	185 986	-2 070	183 916
Brcko District			
Enterprises	1 886	73	1 959
Entrepreneurs	726		726
Non-market producers	6 055		6 055
Total Intermediate consumption	8 667	73	8 740

3.24 Arts, entertainment and recreation (R)

Introduction

GVA for activity Arts, entertainment and recreation (R) amounts to 326 098 thousand KM and it is 1.3% of total GVA for all activities and 1.1% of GDP. Share of Enterprises in GVA for this activity is 70.6%, while the share of Non-market producers is 24.7%.

The most significant share in GVA for this activity has division Gambling and betting activities (59.9%).

Table 3.80: R Arts, entertainment and recreation, 2015, 000 KM

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
R Total	1 114 497	788 399	326 098	100.0	1.1
Enterprises	956 755	726 475	230 280	70.6	0.8
Entrepreneurs	20 506	5 314	15 192	4.7	0.1
Non-market producers	137 236	56 610	80 626	24.7	0.3

Table 3.81: Share of Entities in activity Arts, entertainment and recreation, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	1 114 497	788 399	326 098	100.0
Federation of Bosnia and Herzegovina	698 737	505 765	192 972	59.2
Republika Srpska	404 385	274 748	129 637	39.8
Brcko District	11 375	7 886	3 489	1.1

Corrections of GVA for this activity R amounts to 74 399 thousand KM and it is 22.8% in the total GVA for this activity.

Output

Output for this activity amounts to 1 114 497 thousand KM and its share in total output of all activities is 2.3%.

Corrections of output for this activity for NOE amounts to 91 217 thousand KM and it is 8.2% of the total output for this activity.

Table 3.82: Output of Arts, entertainment and recreation, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	900 635	56 120	956 755
Entrepreneurs	4 231	16 275	20 506
Non-market producers	118 414	18 822	137 236
Total output	1 023 280	91 217	1 114 497
Federation of Bosnia and Herzegovina			
Enterprises	574 038	4 818	578 856
Entrepreneurs	3 621	16 269	19 890
Non-market producers	81 169	18 822	99 991
Total output	658 828	39 909	698 737
Republika Srpska			
Enterprises	317 007	50 191	367 198

Entrepreneurs	610	6	616
Non-market producers	36 571		36 571
Total output	354 188	50 197	404 385
Brcko District			
Enterprises	9 590	1 111	10 701
Entrepreneurs	0		0
Non-market producers	674		674
Total output	10 264	1 111	11 375

Intermediate consumption

Intermediate consumption of activity Arts, entertainment and recreation (R) amounts to 788 399 thousand KM and its share in output for this activity is 70.7%. Total corrections of Intermediate consumption for NOE is positive and amounts to 16 818 thousand KM and it is 2.1% of total Intermediate consumption for this activity.

Table 3.83: Intermediate consumption of Arts, entertainment and recreation, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	723 762	2 713	726 475
Entrepreneurs	1 666	3 648	5 314
Non-market producers	46 153	10 457	56 610
Total Intermediate consumption	771 581	16 818	788 399
Federation of Bosnia and Herzegovina			
Enterprises	461 236	-122	461 114
Entrepreneurs	1 562	3 648	5 210
Non-market producers	28 984	10 457	39 441
Total Intermediate consumption	491 782	13 983	505 765
Republika Srpska			
Enterprises	255 907	2 039	257 946
Entrepreneurs	104		104
Non-market producers	16 698		16 698
Total Intermediate consumption	272 709	2 039	274 748
Brcko District			
Enterprises	6 619	796	7 415
Entrepreneurs	0		0
Non-market producers	471		471
Total Intermediate consumption	7 090	796	7 886

3.25 Other service activities (S)

Introduction

GVA for Other service activities (S) amounts to 331 752 thousand KM and it is 1.4% of total GVA for all activities and 1.2% of GDP.

The most significant share in GVA for this activity has division Other personal service activities (44.7%).

Table 3.84: Other service activities, 2015

	Output	Intermediate consumption	Gross value added		% of GDP
			000 KM	%	
S Total	550 895	219 143	331 752	100.0	1.2
Enterprises	81 641	32 898	48 743	14.7	0.2
Entrepreneurs	203 141	54 645	148 496	44.8	0.5
R&D	496	-4	500	0.2	0.0
Non-market producers	265 616	131 603	134 013	40.4	0.5

Table 3.85: Share of Entities in activity Other service activities, 2015

	Output	Intermediate consumption	Gross value added	
			000 KM	%
Bosnia and Herzegovina	550 895	219 143	331 752	100.0
Federation of Bosnia and Herzegovina	396 055	147 613	248 442	74.9
Republika Srpska	148 994	67 537	81 457	24.6
Brcko District	5 846	3 993	1 853	0.6

Corrections of GVA for this activity for NOE amounts to 168 636 thousand KM and it is 50.8% of the total GVA for this activity.

Output

Output for this activity amounts to 550 895 thousand KM and its share in total output of all activities is 1.1%.

Corrections of output for NOE amounts to 254 417 thousand KM and it is 46.2% of the total output for this activity.

Table 3.86: Output of Other service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	72 460	9 181	81 641
Entrepreneurs	79 016	124 125	203 141
R&D			
Non-market producers	144 505	121 111	265 616
Total output	296 478	254 417	550 895
Federation of Bosnia and Herzegovina			
Enterprises	40 523	7 836	48 359
Entrepreneurs	60 710	112 856	173 566
R&D			0
Non-market producers	59 048	115 082	174 130
Total output	160 281	235 774	396 055
Republika Srpska			
Enterprises	28 408	1 182	29 590
Entrepreneurs	16 985	11 137	28 122
R&D	496		496
Non-market producers	84 756	6 029	90 785

Total output	130 646	18 348	148 994
Brcko District			
Enterprises	3 529	163	3 692
Entrepreneurs	1 321	132	1 453
R&D	0		
Non-market producers	701		701
Total output	5 551	295	5 846

Intermediate consumption

Intermediate consumption for Other service activities (S) amounts to 219 143 thousand KM and its share in output for this activity is 39.8%.

Total corrections of the Intermediate consumption for NOE is positive and amounts to 85 781 thousand KM and it is 39.1% of the total Intermediate consumption for this activity.

Table 3.87: Intermediate consumption of Other service activities, 2015, 000 KM

	Value before corrections for NOE	Corrections for NOE	Total
Bosnia and Herzegovina			
Enterprises	32 994	-96	32 898
Entrepreneurs	33 582	21 063	54 645
R&D		0	
Non-market producers	66 789	64 814	131 603
Total Intermediate consumption	133 362	85 781	219 143
Federation of Bosnia and Herzegovina			
Enterprises	20 852	-183	20 669
Entrepreneurs	20 494	20 607	41 101
R&D			0
Non-market producers	21 908	63 935	85 843
Total Intermediate consumption	63 254	84 359	147 613
Republika Srpska			
Enterprises	9 714	-267	9 447
Entrepreneurs	12 433	390	12 823
R&D	-4		-4
Non-market producers	44 391	879	45 270
Total Intermediate consumption	66 535	1 002	67 537
Brcko District			
Enterprises	2 428	354	2 782
Entrepreneurs	655	66	721
R&D	0		
Non-market producers	490		490
Total Intermediate consumption	3 573	420	3 993

3.26 Activities of households as employers; undifferentiated goods-and services-producing activities of households for own use (T)

3.27 Activities of extraterritorial organisations and bodies (U)

3.28 Agency for statistics of BiH (BHAS) - Remaining parts

3.28.3 Treatment of extra territorial organizations and bodies (Q)

In GDP calculation extra territorial organizations and bodies have not been shown.

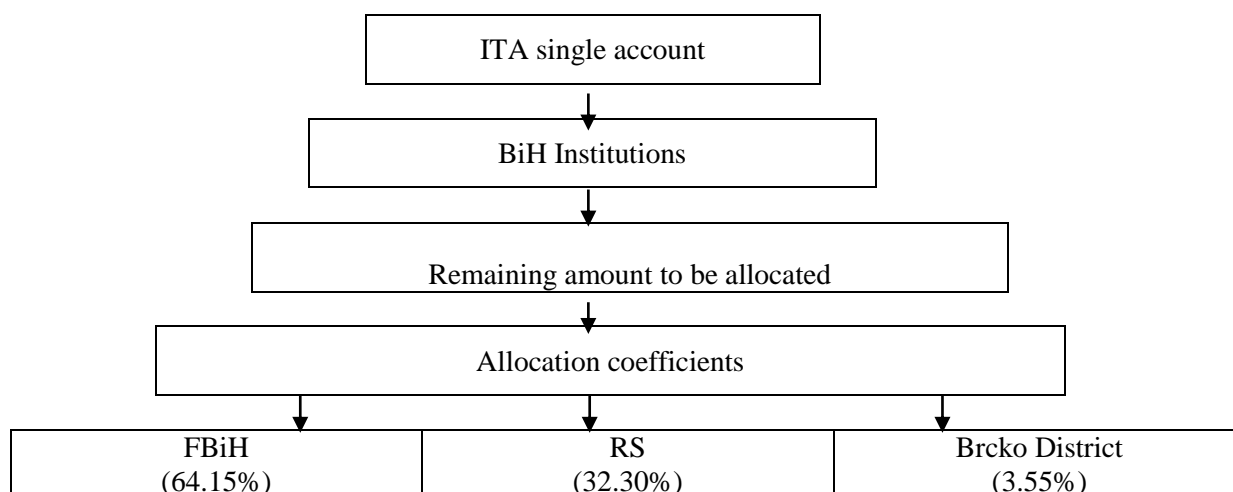
3.28.4 Value Added Tax

Complex and asymmetric administrative structure in BiH created complex allocation of public revenues. The law on system of indirect taxation in BiH created institutional and organizational basis for single system of indirect taxation in BiH, system of collection and allocation of indirect taxes between budgets of BiH, Federation of BiH, Republika Srpska and Brcko District. Indirect Taxation Authority (ITA) is a body responsible for implementation of law on indirect taxation, system of collection and allocation of revenues from indirect taxes, other revenues and fees.

Since the introduction of value added tax on January 1st, 2006, Indirect Taxation Authority became responsible for calculation, collection and allocation of indirect taxes. All revenues from indirect taxes are paid into single account and allocation is made so that the reserves for refunds and share for financing BiH institutions represent first priority in allocation of revenues. Remaining amount is allocated to budgets of B&H Federation, Republica Srpska and Brcko District after reduction of amount of liabilities requires for servicing foreign debt.

Indirect taxes cover import and export duties, excise, value added tax and taxes calculated on goods and services, including sales taxes and road tolls.

The system for allocation of indirect taxes in BiH:



All revenues that ITA is responsible for are paid to the single account, which comprises of accounts in commercial and Central bank. Account in the Central bank is used for recording, keeping and allocation of revenues to the state, entities, Brcko District and minimum reserves in the account.

Table 3.88: Revenues from indirect taxes collected by ITA on Single Account, 2015

	mln KM	in %
Indirect taxes	6 318	100.00
VAT	4 338	68.66
Custom duties	245	3.88

Excises	1 415	22.40
Road tolls	320	5.06
Other	17	0.29

CHAPTER 4

THE INCOME APPROACH

4.0 GDP by the income approach

BHAS has been publishing estimate of GDP by income approach since 2009. Available data series is from 2005 to 2017. The calculation of income categories is done at the 2-digit level according of KD BiH 2010 which is in line with the European classification NACE Rev 2.

GDP by income approach consists of the primary income categories that resident production units and individuals receive in the process of production of goods and services.

The main categories of income GDP are: compensation of employees, other taxes on production, other subsidies on production, gross mixed income and gross operating surplus.

Compensation of employees includes all remuneration to employees, both in cash or in kind, that the employees receive in return for their work done, as well as all payments to the compulsory social security schemes of employees.

Other taxes on production consist of all taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of goods and services produced or sold.

Other subsidies on production consist of subsidies except subsidies on products which resident producer units may receive as a consequence of engaging in production. Subsidies on production could not be calculated by unit of goods or services.

Gross operating surplus is a residual category of gross value added by the activities that remain after reducing gross value added by compensation of employees and net other taxes on production (subsidies on production have been subtracted from other taxes).

Total gross operating surplus/mixed income is adjusted for FISIM, because it is not allocated by activities.

Table 4.1 GDP by the income approach, 2015

	000 KM	%
Gross domestic product (GDP)	28 589 054	100.0
Compensation of employees	13 894 063	48.6
Taxes on products, services and production	5 366 874	18.8
Taxes on products and services	5 171 636	18.1
Other taxes on production	195 238	0.7
Minus: Subsidies on products, services and production	219 580	0.8
Subsidies on products and services	164 866	0.6
Other subsidies on production	54 714	0.2
Gross operating surplus/mixed income	9 547 695	33.4
Consumption of fixed capital	4 014 419	14.0
Net operating surplus/ mixed income	5 533 276	19.4

Table 4.2 GDP and income components by activities, 2015

Section of activity	Gross value added	Compensation of employees	Net other taxes on production	Gross operating surplus/mixed income	Consumption of fixed capital	Net operating surplus/mixed income
	000 KM					
A Agriculture, forestry and fishing	1 783 432	294 406	-18 828	1 507 852	191 773	1 316 078
B Mining and quarrying	565 333	481 658	10 171	73 504	138 658	-65 154
C Manufacturing	3 336 450	1 984 017	29 506	1 322 927	686 843	636 084
D Electricity, gas, steam and air conditioning supply	1 109 369	603 896	16 023	489 451	433 185	56 265
E Water supply; sewerage, waste management and remediation activities	307 261	254 508	2 680	50 072	59 535	-9 463
F Construction	1 124 836	562 124	8 653	554 059	136 374	417 686
G Wholesale and retail trade; repair of motor vehicles and motorcycles	3 826 588	1 875 465	37 581	1 913 542	444 017	1 469 525
H Transportation and storage	1 034 562	605 630	-10 532	439 465	191 509	247 957
I Accommodation and food service activities	568 316	304 714	4 521	259 081	108 709	150 372
J Information and communication	1 313 876	587 260	9 389	717 228	348 627	368 601
K Financial and insurance activities	1 072 656	578 752	16 922	476 981	98 955	378 026
L Real estate activities	1 435 717	64 231	1 284	1 370 202	602 564	767 637
M Professional, scientific and technical activities	795 666	440 752	9 031	345 883	113 699	232 184
N Administrative and support service activities	237 226	170 948	1 832	64 446	19 463	44 983
O Public administration and defence; compulsory social security	2 467 429	2 265 290	4 598	197 541	197 359	182
P Education	1 316 196	1 211 634	3 195	101 368	65 327	36 041
Q Human health and social work activities	1 359 385	1 183 752	5 742	169 891	131 547	38 344
R Arts, entertainment and recreation	326 098	194 537	6 560	125 002	24 489	100 512
S Other service activities	331 752	230 489	2 196	99 067	21 787	77 280

T	Activities of households as employers						
U	Activities of extraterritorial organisations and bodies						
	Total of activities	24 312 149	13 894 063	140 523	10 277 562	4 014 419	6 263 142
	FISIM (-)	729 866			729 866		729 866
	Gross value added, basic prices	23 582 283	13 894 063	140 523	9 547 696	4 014 419	5 533 276
	Net taxes (+)	5 006 770					
GDP at market prices		28 589 053					

4.1 The reference framework

The data sources for the calculation of income categories are the same as for GDP by production approach, as shown in Chapter 3.3.

APIF and Ministry of Finance deliver financial statements, which include separate items of gross wages and salaries, other labour costs, as well as consumption of fixed capital for market and non-market producers. Sources of data for taxes on production and subsidies on production are Ministries of Finance.

Calculation of GDP by income approach is based on the same data sources and is published at the same time as GDP by production approach.

4.2 Valuation

In accordance with the basic accounting principles, available data for estimate of GDP by the production and income approach and GVA categories are recorded on accrual basis. The exception are data on taxes recorded on cash basis.

4.3 Transition from private accounting and administrative concepts to ESA 2010 National accounts concepts

Transition from private accounting and administrative concepts to ESA 2010 National Accounts concepts is an important part of GDP compilation process.

In order to accomplish the national accounts concept, the following steps were performed:

- Items which relate to allowances for employees are excluded from intermediate consumption;
- Compensation of employees for students work, contracted work, as well as religious communities are added to the account;
- Part which refers to employed persons in individual agriculture is also added to the account (is done in RS) ;
- The item - consumption of fixed capital for religious communities, individual agriculture and imputed rent is estimated and included in the calculation.

4.4 The roles of direct and indirect estimation methods

Income categories estimation is mostly based on direct estimation methods.

4.5 The roles of benchmarks and extrapolations

Benchmark approach for the calculation of output, intermediate consumption and GVA has not been used. The only exception is the calculation of imputed rental done by BHAS for the state and entity levels.

4.6 The main approaches taken with respect to exhaustiveness

Exhaustiveness adjustments of income categories are not estimated independently. They are estimated in the same way and at the same time as exhaustiveness adjustments, by the production approach. The majority of exhaustiveness adjustments of the output are allocated to compensation of employees and to gross mixed income.

4.7 Compensation of employees

Compensation of employees amounts to 13 894 063 thousands KM (48.6% of GDP).

Compensation of employees consists of two main components:

- Gross wages and salaries;
- Other allowances for employees.

Gross salaries and wages consist of net salaries and wages and employees' social contributions (pension and disability insurance, contributions for health insurance, contributions for unemployment and child protection fund).

Net salaries and wages consist of all payments during the work including working overtime and paid absence from work (sick leave, holidays, annual holidays, professional trainings).

According to accounting standards, the most important other allowances are:

- Jubilee rewards;
- Remuneration for retirement;
- Remuneration for annual holiday;
- Remuneration for board of directors and supervisory board members;
- Over-time allowances;
- Allowances in case of death or serious health problems

4.8 Other taxes on production

Other taxes on production amounted 195 238 thousands KM (0.7% of GDP).

Other taxes on production are categories of GVA and consist of all payments by production units to general government institutions for the engagement in the production process.

Taxes calculation in national accounts is based on tax collected, that is, on the cash basis.

4.9 Other subsidies on production

Other subsidies on production amounted 54 714 thousands KM (0.2% of GDP).

Other subsidies on production are current unrequited payments by general government to resident market producers. The main data source for other subsidies on production is budgetary statistics.

4.10 Gross operating surplus

Gross operating surplus is a residual category of GVA and is equal to the GVA less compensation of employees less other taxes on production plus other subsidies on production. In non-market activities

of general government and NPISH, gross operating surplus equals the consumption of fixed capital. Operating surplus for imputed rental of owner-occupiers dwelling activities is included in gross operating surplus. The category can be shown either as net or gross, together with consumption of fixed capital.

Total gross operating surplus is adjusted for FISIM, because it is not allocated by activities.

4.11 Gross mixed income

Gross mixed income is revenue of the self-employed for their engagement in the production process and relates to unincorporated enterprises (individual agriculture production and entrepreneurs). Gross mixed income is residual category and equals to the GVA less compensation of employees less other taxes on production plus other subsidies on production. The category can be shown either as net or gross, together with consumption of fixed capital.

4.12 Consumption of fixed capital

Consumption of fixed capital amounts to 4 014 419 thousands KM (14.0% of GDP).

Data sources for calculation of consumption of fixed capital data for market and non-market enterprises are statistical reports and statistical survey and financial statements..

For direct budgetary users the consumption of fixed capital is estimated as 6% of GVA in activity O-Public administration and defence, compulsory social security, and 5% of GVA for direct budgetary users registered in other activities or it is estimated by using rate of 30% on intermediate consumption. The reason is an unsolved question of ownership of government property assets. Considering this issue, consumption of fixed capital for the general government sector is estimated based on experience of neighbouring countries.

Consumption of fixed capital for non-profit institutions serving households is taken over from financial statements.

Data on Consumption of fixed capital for banks and insurance companies are taken over from bookkeeping records through statistical report used for GDP calculation by the production approach.

Consumption of fixed capital for entrepreneurs is calculated by applying coefficients to net value added. The coefficients are different by activities and calculated on the basis of consumption of fixed capital share in net value added of small enterprises - up to 5 employees.

Consumption of fixed capital for individual agriculture production is calculated as 7 % of GVA or 11% of intermediate consumption.

CHAPTER 5

THE EXPENDITURE APPROACH

5.0 GDP according to the expenditure approach

Besides the production approach, the expenditure approach to GDP compilation is the second most important approach in Bosnia and Herzegovina. The expenditure approach measures the sum of final uses of goods and services by resident institutions less value of import of goods and services. With the expenditure approach GDP is measured as the sum of expenditures on goods and services for final consumption and gross capital formation by units of national economy plus exports less imports of

goods and services. Final consumption is the sum of expenditures on goods and services by households, NPISH and general government. Gross capital formation is measured as the sum of expenditure on gross fixed capital formation and changes in inventories.

The main components of GDP by the expenditure approach are:

- Households final consumption expenditure;
- Final consumption of non-profit institutions serving households;
- General government final consumption expenditure;
- Gross capital formation;
- Export and import of goods and services.

Each of these components can be estimated using a variety of data sources and techniques, with the aim of obtaining as comprehensive measure as possible of the level of economic activity.

The estimates of GDP by the expenditure approach in B&H have been compiled at the level of country as a whole instead of aggregating the macroeconomic data compiled by the entities as it is done with the estimates of GDP by the production. This approach was followed because balance of payments estimates are only available for the country as a whole. Moreover, estimates of expenditures on final uses rely significantly on detailed data on imports and exports, which are likely to be more reliable when referred to the country as a whole than to the entities. This is because the allocation of imports and exports to the entities in accordance with the residence of the importer/exporter does not necessarily reflect the residence of the final user of goods imported or the origin of the exports.

The year 2004 was chosen as the starting reference period for the construction of the series based on the availability of source data. The year 2004 is the first year for which data from a household budget survey with countrywide coverage became available, thus providing an important data source for estimating household's consumption. That year is also the first one for which foreign trade data were compiled with countrywide coverage, based on uniform customs declarations submitted to the Indirect Taxation Authority.

GDP by the expenditure approach has been estimated at current and constant prices as well as the series of chain linked values, with the year 2010 as the reference year as well as the corresponding deflators.

With the aim of harmonising national accounts data with the new EU statistical standards, Agency for Statistics of BiH implemented European System of Account 2010 /ESA 2010 in 2017 and published the new revised series covering period 2005 – 2017.

Detailed information on revision has been given in Chapter 2: The revision policy and the timetable for revising and finalising the estimates.

The main components of the GDP on the basis of the expenditure approach, with 2015 data are presented in the Table 5.0

Table 5.0 GDP by the expenditure approach at current prices, 2015, m KM

Expenditure categories	2015	Structure (%)
1	2	3
Household final consumption expenditure	23 156 597	78,06
Final consumption expenditure of NPISH	225 000	0,76
General government final consumption expenditure	6 283 548	21,18
Individual government consumption	3 155 648	10,64
Collective government consumption	3 127 900	10,54
Gross capital formation	5 332 896	17,98
Gross fixed capital formation	5 097 232	17,18

Changes in inventories	235 614	0,79
Valuables	50	0,00
Export of goods and services	9 884 363	33,32
Goods (fob)	6 967 563	23,49
Services	2 916 800	9,83
Import of goods and services (less)	15 216 480	51,29
Goods (fob)	14 385 320	48,49
Services	831 160	2,80
Gross domestic product – at market prices	29 665 923	100,00

Household final consumption expenditure (HFCE)

Household final consumption expenditure (HFCE) is estimated at 23 156 597 million KM or 78,06% of GDP and includes expenditure by resident households on the domestic territory as well as all direct purchases abroad by resident households. Data sources and compilation procedures for this category are presented in Section 5.7

NPISH final consumption expenditure

NPISH final consumption expenditure is estimated at 225 000 million KM or 0,76% of GDP. Data sources and compilation procedures for this category are presented in Section 5.8.

General Government final consumption expenditure (GFCE)

General Government final consumption expenditure is estimated at 6 283 548 million KM or 21,18% of GDP. Data sources and compilation procedures for this category are presented in Section 5.9.

Gross fixed capital formation (GFCF)

Gross fixed capital formation is estimated at 5 332 896 million BAM or 17,98% of GDP. Data sources and compilation procedures for this category are presented in Section 5.10.

Exports of goods and services

Exports of goods and services is estimated at 9 884 363 million KM or 33,32% of GDP. Exports of goods is estimated at 6 967 563 million KM or 23,49% of GDP. Data sources and compilation procedures for this category are presented in Section 5.15. Exports of services is estimated at 2 916 800 million KM or 9,83% of GDP.

Imports of goods and services

Imports of goods and services is estimated at 15 216 480 million KM or 51,29% of GDP. Import of goods is estimated at 14 385 320 million KM or 48,49% of GDP. Data sources and compilation procedures for this category are presented in Section 5.15.

Imports of services is estimated at 831 160 million KM or 2,8% of GDP.

5.1 The reference framework

5.1.1 Introduction

The estimate of the main components of the expenditure GDP is based on statistical surveys, administrative data sources and balance of payments statistics prepared by the Central Bank of Bosnia and Herzegovina.

It should be noted, however, that there are still important gaps on the basic statistics available for the compilation of the national accounts; quality of some statistics whether based on administrative sources or statistical surveys need improvements. Therefore, improvements of the national accounts estimates, including revisions of the data, is a continuous process subject to corresponding future improvements of the existing basic statistics, as well as the development of new data sources.

The main data sources for the estimates of the main components of the expenditure GDP at current prices are presented in the Table 5.1:

Table 5.1 The main data sources for compilation GDP by expenditure

Data sources		Availability
1	2	3
5.1.1.1	Household budget survey	2004, 2007, 2011, 2015
5.1.1.2	Foreign trade data	monthly; annually
5.1.1.3	PRODCOM survey	annually
5.1.1.4	Balance of payment	monthly; annually
5.1.1.5	Output by economic activities	annually
5.1.1.6	The investment survey	annually
5.1.1.7	Changes in inventories by economic activity	annually
5.1.1.8	Various basic statistics	annually
5.1.1.9	Various administrative sources	annually

5.1.1.1 Household Budget Survey

The household survey is a national household based survey conducted in irregular time periods in Bosnia and Herzegovina mainly focusing on final consumption expenditure of households.

The household budget survey was implemented in Bosnia and Herzegovina in 2004, 2007, 2011 and 2015.

The surveys was based on a sample of households and collected data on household expenditures for consumption, with a particular focus on the social and economic aspects of households living conditions. By virtue of its sample, the survey design allowed both qualitative and quantitative analysis of living standard and consumption behaviours of the households.

The main purpose of the survey was collecting information expenditure by main social, economic and territorial characteristics of households; all expenditures incurred by households to purchase goods and services were registered. The definition of consumption expenditure included also goods from the households garden or farm directly consumed by the household itself (self-consumption), goods and services provided by employers as salary, the imputed rent for houses occupied by the owner or used without a charge. Any other expenditure incurred by households for purpose other than consumption is excluded from the concept of consumption expenditure (for example the purchase of a house or a piece of land, the payment of taxes, expenditures connected with work activities, etc.). The amount of consumption expenditure is surveyed at the moment the good or service is purchased, regardless of the moment it was actually consumed or paid (for example by credit card or instalments).

Expenditures are broken-down in about 400 consumption items. Collected data were classified by using COICOP. Sampling errors were calculated for each item to provide an indication of the accuracy of the estimates.

According to the Household budget surveys (HBS), population in Bosnia and Herzegovina is estimated in the amount of 3,5 million of inhabitants and household consumption expenditure was calculated for that population. An estimate for the total population of Bosnia and Herzegovina was

obtained by grossing up the per capita expenditures of each item by the official estimate of the population which is higher by approximately 8, 5%. The new population census was conducted in 2013, but new data for population were available in 2016. The new population data require implementation in Household final consumption data as well as in Household final consumption expenditure. Implementing this data will require a new revision of HFCE data. The new revision is planned for 2019.

The last available data from HBS are from 2011 and they are consistent with data from HBS carried out in 2004 and 2007. Comparative overview of monthly expenditure from HBS are given in Table 5.2

Table 5.2 Average monthly expenditure by main consumption groups in BiH, 2004, 2007, 2011

Expenditure group	Average monthly expenditure by household in BiH		
	2004	2007	2011
	2	3	4
Total in KM	1 301,8	1 541,4	1 569,3
Total %	100,0	100,0	100,0
Food and non-alcoholic beverages	31,3	31,9	31,4
Alcoholic beverages	3,6	3,3	3,6
Clothing and footwear	5,1	5,3	4,7
Housing, electricity, gas, water and other fuels	23,5	22,2	24,0
Furnishing, household equipment and routine maintenance	6,9	5,4	4,9
Health	3,7	4,0	3,6
Transport	9,9	11,3	11,0
Communication	2,5	3,3	3,5
Recreation and culture	3,8	3,6	2,9
Education	1,0	0,5	0,8
Hotels and restaurants	2,6	2,8	2,9
Miscellaneous goods and services	6,1	6,4	6,7

5.1.1.2 Foreign trade data

The main data sources for external trade statistics are custom declarations collected by the Indirect Taxation Authority of B&H and taken over by Agency for Statistics of B&H. The observation unit is each import and exports shipment with the rest of the world and is uniform as regards the type of goods, country of destination or origin, for which the custom declaration was filled. The external trade statistics data are produced and published on a monthly basis.

The external trade are monitored according to the special trade system (relaxed definition), which means that beside regular import and export transactions, inward and outward processing as well as processing carried out in custom free zones are included, too.

Data on imports and exports are available based on the Customs Tariff of B&H, which uses a 10-digit code system for the identification of the goods. The first six digits correspond to the Harmonized System (HS), the international nomenclature for the classification of foreign trade data. The additional two digits are harmonized with the EU nomenclature (Combined Nomenclature-CN), and the last two digits are an extension of the classification to meet specific needs of B&H.

5.1.1.3 PRODCOM survey

The subject of the PRODCOM survey is industrial production accomplished at the territory of Bosnia and Herzegovina in the period of one calendar year. The survey collects data on volume and value of production and sales of industrial production, at the detailed level of a single product specified in the nomenclature of industrial products.

The coverage of the PRODCOM survey is not full, and it is based on the address list of statistical units used for annual statistical surveys on industry. The coverage in the Institute for Statistics of Federation of B&H is limited to those reporting units that have ten or more employees while in the Institute for Statistical Republic Srpska and the Statistical Branch of the District Brcko all reporting units from the address list are included in the survey. An adjustment for non-coverage was made using coefficients (the ratio of total output to the output covered by the survey) at the level of the NACE class.

The data from the PRODCOM survey were additionally adjusted by coverage because the survey covers only legal entities.

Adjustment of PRODCOM data for coverage has been done by the Agency for statistics – National accounts department. All products belonging to a class were adjusted with the same coefficient calculated at the class level.

5.1.1.4 Balance of payment

The Balance of payment statistics in Bosnia and Herzegovina is the responsibility of the Central Bank of Bosnia and Herzegovina. It is the main source of data for the calculation of exports and imports in the compilation of Gross domestic product according to the expenditure approach at current prices.

The Balance of payment of the Bosnia and Herzegovina represents a systematic overview of the value of economic transactions with foreign countries within a particular period. Starting from 2007 the Balance of payment data are methodologically harmonised with the sixth edition of the manual (BPM6).

5.1.1.4.1 Export and Import of Goods

Values of exports and imports of goods for the requirements Balance of Payments requirements are estimated on the basis of foreign trade statistics data, for whose compilation and dissemination is responsible BH Agency for Statistics (BHAS). The data taken over from BHAS are an adequate basis for the assessment and adjustment of data on imports and exports so that they can be harmonized with the recommended methodology for the requirements of the Balance of Payments regarding coverage and classification. The basic adjustments of foreign trade data are related to the classification adjustment, i.e. reduction of imports by the value of insurance and transport of goods (bringing imports from “CIF” to “FOB” parity). The value of goods imported for processing and exported after processing and/or goods exported for processing and imported after processing, is excluded from trade in goods and they are covered by trade in services and presented as “net goods for processing”. In addition to the above, adjustment of foreign trade data to the Balance of Payments requirements means also estimate of unregistered foreign trade, and excluding of the value of trade in goods for the requirements of international organizations seated in BH.

5.1.1.4.2. Export and Import of Services

Conceptual Framework: The time of recording of service entries is the time at which the service is delivered (for more details see the paragraph 3.47, BPM6). The classification is mainly product-based, but is transactor-based for travel, construction, and government goods and services. Thus, the classification of services is according to the type of service, rather than the unit that provides it. In accordance with applied methodology for compilation and dissemination of Balance of Payments and International Investment Position statistics (BPM6), service account includes the following:

5.1.1.4.3. Net goods for processing – Data on foreign trade obtained from BHAS are grouped in three categories of imports and three categories of exports of goods. Those categories are the following:

- Regular imports of goods
- Imports of goods for processing
- Imports of processed goods
- Regular exports of goods
- Exports of processed goods
- Exports of goods for processing

The value of goods imported for processing and exported after processing and goods exported for processing and imported after processing is excluded from trade in goods, and they are covered by trade in services. In order to estimate services for processing of the observed goods, the obtained data is adjusted in terms of value and regarding the coverage according to the recommendations of the applied methodology.

5.1.1.4.4. Transportation Services – Transport is the process of transporting of people and objects from one location to another including related supporting and auxiliary services. Transportation services also include the postal and courier services. Transportation services are classified on the basis of mode of transportation (sea, air, or other which is further broken down into rail, road, internal waterway, pipeline, and space transport as well as electricity transmission) and on the basis of the type of transported goods (passengers or freight). Since 2008, income and expenditures on the basis of transportation of passengers or freight, and the value of the accompanying services, which together make the total value of transportation services, have been estimated on the basis of the results of the direct survey conducted by the CBBH annually. This survey covers all resident companies registered for performing services in the international road, rail and air traffic. For the purposes of the quarterly reporting on balance of payments data are obtained by estimate based on the results of previous years, the quantities and values of imports and exports of goods for quarters for which the transport services are estimated, and the price movements of transport services in the consumer price index (published by the Agency for Statistics). Once the results of the survey are finalized, previously estimated values of transportation services are corrected in the regular revisions of the Balance of Payments. Estimated data are supplemented also by reports of the BH Ministry of Communications and Transport on air transport, and results of ITRS survey conducted also by the CBBH.

5.1.1.4.5. Travel – credits cover goods and services for own use or to give away acquired from an economy by non-residents during visits to that economy, debits cover goods and services for own use or to give away acquired from other economies by residents during visits to these other economies. The standard component breakdown of travel is between business and personal travel. Business travel covers goods and services acquired for personal use by persons whose primary purpose of travel is business. Personal travel covers goods and services acquired by persons going abroad for purposes other than business, such as vacations, participation in recreational and cultural activities, visits with friends and relatives, pilgrimage, education and health related purposes. According to the recommended IMF methodology, official data of statistical offices in BH and the neighbouring countries on arrivals and the number of tourist days of foreign tourists are a basis for estimating unregistered tourism, costs of stay of foreign staff in BH and daily shopping near the border. In addition to the mentioned sources, ITRS survey is also used as an additional source of data on travel.

5.1.1.4.6. Construction Services – cover the creation, renovation, repair, or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams, and so forth. Construction works are divided into works in foreign countries and construction works in BH. For construction works in foreign countries, income of BH residents are obtained from BHAS with additional estimates based on information gathered from different sources (Web sites, publications etc.) and expenditures are obtained from ITRS survey. However, for the construction works in BH, i.e. works of non-residents in BH, the data from ITRS are used both for income and expenditures.

5.1.1.4.7. Insurance and pension services – These services include services of providing life insurance and annuities, non-life insurance, reinsurance, freight insurance, pensions, standardised guarantees, and auxiliary services to insurance, pension schemes, and standardised guarantee schemes. The process undertaken by insurers and pension funds include charging premiums, paying claims, and investing funds. It is necessary to rearrange these processes to identify separately service element. The total value of insurance and pension services is derived as the margin between the amounts accruing to the companies and the amounts accruing to the policy holders. In the case of BOP compilation for BH

values of these services are obtained by direct survey of insurance and reinsurance companies and through the ITRS survey. The survey covers all resident insurance and reinsurance companies.

5.1.1.4.8. Financial services – Financial services cover financial intermediary and auxiliary services, except insurance and pension funds services. Here are usually included services provided by banks and other financial corporations. These include deposit taking and lending, letters of credit, credit card services, commissions and charges related to financial leasing, factoring, underwriting and clearing of payments. Financial advisory services, custody and financial assets or bullion, financial assets management, monitoring services, liquidity provision services, risk assumption services other than insurance, merger and acquisition services, credit rating services, stock exchange services, and trust services. For the BH BOP purposes these services are obtained through the ITRS survey.

5.1.1.4.9. Charges for the use of intellectual property n.i.e. – Charges for the use of intellectual property n.i.e include: charges for the use of property rights (such as patent, trademarks, copyrights, industrial processes and designs including trade secrets, franchises). These rights can arise from research and development, as well as from marketing; and charges for licenses to reproduce or distribute intellectual property embodied in produced originals or prototypes (such as copy rights on books and manuscripts, computer software, cinematographic works, and sound recordings) and related rights (such as for live performances and television, cable or satellite broadcast). Source of these data for the compilation of BOP is ITRS.

5.1.1.4.10. Telecommunication, computer and information services – Computer and telecommunication services are defined in terms of the nature of the service, not the method of delivery. Only amounts payable for transmission should be included under telecommunications services. This type of service is compiled by a survey conducted by the CBBH for mailing, telegram and telephone companies from BH and ITRS data.

5.1.1.4.11. Other services – include several types of services (other business services, personal, cultural, and recreational services, and government services) whose classification is regulated by the 6th edition of the IMF Balance of Payments Manual (BPM6). These services are compiled using statistical estimates on the basis of ITRS data, direct surveys of the CBBH on insurance and reinsurance, as well as transportation services survey, and as source of data for the government services are used data obtained from the Ministry of Foreign Affairs of BH.

Exports and imports of good and services with 2013 – 2015 data are presented in the Table 5.3

Table 5.3 Export and Import of goods and services , Mio KM

Exports and Imports of goods and services	2013	2014	2015
1	2	3	4
<i>Exports of goods and services</i>	9 037,1	9 299,2	9 884,4
Exports of goods (fob)	6 427,1	6 619,7	6 967,6
Exports of services	2 610,0	2 679,5	2 916,8
Goods for processing in BiH - net	764,0	794,6	833,9
Goods for processing in BiH – Export of goods	2 174,8	2 274,0	2 263,9
Goods for processing in BiH – Import of goods	1 410,8	1 479,4	1 430,0
Transportation services	491,4	493,3	526,5
Travel	1 010,2	1 042,7	1 165,1
Construction services	102,4	112,2	114,8
Telecommunications, computer and information services	186,0	188,9	222,5
Other services	55,9	47,9	53,9
<i>Imports of goods and services</i>	14 496,4	15 477,3	15 216,5
Imports of goods (fob)	13 743,3	14 720,7	14 385,3
Imports of services	753,0	756,6	831,2
Goods for processing abroad - net	-2,2	0,1	0,8
Goods for processing abroad – Import of goods	10,5	11,0	10,4
Goods for processing abroad – Export of goods	12,6	10,8	9,6
Transportation services	319,2	311,4	324,9
Travel	196,8	198,6	229,3
Construction services	21,5	34,4	45,8
Telecommunications, computer and information services	107,1	103,9	100,8
Other services	110,6	108,3	129,5

Structures of export and import of goods and services are presented in Table 5.4

Table 5.4 Exports and Imports of goods and services - structures

Exports and Imports of goods and services	2013	2014	2015
1	2	3	4
<i>Exports of goods and services</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>
Exports of goods (fob)	71,1	71,2	70,5
Exports of services	28,9	28,8	29,5
Goods for processing in BiH - net	8,5	8,5	8,4
Transportation services	5,4	5,3	5,3
Travel	11,2	11,2	11,8
Construction services	1,1	1,2	1,2
Telecommunications, computer and information services	2,1	2,0	2,3
Other services	0,6	0,5	0,5
<i>Imports of goods and services</i>	<i>100,0</i>	<i>100,0</i>	<i>100,0</i>
Imports of goods (fob)	13 743,3	14 720,7	14 385,3
Imports of services	94,8	95,1	94,5
Goods for processing abroad - net	5,2	4,9	5,5
Transportation services	2,2	2,0	2,1
Travel	1,4	1,3	1,5
Construction services	0,1	0,2	0,3
Telecommunications, computer and information services	0,7	0,7	0,7
Other services	0,8	0,7	0,9

5.1.1.5 Output by economic activity

Output by economic activities has been calculated on four-digit level of NACE classification by entities statistical institutions and has been used for estimation of different types of services.

Output by economic activities on four-digit level of NACE classification has been used for calculation of output indices. Output indices have been then used as indicators for estimation of consumption of different types of services.

5.1.1.6 Gross investment survey

One of the data sources for estimate of Gros fixed capital formation is Annual Report on Gross investment (INV 01). This survey provides a good coverage of legal units and provides information about sources of financing for investment, acquisition of new assets, and acquisition of existing assets. The survey covers detailed product groups of tangible and intangible fixed assets and non-produced

non-financial assets (land improvement work, transaction costs on land ownership). All data are in accordance with the technical breakdown related to the GFCF during the reference year.

For ensuring exhaustiveness, the main data sources for GFCF estimate are data on imported and exported investment goods, as well as domestically produced investment goods (commodity flow approach).

Data on investment in valuables have been collected by investment survey, as well.

5.1.1.7 Changes in inventories by economic activity

By definition changes in inventories are valued by the sum of values of all goods entering inventory less the sum of values of all goods withdrawn from inventory less the value of any recurrent losses of goods held in inventories. Changes in inventories are estimated at the same time as the components of the GDP on the basis of the production approach.

The primary data source for calculation of changes in inventories are the annual financial statements, which provide information on the level of inventories at the beginning of the year and at the end of the year by type of inventory. In the balance sheet of companies four types of inventories can be found: inventories of finished goods, work in progress, goods for resale and raw materials and supplies.

Only data for legal entities are available and they do not cover the inventories held by other producers (entrepreneurs and households as producers).

5.1.1.8 Various basic statistics

For the estimate of each individual component of GDP by expenditure, available data of various basic statistics (such as agriculture statistics, construction, trade, transport, other service statistics and similar) were used, having been published by the Agency for Statistics of BiH.

5.1.1.9 Various administrative sources

Since B&H statistics still do not produce all necessary indicators that can be used as data sources for assessing quality of estimates, all available administrative data sources were used for the estimate of GDP by expenditure.

5.2 Valuation

The valuation of individual components of GDP corresponds in principle with ESA 2010 requirements.

Household consumption expenditure is valued at purchasers' prices, paid by households including any taxes on products which may be payable at the time of purchase.

Final consumption expenditure of non-profit institutions serving households is valued at the same prices as other non-market output.

General government individual and collective consumption expenditure is equal by definition to the value of goods and services produced by the government institutions for own consumption, other than own account capital formation plus the value of the goods and services purchased by general government and provided for free to the population. The value of the goods and services produced by government is measured as the sum of its production costs: intermediate consumption, compensation of employees, consumption of fixed capital and other taxes on production less other subsidies on production.

Because of the lack of data on sales and purchase for free distribution, consumption was assumed equal to output.

Output is valued at the same prices as other non-market output.

Gross fixed capital formation is valued at purchasers' prices including installation charges and other costs of ownership transfer.

Changes in inventories are recorded at prices which correspond to the current prices at the time of entering the inventories or at the time of withdrawal. Data on inventories have been obtained from financial statements of legal entities; therefore they do not cover the inventories held by other producers (entrepreneurs and households as producers).

Taking into account that even with moderate inflation, holding gains can be large enough to distort the measurement of different categories like production, income, expenditure; saving etc. changes in inventories were adjusted eliminating holding gains (part of the change in value due to changes in prices during the time the inventories are held by producers in the year of reference). For calculation of holding gains Producer price indices and Consumer price indices were used.

Export and import of goods are valued at free on board prices (f.o.b.). The f.o.b. prices of export and imports is a market value of the goods at the point of uniform valuation (the custom frontier of the economy from which they are exported); it is equal to the c.i.f. price less the costs of transportation and insurance charges, between the custom frontier of the exporting (importing) country and that of the importing (exporting) country.

Export and import of services are recorded at the time at which they are rendered, which mostly coincides with the time at which the services are produced.

5.3 Transition from private accounting and administrative concept to ESA 95 national accounts concept

The estimates of GDP by the expenditure approach are compiled using available data sources that are mostly not in line with ESA 2010 concept. The future development of data sources should enable increase of their compliance with ESA 2010 and consequently compliance of expenditure categories as well.

5.4 The roles of direct and indirect estimation methods

Components of GDP by expenditure approach are estimated by combining direct and indirect estimation methods, depending on available data sources for each component of GDP.

The expenditure approach is mainly based on direct estimation methods. However, indirect estimation methods are used partly for gross capital formation, for the calculation of some components of households' final consumption expenditure.

Table 5.5 The estimation methods used in compilation of GDP by the expenditure

Expenditure categories	Estimation methods
1	2
Households final expenditure consumption expenditure	Direct and indirect methods
Final consumption expenditure of NPISH	Direct method
General government final consumption expenditure	Direct method
Gross capital formation	Direct and indirect methods
Export of goods and services	Direct method
Import of goods and service	Direct method

5.5 The roles of benchmark and extrapolation

The first estimate of GDP by the expenditure approach was compiled in 2006 for 2004. The year 2004 was selected as the starting reference period for these estimates based on the broader source data available for this year, particularly, data on household consumption expenditure obtained from HBS 2004. Moreover, in 2004 the custom administration was unified under the Indirect Taxation Authorities of B&H.

Some components of HFCE are calculated for the benchmark year and then extrapolated on the basis of basic statistics indicators and by commodity-flow method.

Housing services for dwellings occupied by their owners were estimated for 2004 as benchmark year by the user cost approach (See 3.18) and then extrapolated by volume (population growth rate) and price change.

Actual rentals data in the benchmark year were taken over from HBS and then extrapolated in the same way as imputed rentals.

For all other expenditure components, independent estimates based on available data sources are compiled for each year. Therefore, benchmark and extrapolation do not have importance for those categories. Table 5.6 shows methods used for estimation of GDP by the expenditure approach.

Table 5.6 The role of benchmark and extrapolation in compilation of GDP by the expenditure approach

Expenditure categories	2004	2010	2012	2015
1	2	3	4	5
Household final consumption expenditure:				
• Agriculture goods	Benchmark	Extrapolation	Extrapolation	Extrapolation
• Manufactured goods	Benchmark	Benchmark	Benchmark	Benchmark
• Services	Benchmark	Benchmark/ Extrapolation	Benchmark/ Extrapolation	Benchmark/ Extrapolation
• Net purchases abroad	Benchmark	Benchmark	Benchmark	Benchmark
Final consumption expenditure of NPISH	Benchmark	Benchmark	Benchmark	Benchmark
General government final consumption expenditure	Benchmark	Benchmark	Benchmark	Benchmark
Gross fixed capital formation	Benchmark	Benchmark	Benchmark	Benchmark
Changes in inventories	Benchmark	Benchmark	Benchmark	Benchmark
Export of goods and services	Benchmark	Benchmark	Benchmark	Benchmark
Import of goods and services	Benchmark	Benchmark	Benchmark	Benchmark

Data on Household final consumption expenditure collected by Household budget survey in 2007 and 2011 were used for checking estimating procedures between those years only. This checking procedures did not have any impact on changes in sources and methods in use. Data from HBS 2015 will be used as benchmark for estimating the following years and revising of existing data series.

5.6 Main approaches taken with respect to exhaustiveness

The main component of the expenditure GDP is Household final consumption expenditure. Estimates of this expenditure category were mostly based on HBS, foreign trade statistics and domestic

production statistics. Since none of these data sources in its original form meets needs of National Accounts, each data source was adjusted:

- Households budget survey data in their original form are based on the total population based on sample estimate what is 3.2 million of inhabitants, while the official number of population, according to the Agency for Statistics of B&H amounts 3,8 inhabitants. An estimate for the total population of Bosnia and Herzegovina was obtained by grossing up per capita expenditures of each item by the official estimate of the population. The table 5.7 shows HBS 2011 data adjustment for the total population.

Table 5.7 Conversion HBS 2011 data for national accounts purposes, Mio KM

COICOP code	Description	HBS 2011 original data	Population adjustment	HBS adjusted data
1	2	3	4	5
01	Food and non-alcoholic beverages	6 116	1 292	7 409
02	Alcoholic beverages, tobacco and narcotics	695	147	841
03	Clothing and footwear	910	192	1 103
04	Housing, water, electricity, gas and other fuels	3 023	639	3 662
05	Furnishings, household equipment and routine maintenance of the house	955	202	1 157
06	Health	707	149	857
07	Transport	2 140	452	2 593
08	Communication	691	146	837
09	Recreation and culture	563	119	681
10	Education	148	31	179
11	Restaurants and hotels	556	118	674
12	Miscellaneous goods and services	1 301	275	1 576
Total:		17 805	3 762	21 569

- Although data on exports and imports of goods have been adjusted by the Central bank for coverage, due to the fact that detailed data on type of adjusted goods have not been available, BHAS has not adjusted available data on Foreign trade statistics. Detailed data on imports of goods were obtained at ten-digit level from the Foreign Trade Statistics Department. The files contain the code and description of the goods, the c.i.f. value in KM and the unit (kg). For needs of HFCE estimate, the NACE and the CPA codes were manually assigned to each item. The data were also classified according to their economic use based on the characteristics of the product. This classification is the most relevant for estimating the components of final expenditure based on commodity flow approach, as it was used in the compilation of GDP estimates by the expenditure for B&H. Goods with a single use do not actually represent a problem for classification because they are either final consumption or intermediate consumption. On the contrary, goods with multiple uses have to be allocated to their final economic uses. Goods with multiple uses have been allocated to consumption and other uses based on an expert assessment depending on the description of the goods and supported on additional information on uses. The proportion of specific goods to different uses is kept constant in the compilation of successive year, so any misclassification may affect mainly the level of consumption but the growth rate for any specific good is not affected.

The same as with imports, data on exports have been obtained at detailed level of ten-digit level of the Harmonised System. Data comprises the f.o.b. value and quantity. These data were also reclassified in accordance to NACE and CPA classification. The latter classification was needed to match the data with respective data of the PRODCOM survey.

- PRODCOM survey – As explained in section 5.1.1.3, PRODCOM survey collects data on volume and value of production and sales of industrial production, at the detailed level of a single product specified in the nomenclature of industrial products. The data from survey were adjusted

twice; the first adjustment refers to non-coverage of all legal units and second to non-observed economy. The adjustment was made using coefficients (the ratio of total output to the output covered by the survey) at the level of the NACE class. The table 5.8 shows PRODCOM data adjustment.

Table 5.8 Conversion of Prodcom 2015 data for national accounts purposes, Mio KM

NA CE	Product and activity	Production value sold	Correction factor	Production adjusted
1	2	3	4	5
B	MINING AND QUARRING	725	1.011	733
05	Mining of coal and lignite	495	1.000	495
07	Mining of metal ores	155	1.002	155
08	Other mining and quarrying	75	1.106	83
C	MANUFACTURING	8 712	1.046	9 114
10	Manufacture of food products	1 787	1.077	1 925
11	Manufacture of beverages	330	1.052	347
12	Manufacture of tobacco products	69	1.036	72
13	Manufacture textiles	23	1.054	24
14	Manufacture of wearing apparel	48	1.080	52
15	Manufacture of leather and related products	38	1.067	41
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	433	1.061	459
17	Manufacture of paper and paper products	308	1.145	352
18	Printing and reproduction of recorded media	54	1.090	58
19	Manufacture of coke and refined petroleum products	1 287	1.000	1 287
20	Manufacture of chemicals and chemical products	321	1.108	356
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	151	1.008	152
22	Manufacture of rubber and plastic products	277	1.118	309
23	Manufacture of other non-metallic mineral products	350	1.058	370
24	Manufacture of basic metals	1 639	1.003	1 644
25	Manufacture of fabricated metal products, except machinery and equipment	576	1.082	622
26	Manufacture of computer, electronic and optical products	16	1.039	16
27	Manufacture of electrical equipment	191	1.022	195
28	Manufacture of machinery and equipment n.e.c.	167	1.047	175
29	Manufacture of motor vehicles, trailers and semi-trailers.	289	1.005	291
30	Manufacture of other transport equipment	4	1.029	4
31	Manufacture of furniture	332	1.017	338
32	Other manufacturing	18	1.029	18
Total C + D		9 437	1.043	9 847

- NPISH sector needs significant improvements in coverage adjustment and method used. Currently there is not any adjustment.
- General government data – Exhaustiveness is not a problem for general government data, but there is need for improvements of estimating method.

- Gross fixed capital formation survey data – Data on investments into fixed capital formation, collected through specially designed survey (See 5.1.1.6.) provide detailed information of investment of corporative for transfer of ownership for non-produced, non-financial assets.

The data obtained through this survey are used only for checking the estimates of investment into construction, machinery and equipment and other investments.

For the estimates of size of investment into machinery and equipment, commodity-flow method is used, corrected for costs associated with the installation of equipment.

5.7 Household final consumption expenditure

Household final consumption expenditure on the domestic territory (domestic concept) is the largest component of GDP by the expenditure and represents 78.6% of GDP in 2015. Household final consumption by the domestic concept consists of all expenditure of households on consumer durables, consumer semi-durables, single-use goods and services of all kinds, on the domestic market. In line with the ESA 2010, data on HFCE are presented according to the national concept which is equal to the HFCE by the domestic concept less direct purchases of non-resident households on the domestic market plus direct purchases of resident households abroad.

The Classification of Individual Consumption by Purpose (COICOP) was used for a breakdown of HFCE by purpose.

HFCE is aligned, as far as possible with COICOP. However, there are some instances where it is not yet possible to follow COICOP's recommendations, e.g. estimates of HFCE on narcotics and prostitution services are still not available.

In the estimates of household consumption expenditures, the following categories were distinguished:

- 5.7.1 Consumption of agriculture goods,
- 5.7.2 Consumption of manufactured food goods,
- 5.7.3 Consumption of other manufactured goods,
- 5.7.4 Consumption of services
- 5.7.5 Consumption of residents abroad less consumption of non-residents.

Estimates of the mentioned categories in 2015 are given in the following table:

Table 5.9 Household final consumption expenditure estimate by categories, Mio KM:

Code	COICOP	Agriculture goods	Manufactured food goods	Manufactured other goods	Services	Total
1	2	3	4	5	6	8
01.00	Food and non-alcoholic beverages	4 133	3 314	0	0	7 447
02.00	Alcoholic beverages, tobacco and narcotics	0	0	2 154	0	2 154
03.00	Clothing and footwear	0	0	1 046	51	1 097
04.00	Housing, water, electricity, gas	0	0	6	3 283	3 289
05.00	Furnishing, household equipment etc.	0	0	1 257	187	1 444
06.00	Health	0	0	526	418	944
07.00	Transport	0	0	1 112	992	2 105
08.00	Communications	0	0	5	694	699
09.00	Recreation and culture	0	0	588	553	1 141
10.00	Education	0	0	0	331	331
11.00	Restaurants and hotels	0	0	0	1 694	1 694
12.00	Miscellaneous goods...	0	0	684	1 090	1 774

Household final consumption expenditure – domestic concept	4 133	3 314	7 380	9 295	24 121	
%	17.13	13,74	30,60	38.53	100	

Data sources used for 2015 were:

- Detailed data on imports and exports of goods,
- PRODCOM survey data,
- Retail trade data
- Detailed data on agriculture output and prices of agriculture products,
- Population estimate,
- Data on output by economic activity at the class level,
- Data from Balance of payments on travel
- Administrative data for some specific goods

5.7.1 Consumption of agriculture goods – Estimation procedures

For the starting 2004 year, different approaches were tried in the compilation of the estimates of consumption of agriculture and animal products. One of the approaches was to produce detailed supply and use balances for each product in quantity terms and to multiply the resulting estimate of consumption by the consumer prices. Different price was used to value consumption of own-produced goods. Total supply of each product was obtained from the data on imports and domestic production. The latter were obtained from the detailed data on agriculture production compiled by the entities and aggregated by the BHAS: matching the data on imports with the data on domestic production raised some problems because in some cases, the level of detail of the data was not sufficient and, therefore, some assumptions had to be made to produce required details. From the uses side, estimates were made of the uses of the products as intermediate consumption in agriculture, food processing industries and restaurants and catering. These estimates were based on the nature of product and on the data on output and intermediate consumption of food processing industries, restaurants and catering industry. Data on export were taken from the respective file with the detailed data on foreign trade statistics. Estimates for consumption were obtained as a residual, after all other uses were subtracted from total supply.

The resulting estimate of consumption for each product was then multiplied by the consumer price in order to obtain the respective estimate on expenditure by households.

The above estimates were checked for consistency by looking at the plausibility of per capita consumption in quantity, comparing with consumption in neighbouring countries, and comparing money expenditures with the HBS data.

For the year 2015, where no data from household budget survey were available, the estimate of consumption for meat, milk, eggs and honey were based on the extrapolation of the quantity implicit in the estimate for 2014 by growth rate of supply plus increase in price.

The estimates of the vegetables and fruits consumption were based on sales index on green market.

Table 5.10 From Household budget survey 2004 to final estimate 2015, 000 KM

Agriculture products	HBS 2004	HFCE 2004	Data source	Method in use for later years	Volume indicators	Value indicators	Final estimate 2015
Beef and Veal	544 452	544 452	HBS	Extrapolation	Domestic production	CPI	707 902

Pork	152 728	152 728	HBS	Extrapolation	Domestic production	CPI	187 884
Lamb, muton, goat	75 867	75 867	HBS	Extrapolation	Domestic production	CPI	103 646
Poultry	254 946	254 946	HBS	Extrapolation	Domestic production	CPI	447 390
Other meats and edible offal	11 313	11 313	HBS	Extrapolation	Domestic production	CPI	15 933
Fresh milk	314 531	314 531	HBS	Extrapolation	Domestic production	CPI	545 433
Preserved milk	256 624	256 627	HBS	Extrapolation	Domestic production	CPI	416 825
Cheese	112 885	112 885	HBS	Extrapolation	Domestic production	CPI	200 062
Eggs	178 142	178 142	HBS	Extrapolation	Domestic production	CPI	372 110
Fresh fruit	447 627	447 627	HBS	Extrapolation	Sale index		636 888
Fresh vegetables	345 374	345 374	HBS	Extrapolation	Sale index		341 947
Fresh potatoes	113 113	113 113	HBS	Extrapolation	Sale index		124 884
Honey	20 157	20 157	HBS	Extrapolation	Domestic production	CPI	32 566
Total:	2 827 763						4 133 470

The following are the tables with detailed estimates on consumption of agriculture products in 2015:

Table 5.11 The estimate of the meat consumption in 2015

Meat	2014			2015/2014		2015		
	Quantity /tons	Price per tons/ KM	Value/ 000 KM	Quantity index	CPI	Quantity /tons	Price per tons/ KM	Value/ 000 KM
1	2	3	4	5	6	7	8	9
Beef	60 002	11 910	714 642	101.50	97.59	60 903	11 623	707 902
Pork	28 383	7 221	204 966	102.59	89.35	29 118	6 453	187 884
Lamb	10 387	9 948	103 338	100.51	99.79	10 441	9 907	103 646
Polutry	93 719	5 017	470 155	103.22	92.19	96 735	4 625	447 390
Other	2 069	7 735	16 003	101.96	97.66	2 109	7 554	15 933
Total:	194 560	-	1 509 104	-	-	199 306	-	1 462 755

Table 5.12 The estimate of the milk consumption in 2015

Milk	2014	2015/2014	2015
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	Quantity / 000	Price per unit/ KM	Value/ 000 KM	Quantity index	CPI	Quantity/ 000	Price per unit/ KM	Value/ 000 KM
1	2	3	4	5	6	7	8	9
Fresh milk l	320 095	1.51	532 465	100.2	102.23	352 799	1.55	545 433
Preserved and other milk prod. l	117 783	3.49	410 820	100.2	100.60	118 018	3.53	416 825
Cheese kg	32 018	6.14	196 630	100.2	101.26	32 082	6.23	200 062
Total:	-	-	1 139 915	-	-	-	-	1 162 320

Table 5.13 The estimate of the vegetables consumption in 2015

Vegetables	2014		Trade index 2015/2014	2015	
	Consumption in 000 KM			Consumption in 000 KM	
1	2		3	4	
Potatoes	144 525		86.41	124 884	
Fresh vegetables	351 834		97.18	341 947	
Total:	496 359			466 831	

Table 5.14 The estimate of the fruit consumption in 2015

Fruits	2014		Trade index 2015/2014	2015	
	Consumption in 000 KM			Consumption in 000 KM	
Fresh fruits	621 536		102.47	636 888	

Table 5.15 The estimate of the eggs consumption in 2015

Eggs	2014			2015/2014		2015		
	Quantity/ 000	Price per unit/ KM	Value/ 000 KM	Quantity index	CPI	Quantity / 000	Price per unit/ KM	Value/ 000 KM
1	2	3	4	5	6	7	8	9
Eggs /pcs	1 334 633	0.265	356 477	102.80	101.54	1 372 002	0.27	372 110

Table 5.16 The estimate of the honey consumption in 2015

Honey	2014			2015/2014		2015		
	Quantity / 000	Price per unit/ KM	Value/ 000 KM	Quantity index	CPI	Quantity / 000	Price per unit/ KM	Value/ 000 KM
1	2	3	4	5	6	7	8	9
Honey/kg	2 285	13.18	30 120	104.83	103.14	2 395	13.60	32 566

Table 5.17 Total estimate of consumption of agriculture products in 2015, 000 KM

Agriculture products	Estimate 2015
Meat	1 462 755
Milk	1 162 320
Vegetables	466 831
Fruits	636 888
Eggs	372 110

Honey	32 566
Total	4 133 470

5.7.2 and 5.7.3 Consumption of manufactured food goods and other manufactured goods estimation procedures

In general, a method for estimating consumption of manufactured food goods and other manufactured goods is based on a commodity flow approach, where consumption for each item is obtained as the sum of consumption of imported goods and locally produced goods, or:

$$\text{Households consumption} = \text{Imports} + \text{Domestic production} - \text{Export} - \text{Non-consumption uses}$$

Consumption of imported goods for a specific item is the c.i.f. value of imports of that good allocated to consumption plus custom duties, distribution margins and taxes on products. Consumption of domestically produced goods is obtained as the sum of sales of goods less exports, plus distribution margins and taxes on products. Estimate of sales are taken from the PRODCOM survey (after adjustment for coverage) and they are reduced by the corresponding value of export f.o.b. at the level of each commodity, thus obtaining as residual the value of sales within the domestic market. The latter data are classified according to economic use.

Table 5.18 Commodity flow method for estimate of HFCE on manufactured goods in 2015, 000 KM

Code	COICOP	Import	Domestic production	Margins	Taxes	Purchases value
1	2	3	4	5	6	7
01.00	Food and non-alcoholic beverages	1 329 243	817 416	570 270	470 961	3 187 892
02.00	Alcoholic beverages, tobacco, narcotics	888 687	488 427	444 532	332 227	2 153 874
03.00	Clothing and footwear	455 114	18 775	415 374	156 779	1 046 043
04.00	Housing, water, electricity, gas and other fuel	26	3 776	1 361	878	6 042
05.00	Furnishing, househ. equip. and routine househ. mainten.	530 826	174 616	380 547	171 078	1 257 069
06.00	Health	260 132	71 017	118 652	76 776	526 579
07.00	Transport	619 656	138 892	184 462	169 666	1 112 678
08.00	Communication	3 348	0	1 279	788	5 415
09.00	Recreation and culture	353 151	12 754	134 705	87 628	588 240
10.00	Education	0	0	0	0	0
11.00	Restaurants and hotels	0	0	0	0	0
12.00	Miscell. goods and services	313 923	63 216	207 121	100 203	684 465
Total domestic concept:		4 754 109	1 788 895	2 458 309	1 566 988	10 568 302

Estimates of imported goods were based on the value c.i.f. of goods allocated to consumption plus custom duties, distribution margins and taxes on products. The last three components were calculated on the basis of available information and assumptions. The custom duties were calculated at the level of each product, by applying normative tax rates according to the custom tariff code. When appropriate, also the excise tax was added. Distribution margins were determined on the basis of information on trade margin rates obtained from national accounts data at the most detailed level of the industrial classification.

Estimates of domestically produced goods were obtained as net sales of consumption goods to the domestic market plus the distribution margins and taxes. As in the case of imported goods, distribution margins and taxes were calculated using the same procedures.

Estimates for the year 2015 as well as for all other years are based on the same kind of data sources and procedures.

It should be noticed that the procedures followed for compiling these estimates assumed no changes in the distribution margin rates. In fact, data on trade margin rates derived from the detailed information on the production accounts for the year 2005 show some significant and, sometimes, unrealistic results. It was decided to continue using those data until a detailed survey on trade and transport margin is conducted. Additional implication of the assumption used is in the calculation of constant price estimates. Deflating the estimates by a consumer price index would introduce a bias in the results if the trade margin rates have effectively changed from one year to another, although it is expected that, due to low inflation rates observed at present, these margins do not change significantly. Change in margins is treated as a price effect and is not a bias; the volume change is always with fixed margins from the base period

5.7.4 Consumption of services – Estimation procedures

The estimates of consumption of services in 2015 covered all the corresponding items included in the HBS. The first estimate for consumption of services was prepared for 2004 using data from HBS and estimates of output within the compilation framework of GDP by production. The gross output of services was prepared at the 4-digit level of NACE. The data from HBS were classified by NACE categories to make possible the comparison with the data on output. Final estimates were decided on a case-by-case way, comparing the data from these two sources and additional information, where possible. The consumption for consecutive years were estimated using output growth rate or other available indicators as real income, population growth rate, price indices etc. Data from HBS 2007 and 2011 were used as an additional information on consumption on services. If necessary, estimates were revised in line with HBS data. Table 5.19 shows method used for estimates of household final consumption expenditure on services.

Table 5.19 Household final consumption expenditure on services – part I, indicators used

COICOP	Services	Indicators used
1	2	3
03.00	CLOTHING AND FOOTWEAR	
03.14	Cleaning, repair and hire of clothing	Output index of related activity
03.22	Repair of footwear	Output index of related activity
04.00	HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS	
04.11	Actual rentals for housing	Nominal growth rate of imputed rentals
04.12	Imputed rentals for housing	User cost approach, population and CPI
04.32	Service for the maint. and repair of the dwelling	
04.42	Miscellaneous services relating to the dwelling	
05.00	FURNISHING, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE	
05.13	Repair of furniture	Real income and price index
05.33	Repair of household appliances	Real income and price index
05.62	Domestic services and household services	Population and price index
06.00	HEALTH	
06.21	Medical services	Output index of related activity
06.22	Dental services	Output index of related activity
06.23	Paramedical services	Output index of related activity
06.30	Hospital services	Output index of related activity

07.00	TRANSPORT	
07.23	Maintenance and repair of pers.transp. equipment	Number of registered cars and price index
07.24	Other services in respect of pers.transp.equipment	Number of registered cars and price index
07.31	Passenger transport by railway	Output index of related activity
07.32	Passenger transport by road	Output index of related activity
07.33	Passenger transport by air	Output index of related activity
07.35	Combined transport	Output index of related activity
08.00	COMUNICATIONS	
08.10	Postal services	Output index of related activity
08.30	Telephon and fax services	Output index of related activity
09.00	RECREATION AND CULTURE	
09.15	Repair of audio visual, photographic equip.	Output index of related activity
09.35	Veterinary and other services for pets	Output index of related activity
09.41	Recreational and suporting services	Output index of related activity
09.42	Cultural services	Output index of related activity
09.43	Games of chance	Output index of related activity
09.60	Package holidays	Output index of related activity
10.00	EDUCATION	
10.10	Pre-primary education	Output index of related activity
10.20	Secondary education	Output index of related activity
10.40	Tertiary education	Output index of related activity
10.50	Education not defined by level	Output index of related activity
11.00	RESTAURANTS AND HOTELS	
11.11	Restaurants, cafes and the like	Output index of related activity and BoP data
11.12	Canteens	Output index of related activity and BoP data
11.20	Accomodation services	Output index of related activity and BoP data
12.00	MISCELLANEOUS GOODS..	
12.11	Hairdressing salons and personal services	HBS data and linear interpolation
12.40	Social protection	Output index of related activity
12.50	Insurance	Output index of related activity
12.60	Other financial services	Data from banks
12.70	Other services	Output index of related activity

ble 5.20 Household final consumption expenditure on services – part I, 2015 estimates, 000 KM

COICOP	Services	2013	Index	2014	Index	2015
1	2	3	4	5	6	
03.00	CLOTHING AND FOOTWEAR	48 489	101.6	49 284	103.5	51 000
03.14	Cleaning, repair and hire of clothing	35 727	101.6	36 313	103.5	37 577
03.22	Repair of ffootwear	12 762	101.6	12 971	103.5	13 422
04.00	HOUSING, WATER, ELECTRICITY, GAS AND OTHER FUELS	1 632 788	99.1	1 618 896	100.0	1 618 361
04.11	Actual rentals for fousing	115 987	99.3	115 146	99.8	114 922
04.12	Imputed rentals for housing	1 448 917	99.3	1 438 408	99.8	1 435 613
04.32	Service for the maint. and repair of the dwelling	2 070	101.0	2 090	101.0	2 112
04.42	Miscellaneous services relating to the dwelling	65 812	96.1	63 251	103.9	65 714

05.00	FURNISHING, HOUSEHOLD EQUIPMENT AND ROUTINE MAINTENANCE	171 895	100.5	174 463	107.3	187 224
05.13	Repair of furniture					
05.33	Repair of household appliances	32 902	102.3	33 659	114.8	38 625
05.62	Domestic services and household services	101 424	101.6	103 086	107.6	110 958
		37 567	100.4	37 717	99.8	37 639
06.00	HEALTH	399 874	101.1	404 392	103.3	417 841
06.21	Medical services	101 393	101.1	102 538	103.3	105 948
06.22	Dental services	42 703	101.1	43 185	103.3	44 622
06.23	Paramedical services	109 534	101.1	110 772	103.3	114 456
06.30	Hospital services	146 243	101.1	147 895	103.3	152 813
07.00	TRANSPORT	952 895	101.7	969 389	102.4	992 959
07.23	Mainten. and repair of pers.transp. equip.	259 839	109.3	283 920	105.8	300 529
07.24	Other services in respect of pers.transp.equip.	60 855	103.6	63 038	100.9	63 916
07.31	Passenger transport by railway	4 515	95.9	4 332	98.2	4 254
07.32	Passenger transport by road	506 310	100.1	506 687	100.8	510 690
07.33	Passenger transport by air	119 932	91.7	109 967	102.2	112 406
07.35	Combined transport	1 441	100.1	1 442	101.1	1 458
08.00	COMUNICATIONS	698 289	101.4	707 881	98.1	694 146
08.10	Postal services	14 647	110.0	16 116	104.5	16 838
08.30	Telephon and fax services	683 641	101.2	691 764	97.9	677 308
09.00	RECREATION AND CULTURE	491 068	109.8	538 973	102.7	553 377
09.15	Repair of audio visual, photographic equip.	58 770	102.3	60 122	105.8	63 595
09.35	Veterinary and other services for pets	24 602	104.0	25 595	101.1	25 866
09.41	Recreational and suporting services	51 645	101.3	52 321	108.4	56 740
09.42	Cultural services	160 178	102.4	163 995	102.6	168 323
09.43	Games of chance	152 196	126.3	192 266	101.0	194 206
09.60	Package holidays	43 676	102.3	44 671	99.9	44 644
10.00	EDUCATION	318 403	102.5	326 469	101.5	331 223
10.10	Pre-primary education	40 256	102.5	41 276	101.5	41 877
10.20	Secondary education	45 273	102.5	46 420	101.5	47 096
10.40	Tertiary education	173 732	102.5	178 133	101.5	180 727
10.50	Education not defined by level	59 141	102.5	60 639	101.5	61 522
11.00	RESTAURANTS AND HOTELS	1 583 071	100.0	1 582 812	107.0	1 694 203
11.11	Restaurants, cafes and the like	911 983	100.0	911 834	107.0	976 004
11.12	Canteens	51 997	100.0	51 988	107.0	55 647
11.20	Accomodation services	619 090	100.0	618 989	107.0	662 551
12.00	MISCELLANEOUS GOODS..	1 071 115	98.8	1 038 599	100.0	1 090 422
12.11	Hairdressing salons and personal services	272 840	100.0	272 840	95.2	272 840
12.40	Social protection	6 936	108.2	7 502	109.1	7 142
12.50	Insurance	109 088	102.3	111 619	105.5	121 779
12.60	Other financial services	499 967	93.0	464 764	104.1	490 279
12.70	Other services	182 282	104.6	190 607	100.5	198 382
Total services part I:		7 367 892	100.7	7 419 899	102.8	7 630 765

Estimates of Household consumption expenditure on other services (water supply and sewerage, refuse collection, electricity, gas by network and heat energy) were based partly on data collected from enterprises providing services, partly on HBS data extrapolated by output index. The table 5.21 shows the second part of Household consumption expenditure on services in 2015.

Table 5.21 Household final consumption expenditure on services – part II, indicators used

COICOP	Services	Indicators used
1	2	3
04.41	Water supply and sewerage	Data collected from enterprises that supply households
04.51	Electricity	Data collected from enterprises that supply households
04.52	Gas by network	Data collected from enterprises that supply households
04.53	Liquid fuels	Composite index calculated using price index and real income
04.54	Solid fuels	Sales of firewood
04.55	Heat energy	Composite index calculated using price index and population

Table 5.22 Household final consumption expenditure on services – part II, 2015 estimates, 000 KM

COICOP	Services	2013	Index	2014	Index	2015
1	2	3	4	5	6	7
04.41	Water supply and sewerage	139 307	103.3	143 915	102.7	147 858
04.51	Electricity	705 065	100.3	707 412	104.1	736 093
04.52	Gas by network	36 966	80.4	29 720	118.4	35 183
04.53	Liquid fuels	8 262	99.3	8 206	84.4	6 922
04.54	Solid fuels	629 951	96.6	608 236	103.7	630 653
04.55	Heat energy	106 261	101.2	107 498	100.6	108 151
Total:		1 625 794	98.7	1 604 988	103.7	1 664 862

The Table 5.23 shows the final estimate of Household final consumption expenditure – **domestic concept** in three years.

Table 5.23 Household final consumption expenditure - domestic concept; final estimate, 000 KM

Code	COICOP	2013	2014	2015
1	2	3	4	5
01.00	Food and non-alcoholic beverages	7 493 524	7 418 215	7 446 691
02.00	Alcoholic beverages, tobacco and narcotics	1 878 753	2 011 383	2 153 874
03.00	Clothing and footwear	990 055	1 057 689	1 097 044
04.00	Housing, water, electricity, gas and other fuel	3 263 768	3 229 857	3 289 267
05.00	Furnishing, household equipment and routine household maintenance	1 327 098	1 410 418	1 444 293
06.00	Health	880 426	912 518	944 421
07.00	Transport	2 109 050	2 173 044	2 105 638
08.00	Communication	704 054	712 388	699 563
09.00	Recreation and culture	1 043 460	1 140 916	1 141 618
10.00	Education	318 404	326 469	331 224
11.00	Restaurants and hotels	1 583 071	1 582 812	1 694 203
12.00	Miscellaneous goods and services	1 775 458	1 731 469	1 774 892
Household final consumption expenditure – domestic concept:		23 367 121	23 707 180	24 122 729

5.7.5 Consumption of residents abroad less consumption of non-residents – Estimation procedures

In line with the ESA 2010, data on Household final consumption expenditure are presented according to the national concept that is equal to the HFCE by the domestic concept less direct purchases of non-resident households on the domestic market plus direct purchases of resident households abroad.

Conversion from domestic to national concept has been done using data from Balance of payment estimated by the Central bank of Bosnia and Herzegovina. Table 5.24 shows HFCE for 2015 by domestic concept and transition to national concept.

Table 5.24 Household final consumption expenditure, 2015, transition from domestic to national concept

Code	COICOP	000 KM	Structure (%)
1	2	3	4
01.00	Food and non-alcoholic beverages	7 446 691	31.1
02.00	Alcoholic beverages, tobacco and narcotics	2 153 874	9.9
03.00	Clothing and footwear	1 097 044	4.7
04.00	Housing, water, electricity, gas and other fuel	3 289 267	14.3
05.00	Furnishing, household equipment and routine household maintenance	1 444 293	6.3
06.00	Health	944 421	4.1
07.00	Transport	2 105 638	8.8
08.00	Communication	699 563	2.7
09.00	Recreation and culture	1 141 618	4.9
10.00	Education	331 224	1.4
11.00	Restaurants and hotels	1 694 203	7.9
12.00	Miscellaneous goods and services	1 774 892	8.6
Household final consumption expenditure – domestic concept		24 122 729	
Plus: direct purchases abroad by resident households		190 768	0.9
Less: direct purchases on the domestic market by non-resident households		1 156 900	- 5.9
Household final consumption expenditure – national concept		23 156 597	100.0

5.8 NPISH final consumption expenditure

The estimate of consumption of NPISH was based on the respective estimate of output of these institutions compiled by the entities' statistical institutions within the framework of their work in compiling GDP estimates based on the production approach. Output of these institutions is measured by sum of the cost components of production, that is, compensation of employees, consumption of goods and services for production, other taxes on production, and consumption of fixed assets. Table 5.25 shows estimate of the final consumption of NPISH.

Table 5.25 Final consumption expenditure of NPISH as part of GDP by the expenditure, 000 KM

	2013	2014	2015
1	2	3	4
GDP	28 240 536	28 334 530	29 695 439
Final consumption expenditure of NPISH	217 742	227 306	225 000
Share of GDP	0.77	0.80	0.76

5.9 General government final consumption expenditure

The general government comprises the respective institutions at the state level, the entities and the local level, as well as health and pension fund, and the extra-budgetary funds.

General government final consumption expenditure is equal, by definition to the value of the goods and services produced by the government institutions for own consumption plus the value of the goods and services purchased by government and provided free to the population. The value of the goods and services produced by government is measured as the sum of its production costs.

The entities' institutes of statistics and the Brcko District branch of the BHAS provided estimates of the value of government output. These estimates are compiled within the framework of GDP compilation by production. The respective data for the state level was compiled by the BHAS, based on the execution of the state budget. Due to the fact that data on sales were not available consumption was assumed equal to output.

Table 5.26 General government final consumption expenditure as part of GDP, 000 KM

	2013	2014	2015
1	2	3	4
Gross Domestic Product	28 240 536	28 334 530	29 695 439
General government final consumption expenditure	6 112 459	6 254 487	6 289 043
- Individual government consumption	3 046 327	3 130 287	3 139 476
- Collective government consumption	3 066 132	3 124 200	3 149 567
Share of GDP	21.64	22.07	21.18

5.9.1 ESA 2010 and R&D

In ESA 95, there was recognition of some so-called intangible assets, some of them as (produced) fixed and others as non-produced assets. The (produced) intangible fixed assets come under the new heading of intellectual property products in ESA 2010. ESA 95 recognised as intangible fixed assets the following: mineral exploration ; computer software; entertainment, literary and artistic originals and other intangible fixed assets. ESA 2010 continued the expansion of the asset boundary by including results of research and development as intellectual property under the heading of produced assets.

ESA 2010 recognises expenditures for both purchased and own-account R&D as fixed investment and the depreciation of these assets as consumption of fixed capital. This includes government R&D expenditure either protected via patents or made freely available to the public. In ESA 2010, the impact of capitalisation of R&D on the accounts is different for a market producer from a non-market producer. Extending the asset boundary through the recognition of more produced fixed assets will affect important figures throughout the national accounts. In ESA 2010, the impact of capitalisation of R&D on the accounts is different for a market producer from a non-market producer. General government units are non-market producers and for them is relevant the following:

R&D produced for own account by a non-market producer:

In the expenditure approach, in the year of creation, final consumption expenditure drops by the amount allocated to GFCF representing the creation of the R&D product, and so total expenditure is unaltered in this year. So, R&D expenditure will be reclassified from consumption expenditure to GFCF. In succeeding years, final consumption expenditure increases by the amount of CFC due to the R&D product. The additional CFC will be recorded in consumption expenditures.

R&D purchased by a non-market producer:

Under ESA 2010, the purchase is registered as an investment, so intermediate consumption (P.2) and non-market output (calculated as sum of costs) both decrease by the amount purchased.

The increase of GFCF is counterbalanced in the expenditure approach by a decrease of final consumption expenditure.

More information on data sourced and methods for estimate of R&D is available in Chapter 2 Production approach.

Table 5.27 R&D for non-market producers, 000 KM

	2013	2014	2015
1	2	3	4
Value of R&D excluded from General government final consumption and included in GFCF	32 540	38 627	31 492

5.10 Gross capital formation

The estimates of gross capital formation cover:

- Gross fixed capital formation on machinery and transport equipment;
- Gross fixed capital formation on dwellings, other buildings and other construction works;
- Expenditure on cultivated assets (trees and livestock in agriculture);
- Expenditures on mineral exploration, computers and software; R&D
- Major improvements to land and the cost of transfer of non-produced assets;
- Changes in inventories
- Valuables

Table 5.28 Gross capital formation, 000 KM

Gross capital formation	2015
1	2
Gross fixed capital formation:	5 097 232
• Gross fixed capital formation on machinery and transport equipment;	2 248 672
• Gross fixed capital formation on dwellings, other buildings and other construction works;	2 554 470
• Expenditure on cultivated assets (trees and livestock in agriculture);	25 317
• Expenditures on mineral exploration, computers and software; R&D	259 864
• Major improvements to land and the cost of transfer of non-produced assets;	8 909
Changes in inventories:	253 614
Valuables:	50
Gross capital formation	5 332 896

Data sources for the compilation of Gross capital formation in 2015 were:

- Detailed data on imports and exports at 10-digit level of the classification of foreign trade data;
- The PRODCOM annual survey;
- The countrywide annual survey on gross fixed capital formation;
- R&D estimate for market and non-market producers;
- Construction output;
- Construction survey on construction activities abroad;
- Changes in inventories by economic activities provided by the entities and the Brcko District.

5.10.1 Data sources

5.10.1.1. Import of capital goods

The detailed data on imports at the 10-digit level were examined for the identification of capital goods, following a process similar to the one used in the compilation of household consumption expenditure. Thus, products were classified according to their description into those that are used exclusively for capital formation (acquired by producers as means of production), and those that may have alternative uses depending on the institutional unit acquiring them. The first category includes items such as agriculture and industrial machinery, while other categories include durable goods that can be used as capital formation and/or consumption of households and intermediate consumption. These latter products refer to products as computers, which can be used by producers as equipment or by households as consumption; they also include some machines and equipment that can perform independent functions as well as they can be incorporated in other manufactures products. These data were also classified in accordance with the NACE and CPA classifications.

5.10.1.2 Exports of capital goods

The same as with imports, data on exports have been obtained at detailed level of ten-digit level of Harmonized system. Data comprises the f.o.b. value and quantity. These data were also reclassified in accordance with NACE and CPA classifications. The latter classification was needed to match the data with the respective data of the PRODCOM survey.

5.10.1.3 PRODCOM survey

The data from the PRODCOM survey were adjusted for coverage (See 5.6). As expected, it should be noted that production of capital goods is still not a significant source of capital formation.

5.10.1.4 Annual survey on gross fixed capital formation

The survey has countrywide coverage of expenditure on fixed assets by all legal entities. It provides estimates of capital formation by type of assets and by economic activity. The scope of investment in fixed assets is in accordance with the definitions provided by SNA/ESA methodology (See 5.1.1.6).

5.10.1.5 R&D estimate for market and non-market producers

R&D estimate has been taken from production account.

5.10.1.6 Construction output

Construction output has been taken from production account.

5.10.1.7 Construction survey on construction activities abroad

The aim of survey on construction works abroad is to collect data on the value of construction activities performed abroad. Reporting units are all enterprises registered in section F – Construction according to KD BiH 2010 performing construction works abroad as well as enterprises that are not registered in Construction, but they have a local unit that performing construction works abroad.

Value of performed construction works represents the total value of works performed in specific countries by reporting unit (as main contractor, subcontractor or cooperator) in reporting quarter with own or hired workers, irrespective of whether they are full-time workers or not. The value of performed construction is based on value invoiced by unit performing work to investor. The value of construction works comprises the value of works, building material used, fuel

and energy and all other expenses incurred by the company in respect to performance of works, as well as profit.

Data are presented by different type of construction work, on buildings and civil engineering.

5.10.2 Estimation procedures

5.10.2.1 Machinery and equipment

Estimates of capital formation in imported goods were taken as the sum of the c.i.f. values of then goods selected as capital goods, plus custom duties, distribution margins, net taxes on products and installation costs.

Custom duties were calculated applying the normative tax rates applicable to each product. Distribution margins were calculated based on information on the distribution margin rates for these finds of products obtained from the production accounts of the trade industry prepared by the entities. The trade margin rates were downward adjusted to take into account that only a fraction of imports of capital goods is channelled through the trade industry, as most investors will import directly goods. It means that we have applied only whole trade margin rate while retail trade margin rate have been excluded. According to the regulation, the investors were not obliged to pay taxes on products and net taxes were neither calculated nor added to the value of machinery and equipment. Installation margin rates were assumed equal to 10% of the purchaser's value of the capital goods.

The commodity flow approach was selected for these estimates, since the coverage of the survey on capital formation excludes entrepreneurs, which have a significant share of economic activity in some industries, like agriculture, construction and trade. A comparison of the results with the figures provided by the capital formation survey shows that the estimates are 10 % higher than in the capital formation survey. The Table 5.29 shows Commodity flow approach used for estimate of capital formation in machinery and equipment.

Table 5.29 Commodity flow method for estimate of investment in Machinery and equipment in 2015, 000 KM

NA CE	Industry	Import	Domestic production	Margins	Taxes	Market value
1	2	3	4	5	6	7
01	Crop and animal production	42 590	-	6 875	-	50 952
02	Forestry and logging	88	-	14	-	102
16	Manufacture of wood and wood products	1 976	8	311	-	2 308
22	Manufacture of rubber and plastic products	3 840	-	599	-	4 440
25	Manufacture of fabricated metal products, except machinery and equipment	67 047	18 021	13 317	-	98 687
26	Manufacture of computer, electronic and optical products	229 985	4 900	37 975	-	281 408
27	Manufacture of electrical equipment	103 806	-517	16 361	-	121 242
28	Manufacture of machinery and equipment n.e.c.	671 711	-14 142	103 858	-	770 634
29	Manufacture of motor vehicles, trailers and semi-trailers	583 893	-4 113	90 740	-	672 410
30	Manufacture of other transport	19 589	-16	3 059	-	22 673

	equipment					
31	Manufacture of furniture; manufacturing n.e.c.	16 351	-41 675	-3 939	-	-29 196
32	Other manufacturing	41 182	-1 227	6 282	-	46 558
58	Publishing activities	1 753	-	273	-	2 026
	Cost of installation:					204 425
	Total:	1 783 816	-38 761	275 730		2 248 672

5.10.2.2 Buildings and other construction structures

In 2011, after a detailed analysis of data sources, methods and published data on investments in construction structures, it was decided that the new method has to be introduced.

The new main data sources have been construction output from production account and construction survey data on construction activities abroad.

Investment in construction structure has been estimated as total construction output reduced by subcontracting and value of construction works done abroad by companies from Bosnia and Herzegovina. Data source for subcontracting work were experimental Supply and Use tables compiled in 2009. Data for subcontracting were calculated as ratio between intermediate consumption for construction services in Construction industry (Use table) and total output for Construction industry (Supply table). This percentage was 20% for year 2009 and have been used for estimate of subcontracting for later years.

Data source for Construction abroad has been described in part 5.10.1.7 Construction survey on construction activities abroad

Table 5.30 GFCF in construction structures estimate, 000 KM

	2013	2014	2015
1	2	3	4
Construction – GDP output	3 200 852	3 442 051	3 200 239
Subcontracting (minus)	535 526	577 019	533 009
Construction abroad (minus)	100 960	110 709	113 373
GFCF in construction structures	2 564 266	2 754 323	2 553 857

Table 5.31 GFCF in construction structures as part of GDP by the expenditure, 000 KM

	2013	2014	2015
1	2	3	4
GDP	28 240 536	28 334 530	29 695 439
GFCF - Construction	2 564 266	2 754 323	2 553 857
Share of GDP	17.1	18.8	17.1

5.11 Acquisition less disposals of tangible fixed assets

Due to the lack of reliable data on disposal of tangible fixed assets the value of the total investment in tangible fixed assets is equal to the total investment in the new tangible fixed assets. Detailed Classification of tangible fixed assets has not been implemented yet.

5.12 Acquisition less disposals of intangible fixed assets

Due to the lack of reliable data on disposal of intangible fixed assets the value of the total investment in intangible fixed assets is equal to the total investment in the new intangible fixed assets.

Investment in intangible fixed assets covers mineral exploration, computer software, entertainment, literary or artistic originals and other intangible fixed assets. Data have been collected by investment survey.

5.13 R&D in Gross fixed capital formation

As already explained in section 5.9.1, ESA 2010 continued the expansion of the asset boundary by including results of research and development as intellectual property under the heading of produced assets. In ESA 2010, the impact of capitalisation of R&D on the accounts is different for a market producer from a non-market producer. Impact on different accounts is as following:

1. R&D produced on own account by a market producer:

In the expenditure approach, gross fixed capital formation increases by the amount of R&D costs and mark-up.

As a consequence, GDP and GNI increase.

2. A market producer purchases R&D:

The purchases are reclassified from intermediate consumption (ESA 95) to gross fixed capital formation (ESA 2010).

As a consequence, GDP and GNI increase in ESA 2010.

3. R&D produced for own account by a non-market producer:

In the expenditure approach, in the year of creation, final consumption expenditure drops by the amount allocated to GFCF representing the creation of the R&D product, and so total expenditure is unaltered in this year. So, R&D expenditure will be reclassified from consumption expenditure to GFCF. In succeeding years, final consumption expenditure increases by the amount of CFC due to the R&D product. The additional CFC will be recorded in consumption expenditures

3. R&D purchased by a non-market producer:

Under ESA 2010, the purchase is registered as an investment, so intermediate consumption (P.2) and non-market output (calculated as sum of costs) both decrease by the amount purchased.

The increase of GFCF is counterbalanced in the expenditure approach by a decrease of final consumption expenditure.

The main data source for R&D estimate in line with ESA 2010 concept has been statistical survey based on Frascati Manual, conducted by Entity statistical offices. In order to get estimate of R&D for national accounts needs the "Bridge tables" constructed by Eurostat were used as well as The Manual on measuring Research and Development in ESA 2010.

Data available for allocation of R&D were:

Table 5.32 GFCF in R&D in 2015, based on Frascati Manual, 000 KM

2015			
	Total	Market producers	Non- market producers
1	2	3	4
Gross domestic expenditure on R&D	53 393	20 387	34 006
Output of R&D	52 953	21 349	31 604
Gross fixed capital formation of R&D	50 735	19 243	31 492
Change in value added	19 243	19 243	0
Change in government final consumption	-31 492		-13 492
Change in GFCF	50 735	19 243	31 492

Table 5.33 Value of R&D included in Gros fixed capital formation, 000 KM

	2013	2014	2015
1	2	3	4
Value of R&D for market unit	17 454	13 279	19 243
Value of R&D for non-market units	32 540	38 627	31 492
Total R&D	49 994	51 906	50 735

5.13 Changes in inventories

The estimate of Changes in inventories was taken as the difference between the opening and closing book values reported by enterprises and government institutions. Data on the book-values of the inventories at the beginning and the end of the year was provided by the entities and the Brcko District at the four-digit level of the NACE classification. These data are based on the financial statement of all legal entities. Therefore, they do not cover the inventories held by other producers (entrepreneurs and households as producers).

The estimates were taken as the book values differences between the beginning and the end of the year. Taking into account that even with moderate inflation, holding gains can be large enough to distort the measurement of different categories like production, income, expenditure; saving etc. estimates of changes in inventories were adjusted eliminating holding gains (part of the change in value due to changes in prices during the time the inventories are held by producers in the year of reference). For calculation of holding gains Producer price indices and Consumer price indices were used.

Table 5.34 Changes in inventories, 2015, 000 KM,

Type of inventory	Book value		Difference
	01 January 2015	31 December 2015	
1	2	3	4
Materials and supplies	2 089 890	2 122 444	32 553
Work in progress	465 357	426 310	-39 047
Finished goods	567 034	594 417	27 383
Goods for resale	5 085 485	5 300 210	214 725
Total	8 207 767	8 443 381	235 614

5.14 Estimates of valuables

The estimates of investment in valuables were taken from the data collected by investment survey, covering corporations only.

5.15 Imports and exports of goods and services

The estimates of total imports and exports of goods and services were taken from the corresponding estimates of balance of payment statistics compiled by the Central Bank of Bosnia and Herzegovina. Imports and exports of services, in accordance with the definitions of the national accounts, do not include payments between residents and non-residents related to primary income (income from property and labour).

Methodological improvements in the balance of payment statistics were recently implemented with adoption of updated standards given by the IMF Balance of Payment Manual, Sixth edition (BPM6) as well as the implementation and recommendations made by an IMF's technical assistance mission.

Implementation of the new Balance of Payment Manual, Sixth edition – BPM 6 in the balance of payment statistics caused changes to both the compilation and presentation of the data. The new published data on Balance of payment differ significantly from previously published and have considerable impact on compilation of Gross domestic product by expenditure approach.

Among the changes in the balance of payment data it should be noted the implementation of the net concept in recording data on goods for processing and revisions to flows stemming from improved sources and methods. The net effect of these changes is reflected in higher deficits on goods and services, thus reducing the level of GDP ranging between 1% and 3%.

Due to lack of source data at present, revised estimates of balance of payment flows are available only from the first quarter of 2007.

CHAPTER 6

THE BALANCING OR INTEGRATION PROCEDURE AND VALIDATING THE ESTIMATES

There are not balancing procedures for validating GDP estimates.

CHAPTER 7

OVERVIEW OF THE ALLOWANCES FOR EXHAUSTIVENESS

7.0 Introduction

The lack of coverage of the GDP estimates in BiH has long been under discussion. Many alternative estimates circulate from various sources, while the first official estimate was done for 2004 within EUROSTAT-OECD Project for improving measurement of the non-observed economy (NOE) in the West Balkan Countries” The estimates were made following “Tabular Approach” recommended by EUROSTAT. The Project was implemented into two phases.

During the first phase, the preliminary estimates were produced for 2003, on the basis of available data and, largely based on experts' estimates. In the second phase of the Project, the NOE estimates made in the first phase of Project were refined and the estimates for the period 2000-2007 were made. The estimates for all years were made using the same method applied in 2003.

For the period 2000-2007, the estimates were made by non-exhaustiveness type N1-N7, with exception of N2 (illegal producer that fails to register) as well as estimate of imputed rental value – indirectly measured dwelling services for owner-occupied dwellings; and these data were published. Estimations for N2 type, for drug and prostitution as well as smuggling of goods were made experimentally and the data were not included in GDP estimations. However, a rough estimate for these illegal activities was made, mainly based on the assumptions and experiences of experts. That is why the estimates for this type of non-exhaustiveness have to be improved.

Estimates for NOE were made following the breakdown into three sub-sectors of the economy:

- Enterprises (legal entities);
- Entrepreneurs (unincorporated enterprises of households) and
- Production of individual agriculture sector.

Government estimates were not made, considering that data have full coverage. The existing data sources, which could be used for improvement of exhaustiveness of GDP estimates, were not exploited in full, so estimates were mostly produced on the basis of assumptions.

Within the Twinning project in 2008, Agency for statistics and entity statistical offices had a technical assistance of an expert from EU-Italy, in relation to the calculation of GDP by production approach. The aim of that mission was recommendations related to the improvement of exhaustiveness in GDP calculation by production approach using the data from LFS. Since the definitions of employment in LFS and NA are different, and procedures for comparison between the data from these two sources have not been established, LFS data for allowances for exhaustiveness are still not in use. Data on HBS have not been in use so far, but it is planned to use these data in the future.

NOE estimates were made for output and Intermediate Consumption, and GVA is calculated as difference at the section and sub-section level of Classification of activities, and in some cases at the lower level of activity.

However, it has long been argued by the experts from OECD that worked in the project as well as the IMF resident advisor that the estimates were quite conservative and need some refinements and update.

During the two phases of this Project, entities statistical institution conducted *ad hoc* surveys in Hotels and restaurants activity-entrepreneurs, individual Agriculture sector, Construction and Health activities (entrepreneurs).

Furthermore, it should be mentioned that preliminary estimates of non-exhaustiveness were made with lack of the main assumptions (the main censuses and surveys) which could have been used for comparison and more real derivation of data for non-exhaustiveness.

7.1 Adjustments by type of the non-exhaustiveness N1-N7

The adjustments for all non-exhaustiveness types have been made by identifying activities which are within a production boundary according to the ESA 2010, and which should be included in GDP calculation, but have not been covered. The description of some of the non-exhaustiveness types in National Accounts coverage (N1-N7), on the basis of which NOE estimation was made are shown in the following table, in line with the Eurostat's Tabular Approach.

Description of the Non-Exhaustiveness Types (N1 to N7)

N1	Producer should have registered (underground producer)	<ul style="list-style-type: none"> • Producer fails to register in order to avoid tax and social security obligations. These are often small producers with turnovers which exceed the thresholds above which they should register their income. • Producers that fail to register because they are involved in illegal activities that fall under N2, rather than N1. • Type N1 does not include all underground activities, some of which are associated with type N6.
N2	Illegal producer that fails to register	<ul style="list-style-type: none"> • N2 covers activities of producers that avoid registration entirely. • N2 excludes illegal activities by registered legal entities or entrepreneurs that report (or misreport) their activities under legal activity codes.
N3	Producer is not obliged to register	<ul style="list-style-type: none"> • Producer is not required to register because it has no market output. Typically, these are non-market household producers involved in: (a) production of goods for own consumption or for own fixed capital formation and (b) construction of and repairs to dwellings. • Producer has some market output but it is below the level at which the producer is expected to register as an entrepreneur.
N4	Registered legal person is not included in statistics	<ul style="list-style-type: none"> • The legal person may not be included in the statistics for a variety of reasons. E.g., the business register is out of date or updating procedures are inadequate; the classification data (activity, size or geographic codes) are incorrect; the legal person is excluded from the survey frame because its size is below a certain threshold; etc.
N5	Registered entrepreneur is not included in statistics	<ul style="list-style-type: none"> • A registered entrepreneur may not be included in the statistics for many reasons. E.g., the administrative source with lists of registered entrepreneurs may not always pass on complete or up to date lists to the statistical office. • Even if there is a regular flow of accurate and comprehensive information from the administrative source to the statistical office, the registered entrepreneur may not be included in the business register for several reasons (see those given under N4).
N6	Misreporting by the producer	<ul style="list-style-type: none"> • Misreporting invariably means that gross output is under-reported and intermediate consumption is over-reported in order to evade (or reduce) income tax, value added tax or social security contributions. • Misreporting often involves: the maintenance of two sets of books; payments of <i>envelope salaries</i> which are recorded as intermediate

		consumption; payments in cash without receipts; and VAT fraud.
N7	Statistical deficiencies in the data	<ul style="list-style-type: none"> • N7a - data that is incomplete, not collected or not directly collectable, • N7b - data that is incorrectly handled processed or compiled by statisticians. This distinction is useful because it helps one to better understand the huge variety of possible statistical deficiencies. However, in practice, N7a and N7b cannot always be easily separated. • Statistical deficiencies: the following list is not comprehensive but these topics should be investigated for non-exhaustiveness:- <ul style="list-style-type: none"> • Handling of non-response; • Production for own final use by market producers; • Tips; • Wages and salaries in kind; • Secondary activities. • Clearly, not all statistical deficiencies result in the under-estimation of GDP. (The focus here has been to identify and target those areas which are likely to lead to non-exhaustiveness in the NA.)

Adjustments of gross value added for NOE are made on the basis of available data sources, expert assessments, as well as on the basis of the results of the ad-hoc survey for entrepreneurs in the field of Hotels and restaurants, Construction and Health activities. Estimates were made for a series of data from 2000 to 2015 years, and are included in the official GDP.

Total adjustment for 2015 amounted to 1 873 086 mil KM or 6.6 % of GDP.

The following table present data on the NOE according to types of non-exhaustiveness. The most important adjustments relate to type N6-Misreporting by the producer, and amounted 69.2% of total adjustment, then N3- not obligated to register, and amounted 14.8% of total adjustment. Other types have smaller share in estimates and amounted 16.0 %.

Table 7.1: Exhaustiveness adjustments by type, 2015

Non exhaustiveness types	Value added	Structure %	% of GDP
N1	35 882	1.9	0.1
N2	0	0.0	0.0
N3	277 247	14.8	1.0
N4	182 956	9.8	0.6
N5	11 511	0.6	0.0
N6	1 295 628	69.2	4.5
N7	69 862	3.7	0.2
Total (N1-N7)	1 873 086	100.0	6.6

7.1.1 N1 Producer should have registered (underground producer)

The one part of entrepreneurs who deal with activities which belong to the households sector, deliberately fail to register their activities to avoid paying tax and other obligations. It is assumed that the number of these entrepreneurs is very small and adjustment for the non-exhaustiveness type N1 is also small. It is assumed that entrepreneurs, who were required to be registered, have done so. One of the reasons to for it is an easy way of registration for entrepreneurs. It is considered that there are no particular reasons for whatever activity not to be registered.

It is considered that N1 is not significant and total adjustments for 2015 amounted to 1.9% of total adjustments and 0.1% of GDP. The adjustments are made for the following activities: Agriculture, Manufacture industry, Construction, Trade, Transport, Financial intermediation, Education, Health. This type of adjustment was made only for entrepreneurs.

Adjustment for activity C-Manufacturing industry for individual entrepreneurs who are deliberately not registered (Manufacture of wood and products of wood) is made on the basis of experts estimates so that all categories of calculation (output, IC, GVA, consumption of fixed capital and mixed income) increased by 5% compared to the data as reported.

Adjustment for activity G-Trades is made on the basis of expert estimates for individual entrepreneurs who are deliberately not registered (repair and cleaning of cars, repair of household appliances, and sales through a broker). The categories output, IC and GVA increased by 3% compared to the data as reported, while the consumption of fixed capital increased by about 2%.

Adjustments for activity H- Transportation and storage (taxi drivers) and Q-Health and social work (doctors, dentists) for individual entrepreneurs were carried out on the basis of imputation of number owners and their earnings (mixed income) on the basis of available statistical data sources (in the database of the Statistical business register and the average monthly salaries of labor statistics).

Adjustments for activities F-Construction, K-Financial intermediation and P-Education are made on the basis experts estimates by using % to the output for entrepreneurs, depending on the type of activity that they refer to.

7.2.2 N2 Illegal producer that fails to registered

Illegal production reflects activities that generate goods and services forbidden by law or that are unlawful carried out by unauthorized producers. According to SNA93 and ESA 95, illegal production should be included in national accounts. The scale and distribution of such activities varies across countries. Obtaining the data needed for the estimation of illegal production is usually difficult, and as a consequence for BiH, the methods used to measure illegal activities are still experimental.

The most important types of illegal production in Bosnia and Herzegovina are distribution of drugs, prostitution, smuggling of goods, and sales of stolen vehicles. During the second phase of the EFTA-OECD Project on measuring the non-observed economy in Western Balkan Countries, Agency for statistics of BiH and entities statistical institutions tried to estimate illegal production related to the distribution of drugs, prostitution, and smuggling of goods. The estimates has been based on incomplete data sources and should be subject of additional analyse. The estimations are not included in official data.

The estimation of illegal activities are not done for 2015.

7.2.3 N3 Producers is not obliged to register

Non-exhaustiveness type N3 is significant type in BiH and amounted to 14.8% of total adjustment in 2015, or 1.0 % of GDP. Adjustments for N3 were made only for household sector and mostly for entrepreneurs, while particular adjustments were made for agriculture production in households.

Entity statistical institutions have used different approaches.

Federation of BiH

For entrepreneurs, adjustments were made for activity D-Manufacturing industry as a percentage of the original data (5.0%-10.0%). Adjustments have been related to food producers, wood joinery production and different things from wood, things from knitting materials, sewing for a fee tailor made textile clothing.

Fixed percentage applied to the data reports output, IC, GVA, CFC and mixed income. For Manufacturing of food product, Manufacturing wood and wood products used in the percentage of 5%, and for Manufacturing of textiles and clothing production percentage of 10%.

Significant adjustments were done in the activity F-Construction for individual housing construction. Output calculation was made on the basis of data from survey on individual housing construction value from Construction Department until 2011. Output is equal to the value of construction works. According to opinion of experts engaged in construction of dwellings, it is estimated that IC in output for individual housing construction amounts to 65%.

Table 7.2

	Output	IC	GVA
2010	230 374	149 743	80 631

After 2011, there is not this survey, calculation of gross output and intermediate consumption for this part of the non-coverage is calculated using growth rate of gross value added for entrepreneurs of construction activities.

Adjusting for the NOE in the field of *Education* has been done for child care activity. On the basis of statistical data on the number of children by age groups, data on the average net wage, and information on the number of children living in care centres, estimated the number of children who do not reside in kindergartens.

Table 7.3: Number of children

	year of birth	number of children (demography data)
Children 1-3 year	2012	21 472
	2013	20 145
	2014	19 880
	Total	61 497
Children 3-6 year	2009	22 913
	2010	22 382
	2011	21 228

	Total	66 523
Total		128 020

The assumption was that the number of children aged 1-6 years equal to the number of mothers and 50% of these women are employed, and that they need child care services (50% of 128 020).

Table 7.4

	1-3 year
Number of children who need care (50% of 65 082)	30 749
Number of babysitters (5% of 32 541)	1 537
	3-6 year
Number of children who need care (50% of 67 548)	33 262
Number of babysitters (2,5% of 33 262)	832

Table 7.5

	monthly salary of babysitters in KM		average salary in Federation BiH	
	1-3	3-6	in KM	index
2012	234	166	804	
2013	235	167	819	101,9
2014	235	166	830	101,3
2015	244	173	835	100,6

Table 7.6

	number of babysitters	monthly salary	mixed income (column1xcolumn2 x12months)
	1	2	3
Children 1-3 year	1 537	244	4 501 353
Children 3-6 year	832	173	1 724 137
Total			6 225 490

Total adjustment mixed income amounts to 6 225 490 KM. Consumption of fixed capital has not been estimated due to the specific activities for which adjustments is made. Intermediate consumption is calculated as 10% of this amount. GVA is equal mixed income.

Table 7.7

	Output	IC	GVA	CFC	Mixed income
NOE- N3 for babysitters	6 848 039	622 549	6 225 490		6 225 490

Significant adjustments were also made in activity G-Trade for entrepreneurs. By analysing entrepreneur register in section trade, it was found out those traders on market places (open and closed) had not been completely included in register, and as a result the estimate of number of stalls on market places was made. The number of workers was estimated through the survey carried (in FBiH) about market places capacity and their average annual use.

Based on data from ad hoc survey on indoor and outdoor markets, conducted in 2007, the number of persons who conduct their activities in the markets and the average monthly net salary, output and intermediate consumption for this group of producers were estimated. Adjustment for next years, including 2015, was done so that the values of the previous year adjusted index of net salaries for individual entrepreneurs in the trade activity.

Republika Srpska

This non-exhaustiveness type refers to the households sector, which, according to our legislation is not obliged to register. Adjustments are made for the following areas:

- Real rent;
- Private accommodation for tourism;
- Students' work;
- Copyright fees;
- Contractual work;
- Fishing for one's own needs.

Output calculation real rent calculation is done on the base of number of flats let out and the average rent paid at the territory of RS as well as index of population. For the calculation of these items in the base year data of the Household Budget Survey for 2007 were used, which showed that 5% of total number of households pays rent for housing. Multiplying this number with the average price of rent, which is also taken from the same survey, the real value of rents is calculated. The value of the actual rent is updated annually with an index of population and the prices index of rented flats. Intermediate consumption for real rent is done on the basis of National Accounts experts' estimates. The estimates for real rent are included in the households sector in the L activity

The estimates of components relevant for calculating the data for private accommodation for tourism are done on the basis of the existing data for the entrepreneurs' (2% of output for entrepreneurs in the I activity) which is included in the households sector in the I activity.

The calculation of estimates for students' work is done according to the report of the Association of youth and students' co-operatives at the level of RS. The estimates are made based on the number of registered members, calculated gross payments for students and calculated commissions. In National Accounts, it is necessary to make corrections concerning students' work for those units that provide

intermediation services for students' temporary jobs and which include their service charge for intermediation in their annual financial statements.

Expert estimate for copyright fees and contractual work is based on the item of the personal income tax, included in the Budget Report of the RS Ministry of Finance.

Since fishing does not have an important role in the economy as a whole, the adjustment is done for fishing for their own needs.

7.2.4 N4 Registered legal entities are not included in statistics

Adjustments for this type of non-exhaustiveness have been 9.8% of total adjustments or 0.6% of GDP. Adjustments for producers not covered by survey were not considered significant by all NACE activities, as the data for this group of institutional units are collected with annual financial statement of legal units.

In *Federation BiH* adjustments were made in a way that enterprises whose statistical statements were not covered were identified by comparing the list of reporting units in three successive years. In this way, adjustment was made for enterprises which submitted financial statement for previous and following year, and not for reference year. Output, intermediate consumption and GVA for enterprises which have not submitted the statement for the current year were calculated in a way that these categories for observed group of enterprises were extrapolated by index of growth of GVA for the following and previous year.

Since 2007, it was not possible to carry out assessments in this manner, then the estimate for this type of non-coverage were made in a way that the output and intermediate consumption are estimated by applying share of N4 from the previous year on the data of current year. Adjustments are made at division level of NACE.

According to the Law on enterprises and cooperatives, religious institutions are obliged to register in the administrative register as well, but they are not required to submit their financial statements. The calculation is done using data from the Pension Insurance Fund. On the basis of the number insured persons employed in religious institutions and average salaries in S activity it is possible to do the adequate calculation. This adjustment is included in NPISH for the S activity.

Republika Srpska - Updating of the statistical business register (SBR) is done using databases of different administrative sources, such as register of financial reports – APIF, register of taxpayers – Tax Authority, and information obtained through statistical surveys. This SBR serves as a standard framework for comparison of coverage of all collected data. Each year, after collection of database with final reports from legal entities, comparison is made with enterprises from the register. For those enterprises that did not submit financial report, but they exist in the basis of Tax Authority, the calculation is imputed. It is assumed that such legal entity has some turnover, and that it should be included in the calculation. Gradual decrease of adjustments through this mistake is noticeable, which is the result of increased promptness of Tax Authority. According to the Law on enterprises and associations, religious institutions are obliged to register in the administrative register as well, but they don't have to submit financial reports. By contacting the Pension Fund, persons employed in religious institutions are insured, so according to the number of insured persons and reported salaries in S activity it is possible to do the corresponding calculation. This adjustment is included in NPISH for the S activity.

7.2.5 N5 Registered entrepreneurs are not included in the statistics

No estimates for non-exhaustiveness type N5 were made for any activity. According to the Tax Authority Law entrepreneurs are obliged to have permission for work. The registration of taxpayers is jointly conducted by Tax Authority and statistical offices.

Statistical entities offices have different approach in calculation of estimates for this non-exhaustiveness type.

Federation BiH

The Tax Authority in Federation of BiH has complete records of all active entrepreneurs, for timely and comprehensive taxes collecting. Entrepreneurs are obliged to submit the tax declaration form about generated income. According to the existing tax legislation, if taxpayer does not submit tax declaration in due time, the Tax Authority office will do it instead of him. Since Tax Authority office is a reporting unit for entrepreneurs, it is assumed that all such taxpayers have been covered by existing statistical report. This is the reason why there is no ground for this type of non-exhaustiveness to exist. Each year, data on number of registered entrepreneurs obtained from statistical survey are compared with the same data obtained from data processing centre within Tax Administration, where tax declaration forms for entrepreneurs are processed.

Republika Srpska

Tax assessment forms do not provide much information relevant to the calculation of GVA. Labour statistics conducts semi-annual survey on number of employees in the entrepreneur sector, the data are derived from the Health Insurance Fund, according to the number of reported entrepreneurs and their employees. In addition, labour statistics is the data source on gross and net wages by activities. Based on these data, the calculations are done for the sector of entrepreneurs, until 2007. Since the existing sources of data were not reliable, RSIS conducted the survey on entrepreneurs for 2007, on the sample of those who employ five or more workers. Collected data relate to revenues, costs, compensation of employees, number of employees, investments and inventories. When calculating the components relevant for the calculation of GVA, evaluation of data is done for entire entrepreneurship sector based on number of entrepreneurs and their employees from labour statistics. Therefore, additional adjustment is not necessary for non-reporting of registered entrepreneurs.

7.2.6 N6 Misreporting by producers

Non-exhaustiveness type N6 is the most significant type in BiH and amounted to 69.2% of total adjustment in 2015, or 4.5% of GDP.

Entity statistical institutions have used different approaches.

Federation of BiH

This non-exhaustiveness type is the most important and amounts to 71.1% of total NOE or 4.4% of GDP. Adjustments were made separately for enterprises and unincorporated enterprises-entrepreneurs.

It is assumed that most small businesses underestimate their income through financial statements. For this reason, the adjustment of value-added made for companies with revenue up to 100,000 KM, and those which income over 100 000 KM but with up to 25 employees.

Companies with income of up to 100 000 KM, in most cases, have a negative value added, or the value added is positive but less than the compensation of employees and consumption of fixed capital. All companies with revenue of up to 100 000 KM are divided into two subgroups: to companies with

revenue up to 10 000 KM and revenues from 10 000 to 100 000 KM. Adjusting for group companies with revenue up to 10 000 KM were made so that the added value equal with the compensation of employees. For group companies with revenue of 10 000 -100 000 KM added value is obtained as the sum of compensation of employees and consumption of fixed capital. Operating surplus is zero.

For group of enterprises with revenue higher than 100 000 KM and up to 25 employees, it is assumed that the financial statements show underestimated data on the compensation of employees. The latter category is further divided by classes according to the number of employees. These enterprises are first divided according to the number of employees in the groups: no employees, between 1-5 employees, between 6 and 10 employees and between 11 and 25 employees. Compensation of employees by employed persons (by classes) is compared because of estimate (assumption) on the reporting the lower compensation of employees. For smaller enterprises (by number of employees) there is an assumption that compensation of employees (by employed persons) is equal to the sum of compensation of employees (by employed persons) in larger classes. In this way, there is a new amount of compensation of employees. A percentage of change in the compensation of employees is also taken for a correction of value added. Adjustment is done at the two digit level of Classification of Activities, and not at the level of enterprises.

Adjustments are not made for large businesses whose financial reports under the constant supervision of the financial audit and their financial statements are public.

Additional adjustment of value added is done for Hotels and restaurants, Construction and Trade. The estimates are based on imputation of number of employees. In Hotels and restaurants that have officially 1 or 2 employed, two employees are imputed. In Construction industry, with 1, 2 or 3 employees, two employees are imputed. In Trade, for enterprises with 1 or 2 employees, one employee is imputed. On the based on the average net monthly salary estimated gross value production and gross value added.

Based on the analysis of the number of employees (the reports of national accounts statistics, ad-hoc research in the Hotels and restaurants, information from the media) concluded that companies with 1,2 or 3 employed in these activity cannot work with the present number of employees through reports. Employed are imputed as described above. The compensation of employees, GVA and Output are increased for the estimated value.

The largest adjustment for entrepreneurs was made in H-Hotels and restaurants activity. The adjustment was made on the basis of results derived from Ad-hoc survey, which was conducted in the framework of EUROSTAT OECD The survey collected data on: the average monthly revenue, average monthly salaries, monthly income of the owner, the average number of employees and the average monthly tips. Adjustment was made on the basis of results derived from Ad-hoc survey, by increase of owners income and by imputation of number of employees and their monthly net salaries as well as mixed income.

The adjustments for Construction, Trade, Health and Other activities are based on imputation of employees and their monthly net salaries. Based on the analysis of the number of employees by the owner it was concluded that certain activities cannot work with the present number of employees, and imputation of the workers for these activities is made (eg. in Construction, it was assumed that each owner must have at least two employees, in Health and social care that each owner must have at least 1 employee. In Other service activities is assumed that each owner must have at least 1-2 employees, depending of activity). The number of employees and their monthly net salaries (data provided by labour statistics) were imputed.

Republika Srpska

The major part of NOE relate to non-exhaustiveness type N6 – Misreporting. It is assumed that certain number of legal entities do not present correct financial statements, aiming to evade taxes and

contributions. By analysing output, intermediate consumption and GVA by an employee, some underestimated and overestimated data have been obtained, so the corrections within this non-exhaustiveness type have been directed towards increasing output or decreasing intermediate consumption or negative mixed income.

According to expert recommendations, negative mixed income is changed with a value which is equal to the average gross wages of this activity and the number of employees from Labor statistics. In addition, imputations are made for employees who are not registered. In the activities where is the number of employees in the financial statements is lower than the data from the Labour statistics the number of employees and their gross wages are imputed. The adjustment is done for Construction and Hotels and restaurants where is imputed number of employees.

By analyzing the intermediate consumption per employee, it was noticed that the costs of production in some enterprises were significantly overestimated. Intermediate consumption is adjusted using a rate of 1-5%.

7.2.7 N7-Statistical deficiencies in the data

Federation of BiH

The share of this type of non-exhaustiveness in total adjustment is 4.2% or 0.3% of GDP. Adjustments were made for non financial and financial enterprises and entrepreneurs.

Adjustments were made also for tips in hotels and restaurants, hairdressers and beauty parlours and tips given to taxi drivers. Adjustment for tips in hotels and restaurants was calculated on the basis of the Ad-hoc survey for entrepreneurs in Hotels and Restaurants activity. Compensation of employees was increased for calculated amount of tips. As there was no correction of intermediate consumption, total output and GVA were increased. The adjustments are made so that the value from the base year (2005) is corrected of index net salaries from labor statistics.

Further, adjustments for enterprises for this type of non-exhaustiveness were made for all activities (A-S), for: use of cars registered as fixed asset for private purposes; use of telephone for private purposes. Adjustments are made using data of national accounts statistics on the number of private enterprises by activities of NACE 2010, and the assumption that every private company using company cars or phones, in private use.

Adjustments for the use of official cars for private purposes is done on the basis of the number of enterprises by NACE BiH 2010 (excluding companies with revenue up to 10,000 KM) and the assumption that the amount of 100 KM per month per company used for private purposes.

Adjustments for the use the official phone for private purposes is done on the basis of the number of enterprises by NACE BiH 2010 (excluding companies that do not have employees) and the assumption that the amount of 25 KM per month is used for private purposes.

Intermediate consumption was decreased and GVA and compensation of employees were increased for the amount of mentioned adjustment.

Republika Srpska

Adjustments were made also for tips in craft services, trade, hotels and restaurants, transport – taxi drivers, doctors, and hairdressers. The value of tips, according to experts' estimates, is in the range of 1-4 % of output by activities for different services. The adjustments were made on bases of the average salary of employed in these activities and the number of employees.

7.3 Adjustments by NACE activities

The most important adjustments were made in Trade activity, for enterprises as well as for entrepreneurs, and amounted to 22.2% of total NOE. Significant adjustments forming 11.5% of total adjustments for NOE were made in Accommodation and food service activities for entrepreneurs and for small enterprises as well.

Besides these two activities, the significant adjustment was made in Construction especially for individual housing construction, as this activity has not been covered by the calculation of GDP categories through regular surveys.

Table 7.8: Exhaustiveness adjustments by activities, 2015

Section of activities	Gross value added	Structure %	% of GDP
A Agriculture, forestry and fishing	51 357	2.7	0.2
B Mining and quarrying	15 355	0.8	0.1
C Manufacturing	218 631	11.7	0.8
D Electricity, gas, steam and air conditioning supply	15 929	0.9	0.1
E Water supply; sewerage, waste management and remediation activities	15 997	0.9	0.1
F Construction	200 751	10.7	0.7
G Wholesale and retail trade; repair of motor vehicles and motorcycles	416 585	22.2	1.5
H Transportation and storage	105 956	5.7	0.4
I Accommodation and food service activities	215 243	11.5	0.8
J Information and communication	65 699	3.5	0.2
K Financial and insurance activities	9 730	0.5	0.0
L Real estate activities	91 459	4.9	0.3
M Professional, scientific and technical activities	128 908	6.9	0.5
N Administrative and support service activities	14 701	0.8	0.1
O Public administration and defence; compulsory social security	3 340	0.2	0.0
P Education	19 100	1.0	0.1
Q Human health and social work activities	41 310	2.2	0.1
R Arts, entertainment and recreation	74 399	4.0	0.3
S Other service activities	168 636	9.0	0.6
T Activities of households as employers			
U Activities of extraterritorial organisations			

and bodies

Total	1 873 086	100.0	6.6
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The adjustments for production and income approaches are done. The adjustment for exhaustiveness to the expenditure approaches is not done.

CHAPTER 8

THE TRANSITION FROM GDP TO GNI

8.0 Introduction and reference framework

Gross national income (GNI) is an income concept and is obtained by adding primary income receivable from the rest of the world (compensation of employees) to the GDP and by subtracting primary income payable to the rest of the world (ROW). In 2015, GNI amounted to 28 783 millions of KM or 100,68 % of GDP; it is estimated as the sum of the GDP at market prices at 28 589 millions of KM plus net primary income from the rest of the world at 194 millions of KM.

Table 8.1 Transition from GDP to GNI, 2015

		millions KM
	Gross domestic product	28 589
Plus:	Compensation of employees	782
	Receivable from the ROW	799
	Payable to the ROW (-)	17
Minus:	Taxes on production and imports paid to the EU	n/a
Plus:	Subsidies received from the EU	n/a
Plus:	Interest	-195
	Receivable from the ROW	33
	Payable to the ROW (-)	228
Plus:	Distributed income of corporations	-270
	Receivable from the ROW	1
	Payable to the ROW (-)	271
Plus:	Reinvested earnings on foreign direct investments	-167
	Receivable from the ROW	1
	Payable to the ROW (-)	168
Plus:	Property income attributed to insurance policy holders	n/a
	Receivable from the ROW	n/a
	Payable to the ROW (-)	n/a
Plus:	Rents on land and sub-soil assets	44
	Receivable from the ROW	44
	Payable to the ROW (-)	0
Equals:	Gross national income	28 783

8.1 The primary income account

The primary income account shows primary income flows between resident and non-resident institutional units. According to the IMF (BPM6), there are two kinds of primary income. Income associated with the production process (compensation of employees, taxes and subsidies on products) and income associated with the ownership of financial and other nonproduced assets (property income is the return gained from providing financial assets (that is investment income) or renting natural resources). Investment income consists of dividends and withdrawals from income of quasi-corporations, reinvested earnings, and interest.

Compensations to employees are estimated within income on the basis of aggregated data on the number of BH residents employed in the international organizations and embassies in BH and paid salaries and compensations for their work. Within expenditures, the data on the number of seasonal and occasional residents working in Bosnia and Herzegovina, and of non-residents temporarily employed in BH diplomatic and consular missions.

In 2015 net compensation of employees from the rest of the world amounted to 782 millions of KM.

Investment income (from direct, portfolio and other investment) is obtained by a survey on foreign investments in BH and trade credits for BH companies engaged in imports and exports of goods. Together with above mentioned income this category includes income of monetary authorities, having the CBBH accounting office as source of data. Based on results of surveys, data recorded in income as interest arise from credit relations between residents and non-residents directly connected by ownership participation in company, interest on deposits with non-residents and interest on trade credits. As expenditure, using the same sources, are recorded paid dividends and reinvested earnings to direct investors, payment of interest on loans, deposits and intercompany loans, and repayment of interest on public debt of the government sector according to the data of the BH Ministry of Finance and Treasury.

8.2 The secondary income account

The secondary income account shows current transfers between residents and non-residents. Whereas primary income affects national income, secondary income, together with primary income, affects gross national disposable income. Current transfers can be further classified by institutional sectors receiving or providing the transfers. A transfer is an entry that corresponds to the provision of goods, services, financial assets, or other nonproduced assets by an institutional unit to another institutional unit when there is no corresponding return of an item of economic value. It means that an institutional unit giving transfer does not get anything in return. The international accounts classify the following types of current transfers: Personal transfers and Other current transfers. Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from non-resident households. Personal transfers thus include all current transfers between resident and non-resident individuals, independent of the source of income of the sender and the relationship between the households. Workers' remittances are current transfers made by employees to residents of another economy.

Gross national disposable income (GNDI) is obtained by adding net of current transfers from the rest of the world to gross national income. In 2015, GNDI amounted to 32 352 millions of KM or 113.16% of GDP; it is estimated as the sum of GNI at 28 783 millions of KM plus net current transfers from the rest of the world at 3 570 millions of KM.

Table 8.2 Transition from GNI to GNDI, 2015

	millions KM
Gross national income	28 783
Net current transfers from the rest of the world	3 570

As revenue of current transfers for the General government sector grants are recorded through different projects financed by official donors (single countries or international organisations). Annual data on official aid to the development of BH are published by OECD for DAC members, while other grants and aids are estimated on the basis of data obtained from local institutions, and data on donors present in BH. Regarding expenditure of current transfers, under item Social contributions for General government, payments of entity pension funds to non-residents are recorded (payments to persons who gained the right on pension payments in BH).

Transfers of other sectors include personal and other transfers. Data sources for a segment of personal transfers through formal channels, both for inflows and outflows, are deposit taking corporations (ITRS survey) and data obtained from money transfer organisation. The remaining part of transfers from abroad, i.e. segment received through informal channels is estimated by the CBBH, using, as additional sources of data, the data of BH Agency for Statistics and BH Ministry of Human Rights and Refugees. Mainly, inflows of other transfers include social payments from foreign countries pension funds, while the remaining are transfers arising as a secondary consequence of life insurance. Data on pensions from abroad are compiled from deposit taking corporations (through ITRS survey), while the data on insurance and reinsurance are obtained through a direct survey conducted by CBBH. Coverage of this survey is complete, meaning that the data is obtained from all registered and operating insurance and reinsurance companies in BH.

CHAPTER 9

FUTURE IMPROVEMENTS TO THE ACCOUNTS

The first master plan for the future development of the official statistical system in BiH, was made in 2001 by World Bank consultant. In 2003, through cooperation of Eurostat and UNECE, we got a Global assessment with the proposal of specific actions to be taken. Then the second master plan was created under the CARDS TWINNING 2007 in cooperation with the Statistical Office of Slovenia. Unfortunately, it is common to all these documents that they have not been implemented in practice.

In December 2009, the AGA process was initiated by Eurostat on the basis of a request made by the Agency for Statistics of Bosnia and Herzegovina (BHAS). The main goal of the Adapted Global Assessment (AGA) of the National Statistical System (NSS) of Bosnia and Herzegovina is to evaluate the level of conformity vis-à-vis European standards, incorporating the UN Fundamental Principles of Official Statistics, the European Statistics Code of Practice, as well as the Eurostat Statistical Requirements Compendium. With that the AGA supports the improvement of the NSS and its alignment with international recommendations, standards and best practices.

Among other things, AGA has proposed the following: “An update of the BiH Master plan of 2008 in the form of a mid-term operational plan for the development of National Accounts is required. Such a plan should include the setting of clear priorities in accordance with the demands of the main users including the activities to be carried out with the support of assistance projects and the milestones at which concrete results have to be provided, together with a system of monitoring the fulfillment of the activities. It is of the utmost importance that the statistical institutions on the state level as well as on the entity level agree with the priorities set and the processes planned. The Agreement on implementation of harmonized methodologies and standards in producing the statistical data of BiH, stipulates that statistics for BiH has priority before statistics for the entities. That holds in particular true for national accounts, where the priority is placed on producing results for the nation as a whole”.

The new Master plan was prepared in the framework of IPA 2011 MBP.

Unfortunately even this plan has been accepted only by two institutions: Federal office for statistics of FBiH and Agency for statistics of BiH. Republika Srpska Institute for Statistics has not accepted the Master plan.

The proposed operational plan for 2014 - 2020 consists of six major activities:

1. Annual GDP by Output, Expenditure and Income Approach in Current Values
2. Annual GDP by Output and Expenditure Approach in Constant Values
3. Quarterly GDP by Output and Expenditure Approach in Current and Constant Values
4. Supply and Use Tables (and Input-Output Tables)
5. Sector Accounts
6. Regional Accounts

For activities 1 – 3 implementation by BHAS and the entities is already well underway. The remaining activities still need to be started up.

For further development of National accounts in BiH, three main problems must be solved as soon as possible:

1. Institutional arrangement and organization of accounting data collecting, processing and availability for National accounts purposes,
2. Institutional arrangement and responsibilities among statistical authorities in BiH for compilation of National accounts for BiH as whole, in line with the current regulations and agreement,
3. Insufficient number of staff currently employed in the National Accounts departments of all three statistical institutions.

The persistent presence of the statistical discrepancy between GDP(O) and GDP(E) remains a problem, with GDP(E) still being substantially larger. The reconciliation of the two estimates of GDP at country level by BHAS should have the highest priority. Full reconciliation can only be achieved within the framework of a supply and use table (SUT).

For further development of national accounts it is necessary to prepare estimates by institutional sectors. Implementation of sectoral classification of the institutional units in the statistical institutions of BiH in the Statistical Business Register (SBR) was initiated as part of the IPA 2012 Twinning Project. Sectoral Classification of Institutional Units has been taken over from ESA 2010 methodology. Sector codes at the most detailed level are being assigned to all active institutional units in SBR, with the exception of the units belonging to the General Government sector. Sector codes have been assigned as on 31 December 2015 in the SBR. The plan is to work towards the full implementation of sectoral classification of institutional units in accordance with ESA 2010 and preparation of an internal manual for the classification of institutional units into institutional sectors.

Within this the most important is identification of general government units but other units should be classified by institutional sectors as well. It should also be mentioned that sectoral classification would provide the necessary basis for allocation of FISIM by user sectors.

A point made by MP 2008 is that special attention should be given to market producers transferring market goods and services to households but financed by the general government (especially pharmacies, but possibly also dormitories for pupil and children, homes for old people etc.). In this respect delimitation of transfers in kind and subsidies is very important. Another issue is that indirect budget users (hospitals, schools etc.) need to be properly classified as market/non-market. Work in this context forms part of the activities already planned for IPA 2012 Twinning.

Regional accounts, as defined by ESA 2010, are not available for BiH although each of the entities prepare a variety of national accounts aggregates that cover their respective areas (in terms of geographic coverage of BiH) of responsibility, as described in the previous chapters on the production,

expenditure and income approaches. The construction of regional accounts initially requires a clear definition of the regions to be available.

Eurostat informed BHAS that NUTS 2 level which corresponds to the borders of the entities and Brcko District, was approved as a working basis, considered temporary until the NUTS is fully implemented. The plan is to work towards the improvement of regional statistics at NUTS 2 level through the IPA 2015 national project.

The big problem is lack of the a consistent series of data on population between NUTS 1 and NUTS 2 levels at the level BiH, which prevents publication of the consistent data per capita at the requested level.

The speed and the way of further improvement of the statistics of national accounts will depend on the speed and the way in which the above-mentioned issues are solved.

The statistical authorities of BiH will have to follow the needs of national accounts compilation to cover all those that will eventually emerge in the future.