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**Article**

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# Implementation of European System of Regional and National Accounts ESA 2010

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**Abstract:** The aim of the research work was to analyze the implementation of a new methodology in the framework of the European System of Regional and National Accounts ESA 2010. In order to achieve the objective author: i) described the need for a methodology for measuring the economy; ii) discussed the process of improving the methodology of describing the national and regional accounts; iii) presented differences between the ESA 2010 and its predecessor - ESA 1995; iv) determined the effect of changes resulting from the implementation of ESA 2010 to gauge economic growth. The research verified positively established research hypotheses: i) the ESA 2010 introduces significant changes to the existing framework of the system of national and regional accounts in the European Union; ii) ESA 2010 contributes to the increase of economic growth reported by EU Member States; iii) GDP growth in Poland due to use of the ESA 2010 will be limited because of modest expenditure on research and development.

**Keywords:** national and regional accounts, ESA 2010

**JEL codes:** P35, H30, H55, H60

## 1. Introduction

In recent years the importance of statistics of the general government sector in the national accounts has significantly increased. It had to do with, among other things, identified in recent years inaccuracies in information about levels of debt and deficit in this sector provided by some Member States of the European Union. These misconduct has shown the need to take action to minimize the risk of similar situations in the future. In addition, the financial and economic crisis has demonstrated that coordination of economic policies in the European Union (EU) is not sufficient. In this regard, it has been a number of legislative initiatives, whose main objective was to change the approach (from correction to prevention) to the statistics of the general

government sector and increase the efficiency of the coordination of fiscal and economic policies within the EU (Jeznach, Leszczyńska-Guberach, 2014: 1-2).

To meet the above demands the European System of National and Regional Accounts (ESA 2010) has been created, which is the latest methodology of the European Union in accordance with international accounting framework that is used for systematic and detailed description of the economy. ESA 2010 was published with the Regulation of the European Parliament and Council Regulation (EC) 549/2013 of 21 May 2013 introducing the European system of national and regional accounts in the European Union (ESA 2010) [2013] OJ L174.

The new European System of National and Regional Accounts revised methodology relies on the same standards, classifications, definitions, and accounting rules, which should be used for compiling accounts and tables on a comparable basis for the EU. In addition, ESA 2010 introduced amendments to the transmission of data to Eurostat in the form of tables, which are to be supplied by the Member States of the EU within the time limits (GUS, 2013: 1).

According to legislative plan, ESA 2010 should be practically implemented from September 2014. From that day on, the data transmitted from the Member States to Eurostat should be consistent with the new methodology. ESA 2010 introduces a number of changes, including in the area of pension systems, which are the subject of the research interests of the author. Thus, the author's desire is to verify the following hypotheses:

- ESA 2010 introduces significant changes within the existing framework of the system of national and regional accounts in the European Union;
- ESA 2010 contributes to the increase of economic growth reported by EU Member States, measured by Gross Domestic Product (GDP);
- GDP growth in Poland for the application of the ESA 2010 is limited by modest spending on research and development.

These hypotheses will be verified as a result of the research work, which is an analysis of the introduction of a new methodology in the framework of the European System of National and Regional Accounts ESA 2010. In order to achieve the objective the author will:

- Characterize the need for a methodology for measuring the economy;
- Discuss the process of methodology improvement describing the national and regional accounts;
- Present the differences between the ESA 2010 and its predecessor;

- Determine the impact of the changes resulting from the implementation of the ESA 2010 to measure economic growth.

These objectives will be achieved in the work, which in addition to the introduction and conclusion consists of three sections:

- The evolution of the methodology describing national and regional accounts;
- Differences between the ESA 2010 and ESA 1995;
- The impact of the ESA 2010 on the gross domestic product.

It can be concluded that the subject of the research will be institutions, states and organizations and studied the relationship between the two parties, to provide a relevant methodology of the system of national and regional accounts. The study covers mainly the years 1934-2014, and the author has used in the work following research methods:

- Examination of documents;
- Monographic;
- Analysis and logical design;
- Analysis and critique of the literature;
- Statistical.

## **2. The evolution of the methodology describing national and regional accounts**

The first official national income accounts were published in 1934., In the United States of America, by Simon Kuznets in the work under the title of National Income, 1929-1932, (Kuznets, 1934: 7). Further, seven years later, in 1941. In the United Kingdom, by Richard Stone. In 1947 Stone wrote a report titled Definition and Measurement of the National Income and Related Totals (Stone, 1947), which became the foundation for the development of the world's first textbook titled A System of National Accounts and Supporting Tables (SNA1953). Manual counted 46 pages and consisted of a set of six simple calculations (UN, 1953).

In the early sixties of the twentieth century SNA1953 has been revised. A new world methodology has been created under the title A manual system of national accounts (SNA1968), numbering 253 pages. New SNA1968 introduced the principle of division into sectors for individuals participating in monetary transactions with developed financial and non-financial accounts. New SNA1968 paid more attention to the data at constant prices. New SNA 1968 also

described the division to market and non-market producers and gave the foundation for the connection of the statistical systems of market economy countries and planned economy countries (UN, 1968).

In the early eighties of the twentieth century, the countries of The Council for Mutual Economic Assistance declared implementation of the SNA statistics and treatment of the global system of national accounts as a single, universally applicable. In the result, the a new global manual has been implemented, titled System of national accounts 1993 (SNA1993), numbering 838 pages. SNA was founded in 1993 and was intended for use in countries with market economies, regardless of their level of economic development, as well as in countries in transition to a market economy. As a result, new SNA1993 contained a number of significant changes and was published jointly by the United Nations (UN), the European Commission (EC), the International Monetary Fund (IMF), the Organization for Economic Cooperation and Development (OECD), the World Bank (UN, 1993).

In 2009 in the face of increasing globalization and changing economic environment, the progress made in methodological work and the needs of the users decided to introduce a new manual titled System of national accounts 2008 (SNA 2008), numbering 722 pages. SNA 2008 implemented changes into five areas: the financial sector, globalization and related issues, sectors of government, local government and the public. As with the previous system, the SNA 2008 has been adopted by the United Nations Statistical Commission and published jointly in September 2009 by the EC, IMF, OECD, UN, World Bank (UN, 2008).

World manuals implemented by United Nations influenced the work undertaken in Europe, where the European System of National and Regional Accounts (ESA) is equivalent to the global System of National Accounts (SNA). The first book, titled European System of Integrated Economic Accounts ESA, was developed in 1970 by the Statistical Office of the European Communities. It was a European Commission version of the System of National Accounts of the United Nations. The second edition of the ESA, under the title European System of Integrated Economic Accounts ESA second edition took place in 1978 and it was an updated version of first. The most important new developments was related to the VAT registration method, and also included a new chapter on measuring changes in price and volume (Eurostat, 1980).

The third edition titled European System of National and Regional Accounts ESA 1995

was published in 1996 and consisted of 420 pages. ESA 1995 contributed to progress in the harmonization of methodology and the precision and accuracy of the concepts, definitions, classifications and accounting rules, which should be used in order to achieve a consistent, reliable and comparable quantitative description of the economies of the Member States. Also ESA 1995 provided a more comprehensive and more detailed knowledge of the economic and financial structures of the Member States and their regions (European Commission, 1996).

Almost simultaneously with the work on the revision SNA1993, Eurostat has undertaken work on updating ESA1995 to European System of Accounts ESA 2010, numbering 688 pages. ESA 2010 is to be used for the first time from 1 September 2014. Until then, Member States shall communicate to the Eurostat the accounts and tables prepared in accordance with ESA1995 (European Union, 2010).

All of these versions of the ESA were still in line with the existing parallel world SNA systems. Some differences resulted only from the specific use of the system of national and regional accounts in EU countries.

### **3. Differences between the ESA 2010 and ESA 1995**

During introducing ESA 2010 there has been once again a review and update of the common standards, classifications and accounting rules for Member States in the development of national accounts and data transfer to Eurostat. This was necessary because in the last twenty years, there have been significant changes in the global economy. In particular, we can speak of a growing role in the production processes of information and communication technologies, the growing importance of intangible assets, products and services, intellectual property, as well as the globalization of economic systems. Accordingly, it is important how macro statistics are compiled in order to reflect these changes. It should be noted that the national accounts are the foundation of economic statistics and are a statistical framework for the analysis of economies. Therefore, national accounts must comply with structural economic changes in order to maintain their relevance. At the same time, there is also a need to provide more up-to-date information to the data users (Eurostat, 2010: 1).

ESA 2010, as the ESA 1995, uses two different views of the processes taking place in the economy: grouping of institutional units in institutional sectors; local clustering of activities by

type of activity. Also remained unchanged basic principles covering: flows and conditions of transactions, other changes in assets, resources, accounting principles (double / quadruple accounting), valuation, time of recording, consolidation, net recording, presentation sequence of accounts, balancing items and intermodal flows (GUS, 2013: 2).

The starting point for the changes made to the ESA 1995 update to the ESA 2010 was a list of 44 problems and 29 explanations that were the basis for changes in the SNA 1993 to the new SNA 2008 (Eurostat, 2013: 3).

The most important changes concern the following areas (European Commission, 2013: 1-2):

- The recognition of research and development capital leading to the accumulation of intellectual property assets;
- Expenditure on weapon systems that meet the general definition of an asset are classified as fixed assets and not as indirect costs;
- The concept of capital services was introduced in order to show it as an added value;
- The concept of financial assets has been expanded to include a wider range of financial derivative instruments;
- There are new rules for recording pension obligations to specify the obligations and cash flows including deferred cash flow in both private and public pension systems, as well as capital and non-capital;
- Goods sent abroad for processing will be recorded on a net basis, as opposed to the gross value of the 1993 SNA and ESA 1995;
- More attention has been put to financial institutions and a special purpose entity (Special Purpose Vehicle) in particular. The reporting on the SPV controlled by governments and registered abroad has been changed in such a way as to show the commitment of such SPV also in government accounts;
- Exceptional payments paid by public enterprises are to be treated as exceptional payments and withdrawals from equity;
- The principle of evaluation of public-private partnerships has been introduced;
- More detailed rules has been put on transactions between government and public enterprises or securitization funds, which could significantly affect the public debt;

- The provisions on loan guarantees, such as student loans or export credits to be included in the accounts has been clarified.

#### **4. The impact of the ESA 2010 on the gross domestic product**

European national accounts are created by the EU Member States in a comparable and reliable manner, in accordance with the current ESA. This is particularly important for describing the economic indicators, which have a crucial role in the economic and fiscal policy of the European Union. An example would be the measurement of gross national income, which defines the upper limit of the general budget of the EU and largely determines the contributions to the general budget of the individual Member States. It can be said that the key is to measure GDP and its components. Indeed, it is the GDP is used for assessing the condition of the economies of individual countries, to mention only such indicators as the budget deficit as a percentage of GDP, and public debt as a percentage of GDP (Eurostat, 2013: 3).

Updating the ESA 1995 to ESA 2010, it was found that for the ESA 2010 is 27 important areas of the analyzed 44, and 11 of which have a potential impact on the level of gross domestic product. These include: expenditure on research and development (R&D) as gross fixed capital formation; valuation of production for own final use for market producers; other property and casualty insurance - the measurement of output and claims arising from disasters, and reinsurance; weapons systems in the government as assets; decommissioning costs of large capital assets; classification of the sector general government, public and private sector; small tools; the issue of VAT; indexed debt instruments; Central Bank - the allocation of global production; land improvements as separate assets (GUS, 2013: 2).

Of course, the impact of these 11 factors on GDP revealed from different strength. To be able to estimate their power a particular Member States have been asked by Eurostat to provide preliminary estimates of the impact of the first ESA 2010 on GDP. It should be noted, however, that presented in Table 1, the data refer only to the methodological changes introduced by ESA 2010, and not to any statistical change (improvement of data sources, new data sources), which also will take place in the context of the implementation of the ESA, 2010. However, right now, on the basis of the results of the 24 Member States, which accounts for 97.7% of EU GDP, can be described as follows: the weighted average impact of methodological changes on GDP of



+2.4%, with what +1.9% (approximately 80% of the total impact) attributable to the capitalization of expenditure on research and development. The remaining effects arising from the methodological changes attributable to other elements, the most important being the capitalization of military spending, which accounts for +0.1% (Eurostat, 2014: 5).

**Table 1. Estimated impact of the methodological changes of ESA 2010 on GDP.**

	<i>First preliminary estimates</i> <i>Reference year: mainly 2011</i>		
<b>Percentage of GDP increase</b>	<b>Number of countries</b>	<b>Countries</b>	<b>Contribution to EU GDP</b>
0 do +1%	5	LV, LT, HU, PL, RO	5.1%
+1 do +2%	9	CZ, EE, IE, ES, IT, LU, PT, SI, SK	25.5%
+2 do +3%	4	BE, DK, DE, FR	41.7%
+3 do +4%	3	AT, NL, UK	20.8%
+4 do +5%	2	FI, SE	4.5%
+2.4%	23	UE Average	97.6%
+3.0%		USA	
No estimates provided yet	5	BG, EL, CY, MT, HR	

Source: (Eurostat, 2014: 6).

Based on the data in Table 1 it can be concluded that the estimated impact of methodological changes ESA 2010 on gross domestic product varies between Member States. In the first instance the differences are due to the variability expenditure on research and development between Member States. For comparison, it is worth mentioning that in the United States, the transition from the SNA 1993 to SNA 2008 led to an increase in GDP of 3.5% in 2010-2012, of which 2.5% occurred in the capitalization of expenditure on research and development. However, taking into account that the changes which resulted in US GDP growth by 0.5% (original capitalization of cultural, literary or artistic) were already part of the EU's GDP according to ESA 1995, it has to be said that the weighted average impact for the EU level of 2.4% should be compared with 3% for the US (including an increase in expenditure on research and development amounted to 1.9% and 2.5%) (GUS, 2014: 4-5).

Moreover, according to a preliminary estimate set out in Table 1 and confirmed by the Central Statistical Office (GUS), Poland will join the group of Member States to the impact of

changes in the level of nominal GDP, due to the implementation of the ESA 2010 methodological changes, not exceeding 1 percent. As already mentioned, the biggest influence on the increase in the level of nominal GDP in all Member States of the European Union has a change of approach in the national accounts of expenditure on research and development. This means that in countries with high expenditure on research and development (Finland, Sweden), a change from the implementation of the ESA 2010 will be reflected in the amount of impact on GDP (range from +4 to + 5%). Due to the fact that in Poland so far spending on research and development remained at a relatively low level, this impact compared to other countries of the European Union, also belongs to the low (GUS, 2013: 3).

## 5. Conclusion

The aim of the research work was to analyze the implementation of a new methodology in the framework of the European System of National and Regional Accounts ESA 2010. In order to achieve the objective the author:

- Described the need for a methodology for measuring the economy;
- Discussed the methodology for describing the process of improving national and regional accounts;
- Presented the differences between the ESA 2010 and its predecessor - ESA 1995;
- Set the impact of the changes resulting from the implementation of the ESA 2010 to gauge economic growth.

The research has verified positively established hypotheses:

- ESA 2010 introduces significant changes within the existing framework of the system of national and regional accounts in the European Union - These are the changes in the areas of expenditure on research and development (R&D) as gross fixed capital formation; valuation of production for own final use for market producers; other property and casualty insurance - the measurement of output and claims arising from disasters, and reinsurance; weapons systems in the government as assets; decommissioning costs of large capital assets; classification of the general government, public and private sector; small tools; the issue of VAT; indexed debt instruments; Central Bank - the allocation of global production; land improvements as separate assets;

- ESA 2010 contributes to the increase of economic growth reported by EU Member States, measured by Gross Domestic Product (GDP) - The weighted average impact of methodological changes on GDP is + 2.4%;
- GDP growth in Poland for the application of the ESA 2010 is limited by modest spending on research and development - Poland is in the group of Member States to the impact of changes in the level of nominal GDP, due to the implementation of methodological changes in ESA 2010, not more than 1 percent. The reason is the low expenditure on research and development, which account for about 80% of the impact of methodological changes on GDP.

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***Wdrożenie Europejskiego Systemu Rachunków Narodowych i Regionalnych ESA 2010***

***Streszczenie***

Celem artykułu była analiza wdrożenia nowej metodologii w ramach europejskiego systemu rachunków regionalnych i narodowych ESA 2010. Aby osiągnąć ten cel, autor: i) opisał potrzebę wprowadzenia nowej metodyki pomiaru gospodarki; ii) omówił proces ewolucji metodologii opisywania rachunków narodowych i regionalnych; iii) przedstawił różnice między ESA 2010, a jej poprzedniczką - ESA 1995; iv) określił wpływ zmian wynikających z wdrożenia ESA 2010 na ocenę wzrostu gospodarczego. Przeprowadzone badania zweryfikowały pozytywnie hipotezy badawcze: i) ESA 2010 wprowadza istotne zmiany do istniejącej metodologii systemu rachunków narodowych i regionalnych w Unii Europejskiej; ii) ESA 2010 przyczynia się do zwiększenia wskaźnika wzrostu gospodarczego raportowanego przez państwa członkowskie UE; iii) wzrost miernika PKB w Polsce w związku z korzystaniem z ESA 2010 będzie ograniczony ze względu na skromne wydatki na badania i rozwój.

***Słowa kluczowe:*** system rachunków narodowych i regionalnych, ESA 2010



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