



# **Report on GVA of multi-regional enterprises**

A survey of regional indicators used for the compilation of GOS of multi-regional enterprises



**EUROPEAN COMMISSION**

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## 1. INTRODUCTION

The aim of this study<sup>1</sup> is to prepare and carry out a survey on voluntary basis among Member States of the European Union on the methods used for the compilation of gross operating surplus of multi-regional enterprises at NUTS 2, for a recent year.

The goal of the work is to understand whether the different methods of regionalising gross operating surplus in multi-regional enterprises reduce the comparability of the regional GVA figures between countries. In particular, some countries have very high shares of GVA in the capital region which may be in part the result of a methodological bias.

The study covers the following tasks:

1. Design a survey to collect the relevant data
2. Share the survey with the relevant national statistical institutes and collect their replies
3. Analyse the result of the national statistical institutes that have responded: Given the voluntary nature of this survey, not all institutes will participate. Should the number of participating NSI be lower than six, three NSIs should be approached directly.
4. Make a recommendation on the methodologically most appropriate regionalisation approach
5. Recommend changes to the current practice and documentation if needed.

The study will answer the following questions:

- a. In which regions and industries is the gross operating surplus of multi-regional enterprises a large share of total gross value added?
- b. To what extent will the different types of regionalisation have a significant impact on overall regional distribution of GVA?
- c. What is the methodologically most robust approach to regionalising gross operating surplus for multi-regional enterprises?
- d. Is the current practice sufficiently documented and harmonised or it should be improved?

Eurostat has sent an email (see Annex 1) to eleven member states with the request to cooperate in this study. It regarded the following member states: AT, BE, CZ, DE, ES, IT, NL PL, PT, SK and UK.

They received at March 30, 2016 two questionnaires, to be completed in Excel files before June 30, 2016. It regarded: the file 'Share of GOS in GVA\_ to be completed' with a hypothetical example of a completed file and the file 'Meta data on indicators used'. A Word file 'Explanation questionnaire GOS' has been added. This file explained how to complete the questionnaires (see Annex 2). The Excel files will be provided separately.

A short report on the preliminary findings for the GOS of multi-regional enterprises project (see Annex 3) has been sent on July 6, 2016 to Eurostat. The main conclusion that moment was that only three countries (NL, PT and UK) provided quantitative information about the regional distribution of GOS of multi-regional enterprises and seven countries provided some general qualitative information about the compilation of the regional distribution of GVA of multi-regional enterprises. The main reported

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<sup>1</sup> This study is on request of the European Commission, DG Regional and Urban Policy, Economic Analysis, Procurement procedure, No 2015.CE.16.BAT.049; Study: 'Regionalising Gross Operating Surplus in the EU'.

problem was that the delivery of GOS (B.2g) is not compulsory in the ESA 2010 transmission programme of data and is not part of the compilation process. And another problem was, that it is difficult to regionalise other taxes less subsidies on production for multi-regional enterprises.

Because of the limited survey for the before mentioned eleven countries, an overview will also be given based on the available inventories and compilation tables in CIRCABC for 23 countries. This information is based on the situation in 2008 – 2009, when the regional GVA compilation was still founded on ESA95 and NACE Rev.1.

In section 2, the main findings of the available inventories and compilation tables will be discussed. In section 3, the main results of the limited survey will be discussed. In section 4, main conclusions will be drawn and section 5 will provide recommendations for the contents of the regional accounts inventories and compilation table.

## **2. AVAILABLE INVENTORIES AND COMPILATION TABLES AT CIRCABC WITH FOCUS ON THE INDICATORS USED FOR THE REGIONAL DISTRIBUTION OF GOS OF MULTI-REGIONAL ENTERPRISES (ESA 95)**

This section is based on available information about the inventories on regional GVA and the compilation tables. The library in CIRCABC contains the inventories of Regional GVA that were produced by NSIs in 2008 and 2009 for the following EU member states: AT, BE, BG, CZ, DE, DK, EL, FI, FR, HU, IE, IT, LT, LV, MT, NL, PL, PT, RO, SE, SI, SK and UK.

An overview of the main results will be given in an attached file Annex 4.

The inventories and compilation tables were based on ESA 95 and NACE Rev.1. The main result was that 8 out of the 23 countries did not explicitly provided information about the treatment of multi-regional enterprises.

**DK** and **EL** did not provide information about the treatment of multi-regional enterprises (MRE), though they mentioned MRE in the compilation table. For EL was no detailed info available about the regional indicators used for the regional allocation of GVA of MRE.

**DE** used wages and salaries per local unit for the labour-part and GFCF (10 years) for the capital-part. Because of the complex compilation method, DE did not mention the share of GVA of MRE in total GVA.

**IT** used a method in which they allocate GVA to local units. In principle, IT used labour units and GVA per worker at the local level to allocate GVA to regions. In this method, no explicit info for MRE was available.

**MT**, the method used is primarily a top-down approach. There was no information available about the regional indicators used.

**RO** did not explicitly mention the treatment of MRE, though it is mentioned in the compilation table. It is not certain which indicator RO used, probably turnover.

**SE** explained that the compilation was based on municipal level, using number of employees per local KAU at 3-digit level of NACE Rev.1. By using this method, it was not possible to get explicit information on MRE.

**SL** used a top-down method based on the regional distribution of wages and salaries as main indicator.

**UK** used a top-down income method based on the regional distribution of compensation of employees per local unit.

The other 15 countries provided information about the treatment of MRE, using mainly wages and salaries or the number of employees as regional indicator for the allocation of GVA.

With the exemption of DE, no one country treated GOS separately.



An overview of the share of GVA of MRE in total GVA is given in the table below.

Country	Share of MRE in total GVA (%)
AT	21,4
BE	19,2
BG	1,2
CZ	21,6
DE	0,0
DK	0,5
EL	6,9
FI	1,2
FR	19,2
HU	0,8
IE	100,0
IT	-
LT	3,0
LV	28,0
MT	0,0
NL	16,6
PL	1,1
PT	21,7
RO	7,4
SE	0,0
SI	0,0
SK	15,0
UK	0,0

The first conclusion might be that the outcomes for the share of GVA of MRE in total GVA in the compilation tables, reflect more the compilation method than their real share of GVA in total GVA. In an update of the compilation tables and inventories, it is recommended paying more attention to the MRE's. The second conclusion is that the 23 countries did not treat GOS explicitly, not for uni-regional enterprises and not for multi-regional enterprises.

### **3. A LIMITED SURVEY ON THE REGIONAL INDICATORS RECENTLY USED FOR THE REGIONAL DISTRIBUTION OF GOS OF MULTI-REGIONAL ENTERPRISES (ESA 2010)**

Eurostat has sent an email (see Annex 1) to eleven member states with the request to cooperate in this study. It regarded the following member states: AT, BE, CZ, DE, ES, IT, NL PL, PT, SK and UK.

They received at March 30, 2016 two questionnaires, to be completed in Excel files before June 30, 2016. It regarded: the file 'Share of GOS in GVA\_ to be completed' with a hypothetical example of a completed file and the file 'Meta data on indicators used'. A Word file 'Explanation questionnaire GOS' has been added. This file explained how to complete the questionnaires (see Annex 2). The Excel files will be provided separately.

The following information for the eleven countries became available.

#### **3.1 AUSTRIA (AT)**

Email of 30 November 2016:

"The compilation method in Austria is similar as Monica (BE) described and thus we are confronted with analog problems. In general, for the divisions of the ÖNACE-sections B to F for sector 11, P1, P2 and thus B1g is compiled for KAUs; the part D.1 of B1g of the LKAUs is estimated on the basis of wages and salaries of the LU. Subsequently, residual GOS (without consideration of D29 and D39!) is allocated to the region where the KAU is located.

For the other branches, different methods for regionalisation of B1g are used, mainly based on regional distribution of compensation of employees or number of employees. GOS is implicitly regionalised with the distribution of compensation of employees to the region where the local unit is located."

#### **3.2 BELGIUM (BE)**

Email of 9 May 2016:

"In Belgium, B2g (GOS) is not estimated explicitly on the regional level.

There is a regional breakdown of P1, P2 and B1g for sectors S11 and S14. P1, P2 and B1g according to administrative data are known by enterprise. For multi-regional enterprises, the breakdown per local unit is made on the basis of the number of employees per local unit within an enterprise.

The conversion of administrative concepts into ESA-concepts is made on a higher level (not per enterprise, but per sector/branche of activity (135 branches)).

For the sectors S12, S13 and S15 value added is directly distributed according to the regional distribution of compensation of employees (top down). Compensation of employees is calculated per enterprise and for multiregional enterprises per local unit."

#### **3.3 CZECH REPUBLIC (CZ)**

Email of 17 June 2016:

"We had discussed our possibilities of calculation of the regional gross operating surplus and we came to conclusion that we are not able to calculate the GOS regionally.

As Monica wrote about Belgian situation, also in the Czech Republic B2g (GOS) is not estimated explicitly on the regional level.

There is a regional breakdown of P1, P2 and B1g for sectors S11 and S14. P1, P2 and B1g, according to data from accounting are known by enterprise. For multi-regional enterprises, the breakdown per local unit is made on the basis of the compensation of employees per local unit within an enterprise. The conversion of accounting concepts into ESA-concepts is made on a higher level (not per enterprise, but per branch of activity (120 branches)).

For the sectors S12, S13 and S15 value added is directly distributed according to the regional distribution of compensation of employees (top down). Data on compensation of employees are available per local units from statistical survey."

### **3.4 GERMANY (DE)**

Email of 1 July 2016:

"We share the astonishment of ES, that GOS has been chosen for the questionnaire, since this variable isn't included in the transmission program of ESA 2010 for the regional tables 10 and 12.

In German regional accounts, GVA at regional level – first on NUTS 1 level, then secondly on NUTS 3 level and finally added to NUTS 2 – is calculated either by production approach or income approach, depending mostly on data availability by NACE Rev. 2 industry divisions.

According the industries, where Structural Business Survey data is available, P1, P2 and B1g (GVA) are known by enterprise. For multi-regional enterprises, the breakdown per local unit is made on the basis of the number of employees per local unit within the enterprise.

B2g (GOS) is not calculated explicitly on regional level. GOS (roughly) is obtained only as a balance of GVA and D1 (compensation of employees).

For the industries with income approach for GVA calculation, first D1 is estimated on regional level on the basis of the number of employees per local unit and second GOS – balance of GVA and D1 – is regionalised (first of NUTS 0 data to NUTS 1 level and second of NUTS 1 data to NUTS 3 level) mainly by regional data of sales (turnover) by company. Turnover of multi-regional enterprises is regionalised on the basis of the number of employees per local unit.

So, regional GOS data only is obtained as a balance and not calculated explicitly. Therefore it is not possible to fill in the questionnaire you have sent us."

### **3.5 SPAIN (ES)**

Email of 1 July 2016:

"we are a bit surprised that the variable chosen for the questionnaire is the variable GOS, since this variable isn't included in the transmission program of the ESA-2010 for the regional tables 10 and 12, therefore it is not compulsory to estimate it.

For regional estimations, of the two possible approaches to calculate the GDP at regional level (production approach and income approach) the first one is used for most of the industries, from the regional data provided by the Spanish Structural Business Survey. Therefore, as the colleague from Poland has said, GOS is obtained as a balance.

Regarding, multiregional enterprises, they are all collected (and regionalized by establishment) in the SBS system, and then introduced in the regional accounts estimations. Neither the Spanish national accounts nor the Spanish regional accounts have specific estimation on multiregional enterprises.

So, we can't fill in the questionnaire you have sent us.”

### **3.6 ITALY (IT)**

Email of 28 June 2016:

“As for the inventory, we completely changed our approach to RA by the occasion of the benchmarking revision to adopt ESA2010. We now have a data base on financial statements of all active enterprises, that we describe as follows:

Statistical register of annual financial statements of active enterprises included in the ASIA-Enterprises register (about 4.4 million units), excluding :

1. enterprises active for less than 6 months in the year ( included by NA in N4; legal person but it is not surveyed);
2. financial auxiliaries with 100 persons employed and more (included by NA in N4);
3. enterprises classified in NACE Rev.2 divisions 64 and 65

The compilation of the register is based on the massive use of administrative and fiscal data as primary source of information, complemented by statistical survey data. The Frame-SBS is currently used for the production of the SBS according to EC Structural Business Statistics (SBS) Regulation N 295/2008 and the Commission Regulation (EU) No 275/2010. It also represents an intermediate data base providing information on the economic results of Italian enterprises for the needs of National Accounts.

The Frame-SBS is fully consistent with other statistical registers, in particular with the ASIA register. Furthermore, the Frame-SBS provides a “structural information cornerstone” for further integration with other firm-level statistical registers, referring to both structural and short-term economic events. According to the size of the enterprises, it can be partitioned into Frame-SME, for enterprises with up to 99 persons employed, and Frame-SCI for larger enterprises.

This allows a micro-based estimation of value added, also at the regional/sub-regional level.

### **3.7 NETHERLANDS (NL)**

The Netherlands has sent an email at 2 July 2016. An overview of this table is the following:

Provincies		GVA	GVA MRE	Comp of employees MRE	GOS MRE	Other TAX-Subs MRE
Groningen	NL11	100	60,2	18,0	42,3	-0,1
Friesland	NL12	100	52,0	27,6	24,6	-0,3
Drenthe	NL13	100	52,4	30,5	21,9	0,1
Overijssel	NL21	100	46,4	28,0	18,5	0,0
Gelderland	NL22	100	45,0	27,0	18,2	-0,2
Flevoland	NL23	100	46,3	23,8	22,2	0,3
Utrecht	NL31	100	54,5	31,2	23,1	0,2
Noord-Holland	NL32	100	45,7	25,1	20,3	0,3
Zuid-Holland	NL33	100	43,4	24,9	18,4	0,1
Zeeland	NL34	100	36,9	23,3	13,6	0,0
Noord-Brabant	NL41	100	42,5	24,0	18,4	0,1
Limburg	NL42	100	46,5	27,2	19,2	0,2
Extra-regio	NLEX	100	100,0	8,3	91,6	0,1
<b>Nederland</b>	<b>NL</b>	<b>100</b>	<b>46,9</b>	<b>25,5</b>	<b>21,3</b>	<b>0,1</b>

GOS of multi-regional enterprises has been calculated as a balance of Bg.1 and D.1 corrected for other taxes less subsidies by MRE.

### 3.8 POLAND (PL)

Email of 20 June 2016:

“Please find below our main concerns on the GOS exercise:

- If the aim of the GOS exercise is assessing and improving the comparability of regional GVA (B1g) data, in case of Poland we should focus on methods, data sources and indicators applied to gross output (P1) and intermediate consumption (P2) regionalization. It is because in the Polish regional accounts GVA (B1g) is calculated as a difference between gross output (P1) and intermediate consumption (P2). Additionally, P1 and P2 are regionalized separately using different methods and indicators resulting from available data sources and the level of detail.
- Detailed methodology of P1 and P2 calculations (sources and methods + process tables) is included in Regional GVA Inventory.

Below we include short methodological description of GVA calculation for multiregional enterprises:

As regards multiregional enterprises, their majority is covered by sector S.11. One of the main sources for this sector is SP Annual report of enterprise. It is full survey and covers entities where number of employment amounts to 10 persons and more, conducting activity in the following NACE sections: section A (division 03), B to I and J (excluding institutions of culture with legal personality), L-N, P (excluding tertiary education), Q (excluding independent public health care institutions), R (excluding institutions of culture with legal personality), S; survey does not cover state organizational units.

The survey covers also local units of the enterprises and provides considerable data for LKAUs.

Range of data used in regional accounts:

Data for enterprises: balance, profit and loss account and complementary data.

Data for local units: the value of manufactured products, the value of revenues from sales of commodities and materials, total costs borne for the manufacture of products, costs of purchase of commodities and materials, wages and salaries, average number of employees and the number of employed persons.

Taking the above into consideration there is a sufficient data source providing data at the level of local KAU that are used for calculating P1, P2 and D1 for multiregional enterprises (pseudo bottom-up method).

In case of S.12 and S.13 sectors data for multiregional units are distributed from enterprise level to local KAUs using as an indicator data on wages and salaries and employed persons from Z-06 Report on employment, wages and salaries and duration of work (data for section K are reported by local units; data on the number of employed persons by factual place of work are reported for local units on gminas level and for NACE divisions).

In S.14 and S.15 sectors, mainly due to the lack of individual data, top-down and pseudo top-down methods are used as well as simplified indicators are applied.

Gross operating surplus (B2g) is received as a result of subtraction.

Elements of GVA:

Data for local KAUs of multiregional enterprises of S.11 sector on compensation of employees (D1) are calculated using data from SP Annual report of enterprise at the level of local KAUs. In S.12 and S.13 sectors when multi-regionality is stated, data on the number of employees by local KAUs are used to distribute data from enterprise level.

Data for other taxes less subsidies on production (D29./D.39) are mainly from administrative sources. For example other taxes and subsidies on production are estimated at the level of the country in NA for S.11 sector and calculated in RA applying top-down methods using as an indicator data on taxes and subsidies from financial reporting at NUTS 2 level (the range of taxes and subsidies from financial reporting is not consistent with ESA definitions).

As P1 of S.13 sector is obtained as a sum of costs, the main part of GOS is constituted by consumption of fixed capital (P51c). National data are regionalised applying an indicator created on the basis of gross value of fixed assets in the general government sector (top-down method). We do not have data for groups of units.

Taking into account methods of estimation of regional other taxes less subsidies on production it is possible to estimate the amount of GOS (being a result of subtraction) for multiregional enterprises.

Taking the above into consideration it is possible to calculate GVA for the multiregional enterprises by sections. However, it would be very time-consuming task. What is more, we will have to do this task for the inventory purposes (the reference year will be probably different)."

### **3.9 PORTUGAL (PT)**

Email of 29 June 2016,

"Please find attached the questionnaire file: Share of GOS in GVA\_ to be completed (and excel file on Meta data on indicators used) according the exercise of Portugal GOS of multi-regional enterprises for the year 2012, as requested.

In Portugal, GDP is obtained by production approach. Output (P1), Intermediate consumption (P.2) and Compensation of employees (D.1) are regionalized according Local KAU information. Based on assumption: D29-D39 (other taxes less subsidies on production) follows the regional production structure, GOS is obtained implicitly ( $B2g = GVA - D1 - D29 + D39 - B3g$ ).

I would like to clarify, regarding S13 and S15, P1 follows the regional distribution of costs (P2+D1), and  $GVA = P1 - P2$ , I apologize for my imprecision in the previous email.

Also, S13 is normally treated by sub-sector, and S.1311 Central government, S.1312 State government and S.1314 Social security funds were treated as multi-regional units. Sub-sector S.1313 Local government was treated as uniregional units.

Please note this exercise was a demanding task in time and resources. We treated separately uniregional and multi-regional units by Sector and branch activity, even with a higher detail than required, due to specific treatments according to branch of activity.”

Results of this exercise will be shown in the table below.

Regions		Total GVA	GVA share of multi-regional enterprises in total GVA	GOS share of multi-regional enterprises in total GVA
National total PT	PT1	100	31,2	12,8
Norte	PT11	100	27,8	11,8
Algarve	PT15	100	27,7	12,8
Centro (PT)	PT16	100	27,6	12,4
Lisboa	PT17	100	37,6	13,7
Alentejo	PT18	100	33,8	17,5
Região Autónoma dos Açores	PT20	100	15,3	5,8
Região Autónoma da Madeira	PT30	100	15,2	6,5
Extra-Regio NUTS 2	PTZZ	100	0,0	0,0

Meta data on indicators used for the regionalisation of GOS of multi-regional enterprises						
Country: Portugal						
Reference year: 2012						
Industries (NACE Rev. 2; A*10)	Sections	Sources from which the indicators are taken	Were there any changes in the indicators used for the multi-regionalisation of GOS of multi-regional enterprises?		Do you intend to change the indicators for the regionalisation of GOS of multi-regional enterprises?	
			If yes, please clarify.	If yes, when?	If yes, when?	If yes, when?
1	2	3	4	5	6	7
Agriculture, forestry and fishing	A	Simplified Corporate Information (Non-financial corporations), Agricultural Survey – RA 2009, Animal production statistics, Crop production statistics, Agricultural prices statistics, Survey on the sale of fruit and olive trees, General statistics of forestry and General statistics of fisheries.	No		No	
Mining and quarrying, etc.	B-E	Simplified Corporate Information (Non-financial corporations), Specific requests for regional information to some major companies of Electricity gas, steam and air conditioning branch activities.	No		No	
Of which: Manufacturing	C	Simplified Corporate Information (Non-financial corporations)	No		No	
Construction	F	Simplified Corporate Information (Non-financial corporations), single report	No		No	
Wholesale and retail trade; etc.	G-I	The Simplified Corporate Information (Non-financial corporations), International Tourism Expenditure Survey, Tourism Statistics and Resident tourist demand survey. Specific requests for regional information to some major companies of Transportation and storage branch activities.	No		No	
Information and communication	J	Simplified Corporate Information, Specific requests for regional information to some major companies of Information and communication branch activities.	No		No	
Financial and insurance activities	K	Simplified Corporate Information (Financial corp)	No		No	
Real estate activities	L	Simplified Corporate Information (Non-financial corporations), General Survey of the Population and Housing – Census 2011	No		No	
Professional, scientific and technical activities, etc.	M-N	Simplified Corporate Information (Non-financial corporations), Survey on national scientific and technological potential	No		No	
Public administration and defence; compulsory social security, etc.	O-Q	Simplified Corporate Information (Non-financial corporations), General Account of the State, Account of the Governments of the Autonomous Regions of the Azores and Madeira, Global Social Security Account, management accounts and reports and accounts provided directly by the central, regional and local administration, as well as by autonomous State services and funds	No		No	
Arts, entertainment and recreation, etc.	R-U	Simplified Corporate Information (Non-financial corporations), Social Security Data	No		No	

### **3.10 SLOVENSKÁ REPUBLIKA (SK)**

Email of 30 June 2016:

“Under the conditions of the SOSR, the Gross operating surplus (GOS) is not compiled because we have no source data covering indicators on taxes and subsidies linked to KAUs at regional level.

From the statistical survey, the available data are on P1 and P2 split by branches and regions. The GVA calculation in regions is based on data coming from annual statistical survey. The data on employment and of wages paid are used as important tools in the process of regionalization GVA in order to verify its correctness.

The financial and capacity opportunities of the SOSR do not allow to cover KAUs in full scale by using the statistical surveys. This is a reason why under our conditions the compilation of estimation on GOS structure split by regions on the comparable basis with others NSI will be a problem. Without more detailed data sources it is difficult - for example - to regionalise the profit of enterprises as well as taxes paid predominately in Bratislava.

The possibilities of our statistical reporting system on the regional level does allow us to cover mainly requirements coming from Transmission Program ESA 2010. All others requirements on regional data over the TP framework, as well as the fulfilling of the questionnaire being sent, is very hard to arrange.”

### **3.11 UNITED KINGDOM (UK)**

In an email of 1 July 2016, UK provided technical information on the compilation of GOS and meta data on the indicators used. The main approach is the following<sup>2</sup>:

“Regional GVA is measured using the income approach (GVA(I)), which involves adding up the income generated by resident individuals or corporations in the production of goods and services. It is calculated gross of deductions for consumption of fixed capital, which is the amount of fixed assets used up in the process of production in any period.

The GVA(I) estimates cover the UK as a whole and are broken down to Nomenclature of Units for Territorial Statistics (NUTS) regions. NUTS is a hierarchical classification of spatial units that provides a breakdown of the European Union’s territory for producing regional statistics which are comparable across the EU. Regional GVA estimates are compiled at 3 levels of NUTS geography:

- NUTS1: 12 regions - Wales, Scotland, Northern Ireland and the 9 English regions, can be collectively referred to as regions. There is a thirteenth region known as Extra-Regio which accounts for economic activity that cannot be assigned to any specific region. For UK GVA(I) this consists mainly of oil and gas extraction on the continental shelf and the activities of UK embassies and forces overseas
- NUTS2: 37 regions - mainly groups of counties and unitary authorities; can be referred to as sub-regions
- NUTS3: 139 regions - principally individual counties and unitary authorities; also known as local areas

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<sup>2</sup> This information is based on the ONS Information Paper of 26 March 2015, Title of output: Regional Gross Value Added (Income Approach).



National totals are allocated to regions using the most appropriate available regional indicators. A regional indicator is a dataset which provides regional proportions which in turn are used to allocate national totals. They can be acquired from administrative sources and structural surveys. The national totals are consistent with those in the latest published UK National Accounts.”

**Indicators used for GOS at NUTS2 are<sup>3</sup>:**

GOS is made up of multiple components:

- Rental Income
  - NMCC = Non-Market Capital Consumption
  - Mixed Income
  - Gross Trading Profits and Surplus – GTPP = Gross Trading and Partnerships, GTS = Gross Trading Surplus, GTPOC = Gross Trading Profits of Other Corporations
  - Less Holding Gains
- Each is regionally apportioned differently, and there is a further industry breakdown in each component.

Inds	Rental Income	NMCC	Mixed Income	Gross Trading Profits and Surplus			Holding Gains
				GTPP	GTS	GTPOC	
A	At NUTS2, all of rent is apportioned using CoE (except for Cross-Border Income and OOIR which is single-site anyway).	None	Not considering mixed income to be multi-site due to its nature.	Not considering profits of partnerships to be multi-site due to its nature	ABS GVA less CoE	ABS GVA less CoE, BERD	At NUTS2, all of holding gains is apportioned using CoE.
B-E		CoE			ABS GVA less CoE, public sector emp	ABS GVA less CoE, BERD, onshore oil profits	
C		None			ABS GVA less CoE	ABS GVA less CoE, BERD	
F		None			None	ABS GVA less CoE, BERD	
G-I		CoE			ABS GVA less CoE, public sector emp	ABS GVA less CoE, BERD	
J		CoE			Public sector emp	ABS GVA less CoE, BERD	
K		CoE			CoE	CoE, BERD	
L		CoE			ABS GVA less CoE	ABS GVA less CoE, BERD	
M-N		CoE			Public sector emp	ABS GVA less CoE, BERD	
O-Q		CoE, BERD, army/navy/air force emp			Public sector emp	CoE, BERD	
R-U		CoE			ABS GVA less CoE, public sector emp	ABS GVA less CoE, BERD	

The results of the exercise are shown in the below.

<sup>3</sup> Based on the email of 1 July 2016 from ONS.

Share of GOS in total value added		Reference year: 2013				
		Industries (NACE Rev. 2; A*10)		Total GVA	GVA of MRE	GOS of MRE
		1	2	3	4	5
		MIO £	MIO £	MIO £	%	%
<b>National total A*10</b>		<b>1546914</b>	<b>726107</b>	<b>259715</b>	<b>46,9</b>	<b>16,8</b>
UKC1	Tees Valley and Durham	19602	9738	3418	49,7	17,4
UKC2	Northumberland and Tyne and Wear	26595	14084	4305	53,0	16,2
UKD1	Cumbria	10438	4895	1466	46,9	14,0
UKD3	Greater Manchester	55591	29124	9469	52,4	17,0
UKD4	Lancashire	27041	11795	3867	43,6	14,3
UKD6	Cheshire	24986	12531	4839	50,1	19,4
UKD7	Merseyside	27240	13259	4406	48,7	16,2
UKE1	East Yorkshire and Northern Lincolnshire	16903	7536	2064	44,6	12,2
UKE2	North Yorkshire	17528	7044	2488	40,2	14,2
UKE3	South Yorkshire	22849	10471	3019	45,8	13,2
UKE4	West Yorkshire	45813	21842	6875	47,7	15,0
UKF1	Derbyshire and Nottinghamshire	41403	20113	6347	48,6	15,3
UKF2	Leicestershire, Rutland and Northamptonshire	36989	17345	5895	46,9	15,9
UKF3	Lincolnshire	13127	5341	2002	40,7	15,2
UKG1	Herefordshire, Worcestershire and Warwickshire	28298	12575	4459	44,4	15,8
UKG2	Shropshire and Staffordshire	28952	12829	4227	44,3	14,6
UKG3	West Midlands	54145	28573	8275	52,8	15,3
UKH1	East Anglia	54041	21605	7623	40,0	14,1
UKH2	Bedfordshire and Hertfordshire	43740	20456	7403	46,8	16,9
UKH3	Essex	34030	13010	4135	38,2	12,2
UKI3	Inner London - West	139301	78724	30402	56,5	21,8
UKI4	Inner London - East	90791	43693	16153	48,1	17,8
UKI5	Outer London - East and North East	32044	13116	4166	40,9	13,0
UKI6	Outer London - South	26189	10398	3313	39,7	12,6
UKI7	Outer London - West and North West	52681	23279	7029	44,2	13,3
UKJ1	Berkshire, Buckinghamshire and Oxfordshire	76924	36830	13388	47,9	17,4
UKJ2	Surrey, East and West Sussex	71775	30567	10842	42,6	15,1
UKJ3	Hampshire and Isle of Wight	47898	22037	7764	46,0	16,2
UKJ4	Kent	34444	13458	4624	39,1	13,4
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area	59422	27558	9504	46,4	16,0
UKK2	Dorset and Somerset	25619	9841	3105	38,4	12,1
UKK3	Cornwall and Isles of Scilly	9405	3257	1208	34,6	12,8
UKK4	Devon	21949	8876	3033	40,4	13,8
UKL1	West Wales and The Valleys	29829	12875	4164	43,2	14,0
UKL2	East Wales	23236	11586	3809	49,9	16,4
UKM2	Eastern Scotland	44704	22527	7898	50,4	17,7
UKM3	South Western Scotland	46234	24315	8255	52,6	17,9
UKM5	North Eastern Scotland	17643	8535	3547	48,4	20,1
UKM6	Highlands and Islands	9555	4182	1686	43,8	17,6
UKN0	Northern Ireland	33537	1867	867	5,6	2,6
UKZ	Extra-Regio NUTS 2	24422	24422	18377	100,0	75,2

The meta data will be shown in the following table:

Meta data on indicators used for the regionalisation of GOS of multi-regional enterprises						
Country: United Kingdom						
Reference year: 2013						
Industries (NACE Rev. 2, A*10)	Sections	Sources from which the indicators are taken	Were there any changes in the indicators used for the multi-regionalisation of GOS of multi-regional enterprises?		Do you intend to change the indicators for the	
			If yes, please clarify.	If yes, when?	6	If yes, when?
1	2	3	4	5	6	7
Agriculture, forestry and fishing	A	ONS Annual Survey of Hours and Earnings (ASHE), ONS Business Register and Employment Survey (BRES), ONS Annual Business Survey (ABS), ONS Business Enterprise Research and Development (BERD)	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Mining and quarrying, etc.	B-E	ASHE, BRES; ABS; BERD; Scottish Government oil and gas Model	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source. Change to the treatment of oil and gas extraction using the Scottish Government oil and gas model.	2014	No	
Of which: Manufacturing	C	ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Construction	F	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Wholesale and retail trade; etc.	G-I	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Information and communication	J	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Financial and insurance activities	K	ASHE; BRES; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Real estate activities	L	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Professional, scientific and technical activities, etc.	M-N	ASHE; BRES; ABS; BERD; Ministry of Defence	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source. Change to Weapons Systems' treatment under ESA2010 - inclusion of Ministry of Defence as an indicator source.	2014	No	
Public administration and defence; compulsory social security, etc.	O-Q	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	
Arts, entertainment and recreation, etc.	R-U	ASHE; BRES; ABS; BERD	Change to treatment of Research and Development under ESA2010 - inclusion of BERD as an indicator source.	2014	No	

## 4. CONCLUSION

### 4.1 AN OVERVIEW

The questionnaire has been provided March 30 to eleven EU-countries with the request to complete the questionnaire before July 1, 2016. The countries involved in the project are: AT, BE, CZ, DE, ES, IT, NL, PL, PT, SK and UK. Because AT considered providing quantitative information about GOS of multi-regional enterprises, AT were given room until November for the exercise.

A summary of the results is provided in ANNEX 4.

NL, PT and UK provided data on the share of GVA and GOS of multi-regional enterprises in total GVA. The main results were:

- NL: The share of GVA of multi-regional enterprises at NUTS-2 level varies between 37 and 60% of total GVA. Share of GOS of multi-regional enterprises at NUTS-2 level varies between 14 and 42% of total GVA.
- PT: The share of GVA of multi-regional enterprises at NUTS-2 level varies between 15 and 38% of total GVA. Share of GOS of multi-regional enterprises at NUTS-2 level varies between 0 and 18% of total GVA.
- UK: The share of GVA of multi-regional enterprises at NUTS-2 level varies between 35 and 57% of total GVA. Share of GOS of multi-regional enterprises at NUTS-2 level varies between 12 and 22% of total GVA.

The other eight countries provided qualitative information about the method used. Their main problem is that delivery of GOS (B.2g) is not compulsory in the ESA 2010 transmission programme of data and not part of the compilation system. And the main reported problem was, that it is difficult to regionalise other taxes less subsidies on production for multi-regional enterprises. So, it is extra work for which there was no room or difficult to compile because of the method used.

My comments: Though at NUTS-2 level, GVA (B.1g) and compensation of employees (D.1) at A\*10 is compulsory. This implies that GOS (B.2g) can be approached by the balance B.1g-D.1. It has still to be corrected by other taxes less subsidies on production of multi-regional enterprises. At this stage, it should be mentioned that other taxes less subsidies (D.29-D.39) is generally very small compared to GVA. So, one could decide not correcting the balance B.1g-D.1, because it barely would influence the result.

The countries that compiled GOS for multi-regional enterprises, generally made a regional estimate for GVA (B.1g) and compensation of employees (D.1) of the multi-regional enterprises based on the regional distribution of wages and salaries, compensation of employees or the number of employees. GOS of multi-regional enterprises was compiled as a balance of B.1g and D.1, corrected for other taxes less subsidies on production.

The countries that provided qualitative information generally applied the same method in which they basically used the regional distribution of employment indicators.

A summary overview will be given in the table below.

Only Portugal and United Kingdom provided the meta data table. Because of this no general conclusions can be drawn about the future plans for the indicators to be used.

Summary of qualitative info for regional GVA of MRE

Method used	AT	BE	CZ	DE	ES	IT	PL	SK
<b>Indicators used for regional GVA of MRE</b>								
Wages and salaries of the local unit	X	X	-					
Comp. of empl. or number of employees per local unit	X	X	X				X	X
Administrative data at local level							X	
<b>Regional GOS of MRE</b>								
To be estimated as a balance								
Not compiled explicitly	X	X	-	X	X	X	X	-
<b>Germany</b>								
<b>Compilation at NUTS 1 and NUTS 3 (prod. Method)</b>								
Wages and salaries of the local unit								
Number of employees per local unit				X				
<b>Compilation at NUTS 1 and NUTS 3 (income method)</b>								
Wages and salaries of the local unit								
Number of employees per local unit				X				
Turnover (based on number of employees per local unit)				X				
<b>Spain</b>								
GVA at local unit level available					X			
<b>Italy</b>								
Micro based info on GVA						X		

## 4.2 ANSWERING THE MAIN QUESTIONS

- a. In which regions and industries is the gross operating surplus of multi-regional enterprises a large share of total gross value added?

Three countries have provided quantitative data on the regional share of GVA and GOS in total GVA. It might be expected that the capital cities would have the largest share for both GVA and GOS. However, regarding the results for the Netherlands and Portugal, this cannot be stated as a general rule. It mainly depends on the presence of multi-regional enterprises with local units in a NUTS 2 region with a considerable GVA. For instance the extraction of natural gas in Groningen by a multi-regional enterprise in the Netherlands creates a considerable share of GVA compared to the total GVA of all industries in Groningen, while the share of compensation of employees is low, resulting in a considerable share of GOS. The residence of such units is generally not in the capital cities.

Regarding industries with a high share of GOS of multi-regional enterprises in GVA can be found in the banking and insurance activities and information and communication activities.

- b. To what extent will the different types of regionalisation have a significant impact on overall regional distribution of GVA?

We have seen from the inventories that GOS is generally estimated as a balance of GVA and compensation of employees, corrected for other taxes less subsidies on production. The general approach is that GVA of multi-regional enterprises will be allocated to the local units with a regional key, because both consumption of fixed capital (CFC) and net operating surplus are practically or conceptually difficult to regionalise.

This hampers the use of the income method in which compensation of employees, CFC, net operating surplus and other taxes less subsidies on production add up to GVA of the local unit. That is why a regional key has to be used is in almost all cases based on employment indicators (number of employees, wages and salaries or compensation of employees).

The main problem of this approach is that GVA of a capital-intensive production unit will be under-estimated when only a labour based regional key will be used and the GVA of the headquarter will be over-estimated when the biggest share of employees resides there.

In case of the extraction of gas, generally the output of quantities is available, by which a more accurate estimate of output and GVA can be made when prices are available. However, this type of information can only be used when the quantity output is homogeneous.

- c. What is the methodologically most robust approach to regionalising gross operating surplus for multi-regional enterprises?

The results of the exercise show that there are practical and conceptual problems by which there remain few possibilities for the compilation of regional GVA and GOS for multi-regional enterprises. For that reason, focus in the current situation on the harmonisation of the regional keys for regionalising GVA of multi-regional enterprises is the highest reachable goal<sup>4</sup>. The study shows that the regional indicators used for the multi-regionalisation are generally based on employment related indicators which, according to the manual, is a B-method. Which means that this is an acceptable method, though not entirely satisfactory.

- d. Is the current practice sufficiently documented and harmonised or it should be improved?

The study of the inventories and compilation tables (see section 2) showed shortcomings about the treatment of multi-regional enterprises. Sometimes, it has been mentioned that GVA of multi-regional enterprises is zero, while the inventory mentioned the treatment of multi-regional enterprises.

No separate paragraph about multi-regional enterprises has been mentioned in the inventories.

In the annex a draft proposal will be included for inventories according to the activity and sector by activity approach and a compilation table.

## **5. RECOMMENDATIONS**

1. Because of its importance, it is recommended to devote separate attention on multi-regional enterprises in the new inventory on regional accounts methods used and the compilation table.
2. As well the inventories as the compilation tables should be more precise in reflecting the method and the kind of data used. A reference for this is the national GNI inventory and process table and reference table.
3. It is recommended to write instructions for completing the compilation table and instructions for the regional accounts inventory.
4. It is recommended to focus on regional GVA of multi-regional enterprises instead of GOS of these enterprises.
5. Compensation of employees is recommended to be a key variable for regionalisation of multi-regional enterprises.
6. Because the current general applied method for regionalisation of GVA of multi-regional enterprises is not satisfactory, it is recommended to discuss possibilities of regionalising net operating surplus (by convention with compensation of employees) and CFC (by physical

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<sup>4</sup> See the Eurostat 'Manual on regional accounts methods', 2013 edition, p. 50-52.

indicators). It regards the compilation of regional GVA for multi-regional enterprises and the use of the income method for non-market and market activities.

7. Because Germany uses a sequence of compiling firstly NUTS 1 data and after that NUTS 3 data, it is recommended to split the compilation table for the NUTS 1 and the NUTS 3 compilation.

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