



Regional (NUTS 3) Gross Value Added Inventory

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Chapter 1: Overview of organisation, methodology and sources

1.1 Introduction

The Regional Gross Value Added (GVA) Inventory provides a detailed explanation of the sources and methods used for estimating GVA in MALTA at NUTS 3 level. It is the basis for the assessment of the quality and exhaustiveness of regional GVA data by Eurostat and their compliance with the European System of National and Regional Accounts (ESA 2010). The Inventory is a reference document that is kept up-to-date to reflect the latest methodology in place.

The inventory is in accordance with ESA 2010 which is an internationally compatible EU accounting framework for a systematic and detailed description of an economy. Thus, this regional GVA inventory ensures transparency for users and enhances comparability between different regions within the European Union.

1.2 Organisation of the statistical process for compiling regional GVA

The Malta Statistics Authority (MSA) was established by Act XXIV of 2000, which came into force on 1 March 2001. It was set up as an independent authority distinct from the Government of the day to take over the functions previously done by a Government department. The NSO was formerly known as the Central Office of Statistics. The Authority exercises a regulatory function regarding resources relating to the collection, compilation and publishing of official statistics, and to make provision with respect to matters ancillary thereto or connected therewith.

Its functions are defined in Section 7 of the said Act as follows:

- a) To examine and submit, for the approval of the Minister, the business plan and financial estimates drawn up by the Director General for the administration of the National Statistics Office;
- b) To regulate and to generally supervise the production of official statistics in accordance with international requirements and standards;
- c) To discuss and advise on statistical matters, including methodologies, relating to the collection, compilation and dissemination of statistics;
- d) To establish priorities in responding to the demand for official statistics;
- e) To liaise between the office and other public bodies concerning the supply of data and the coordination of activities with statistical implications;
- f) To publish the business plan after its approval by the Minister of Finance;
- g) To disseminate the knowledge of official statistics;
- h) To consider and comment on, where necessary, the yearly report submitted by the Director General on the work of the National Statistics Office as required by article 9(5)(g).

The Authority has a distinct legal framework, and the legal and judicial representation is vested in the Chairperson. The NSO is the executive arm of the Authority which has the Director General as its head and has the legal representation of it. The Malta Statistics Authority Act, 2000 makes provisions for this position in Article 9.

The NSO is structured in four directorates: Economic and Business Statistics, Social and Regional Statistics, Data Capability and Corporate Services. The first two directorates are directly responsible for statistical subject-matter domains. The Data Capability directorate is tasked with assisting domain units in data management and methodological issues whilst helping the office reach a higher degree of efficiency in terms of processes and IT infrastructure. The Corporate Services directorate provides lateral support to all units for matters related to human resources, finances and risk compliance. Two units – External Cooperation and Dissemination – fall under the direct responsibility of the Director General.

The National Accounts Unit within the Economic and Business Statistics Directorate is responsible for the compilation of the ESA 2010 non-financial accounts for the non-financial corporations, financial corporations, households and non-profit institutions serving households (NPISHs). Compilation of annual and quarterly national accounts data are done simultaneously within the same unit such that annual data are equal to the summation of the four quarters. However, the full sequence of accounts for the general government sector is compiled by the Public Finance Unit which is also under the remit of the Economic and Business Statistics Directorate.

The Regional and Geospatial Statistics Unit, which falls under the remit of the Social and Regional Statistics Directorate, is responsible for the compilation of regional GVA and Gross Domestic Product (GDP). As at the end of December 2017, the Regional and Geospatial Statistics Unit consisted of the head of unit and five full-time statisticians. The regional GVA and GDP are mainly compiled by one statistician with the support of the National Accounts and Public Finance Units in terms of the provision of statistical data. Data on regional GVA and GDP are published online once a year in December at NACE A*10/11 industry classification, at t+12 months.

1.3 Overview of the methodology of regional GVA compilation

Regional accounts are a regional specification of the national accounts. Thus, these accounts are based on the same concepts and classifications used for the national accounts. Regional GVA can be defined from two perspectives: the production approach and the income approach:

- i. **Production Approach**
Regional GVA at basic prices by industry is equal to the difference between output (at basic prices) and intermediate consumption (at purchasers' prices).
- ii. **Income Approach**
Regional GVA at basic prices by industry is equal to the sum of other taxes less subsidies on production, wages and salaries, employers' social contributions, consumption of fixed capital and net operating surplus.

Regional GDP can be defined as regional GVA plus taxes on products less subsidies on products.

The National Accounts Unit compiles the GDP at current prices from the production, income and expenditure approaches at NUTS 1 and 2 levels. However, the production approach is considered to be the main estimation method for compiling GDP as it is supported by the most reliable sources. The Regional and Geospatial Statistics unit publishes annual regional accounts, at NUTS 3 level, based on the production approach which is compiled in accordance with the European System of Accounts - ESA 2010, Regulation (EU) No. 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts.

The GVA of the general government sector is computed directly based on the sum of costs while a top-down approach is used for the sectors that produce market output. The figures of output, intermediate consumption and GVA of the latter sectors at NUTS 1 and 2 levels are allocated to a region (NUTS 3 level) by using the indicator of full-time equivalent labour demand (employment in jobs) as per the location of the producer unit in accordance with the 'residence principle'. The industry classification is based on NACE Revision 2.

The reference area for national accounts is the total economy of a country which can be broken down into regions. The Nomenclature of Territorial Units for Statistics (NUTS) classification provides a single, uniform breakdown of the economic territory of the Member States of the EU and which is the territorial classification used for the compilation of regional accounts. The economic territory of a country can be divided into regional territories and the extra-regio territory. The former consists of that part of the economic territory of a country that is directly assigned to a region, including any free zones and bonded warehouses. The latter is made up of parts of the economic territory of a country which cannot be attached directly to a single region, including amongst others the national air-space, territorial exclaves and deposits of oil in international waters worked by resident units. Furthermore, the economic territory excludes any parts of the Maltese territory used by the governments of other countries such as embassies and institutions of the European Union. For the purpose of regional accounts, MALTA is divided as follows:

	NUTS 0	NUTS 1	NUTS 2	NUTS 3
MALTA	MT	MT0	MT00	
Malta				MT001
Gozo and Comino				MT002
Extra-regio		MTZ	MTZZ	MTZZZ

The NSO does not compile input-output and supply-use tables for regional accounts.

1.4 Main sources used for the compilation of regional GVA

The Gross National Income Inventory MALTA (NSO, 2015)¹ provides a detailed explanation of the sources and methods used for compiling GVA and GDP at NUTS 1 and 2 levels. The top-down method is used to regionalise the national GVA of the sectors that produce market output at NUTS 3 level by using the regional distribution of full-time equivalent labour demand (employment in jobs) as per the location of the producer unit based on employment data provided by Jobsplus and an exercise carried out by the Regional and Geospatial Statistics Unit to determine the number of employees employed with headquarter companies and working in the region of Gozo and Comino. Concurrently, the GVA of the general government sector and of the extra-regio territory are computed directly based on the sum of costs whereby the data is derived from the Departmental Accounting System, Financial Data Reporting System and the Treasury's Financial Statements.

¹https://nso.gov.mt/en/nso/Sources_and_Methods/Unit_A1/National_Accounts/Documents/GNI_Inventory.pdf

Chapter 2: Release and publication timetable, revision policy and access for the public

2.1 Timetable for release and publication of provisional and final estimates

Regional GVA and GDP are published online once a year in December at NACE A*10/11 industry classification, at t+12 months, following the publication of the news release of the national GVA and GDP. In order to ensure coherence with national GVA and GDP data, the regional accounts have the same-cut off date and open years as the national accounts data that is published in early December. GVA at basic prices, GDP at market prices, employment by place of work at NACE A*10/11 industry classification and population data at NUTS 3 level are first published online on the NSO website and are then transmitted to Eurostat.

The publication date of the Regional GDP news release is announced in the official news release calendar three months in advance on the website of NSO. The preliminary data for year t are published at t+12 months. The data is considered final once the supply and use tables for national accounts data are compiled and finalised.

2.2 Policy on benchmark revisions

Revisions to statistical information are an essential bridge between the timeliness and accuracy of data. A statistical system that does not encompass revisions would soon become irrelevant, as it would not be responsive to the availability of updated data, improved methodologies and developments in the socio-economic spheres. This is especially the case in complex statistical compilations such as the national and regional accounts, which would require inputs from a multitude of sources and substantial computations. Revisions reflect the availability of new information as well as efforts to improve processes and methodologies. A revision policy organises and limits the number of periods for which data may be revised in terms of various frequencies. The NSO has an internal revision policy which is not yet publicly available to users.

Finalised and already published data can be revised only when the National Accounts Unit carries out benchmark revisions due to internal methodological reviews, development in data sources and changes in the Business Register classification and international standards. Thus, whenever national accounts data are revised, regional accounts data are revised accordingly in order to reconcile with national accounts data. Apart from revisions of the national accounts, a benchmark revision of the regional accounts can also be undertaken to revise the regional distribution in view of the availability of new regional data sources, changes in methodology and updates of international regulations.

Three benchmark revisions were undertaken that affected both the national and regional accounts. These were due to the implementation of NACE Revision 2 industry classification in the years 2011, 2012 and the transition from ESA 1995 to ESA 2010 in 2014. Furthermore, a benchmark revision of

the regional accounts was undertaken in 2016 whereby revisions in the regional allocations were effected for the period 2010 to 2015. Adjustments were effected in the regional (NUTS 3) GVA allocations, aligning estimates in accordance to the residence principle, i.e. allocating the GVA to the region where the producer unit is resident. The estimation approach remained unchanged; direct computation for general government sector GVA based on the sum of costs and a top-down approach for the sectors that produce market output. Adjustments in the regional GVA which were strictly attributable to the sectors that produce market output were not a result of a change in methodology but from improvements in the regional employment definitions; reflecting better coherence with the 'residence principle' (as per location of producer unit). The revisions were linked to improved regional (NUTS 3) employment data published in the news release *Regional Labour Supply by Place of Residence and Work: 2010-2015 – NR180/2016*².

2.3 Comparability over time

Following the benchmark revision of regional accounts undertaken in December 2016 from period 2010-2015, the time series was then restored retrospectively till year 2000 in December 2017, hence eliminating the break in series. Accordingly, the regional accounts are comparable and coherent for all the time series available as the methodology and data sources used are consistent for the whole time period of 2000-2016.

2.4 Transmission to international institutions other than Eurostat

There are no direct transmissions to international institutions other than Eurostat.

2.5 Accessibility for the public

A regular news release is published with annual regional GDP data from the output approach which is available online for free on the NSO website:

https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_02/Regional_and_Geospatial_Statistics/Pages/Regional-Gross-Domestic-Product.aspx

Regional GDP data is also published in the *Regional Statistics MALTA | 2017 edition* annual publication which can be accessed for free on the NSO website:

https://nso.gov.mt/en/publicatons/Publications_by_Unit/Pages/02-Regional-and-Geospatial-Statistics.aspx

²https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_02/Regional_and_Geospatial_Statistics/Documents/2016/News2016_180.pdf

Data on the following variables are published:

- Gross Value Added at basic prices (B.1g) by industry (NUTS 3)
- Gross Domestic Product at market prices (B.1*g) (NUTS 3)
- Population (NUTS 3)
- Employed persons by industry and place of work (NUTS 3)

The following graphical analysis is published:

- Regional contribution to GVA (B.1g) by industry A*10/11 (NUTS 3)
- Percentage distribution of regional GVA (B.1g) by industry A*10/11 (NUTS 3)
- Percentage industry contribution to GVA of Malta region A*10
- Percentage industry contribution to GVA of Gozo and Comino region A*10
- Regional GDP per capita at market prices (NUTS 3)

With respect to the data submitted to Eurostat, users are advised to use the official website of Eurostat: <http://ec.europa.eu/eurostat/data/database>.

Even though the above mentioned variables are compiled at A*88 industry divisions, data is published at A*10/11 industry level.

2.6 Policy for Metadata

The ESQRS standard is used for metadata and quality reporting with respect to regional accounts. In addition, each publication of regional GVA and GDP data is supplemented with the methodological notes which provide an explanation of the definitions, concepts and methodology used to compile regional accounts. The concepts and definitions used for regional accounts are identical to those used in the national accounts.

Chapter 3: Methodology for the calculation of the Regional GVA

3.1 Introduction

This chapter provides an overview of the methodological principles and sources used to compile regional GVA from the production approach perspective. Section 3.2 describes the processes, sources and methods used to compile regional accounts and which are applicable to all industries.

3.2 Principles applicable to all industries

The Manual on regional accounts methods (Eurostat, 2013b, p.34-35) specifies that the methods used for estimating GVA in current and constant prices include: (i) bottom-up, (ii) top-down and (iii) mixed methods. In the case of Malta, the top-down method is used to estimate the GVA of the sectors that produce market output at NUTS 3 level. This involves the distribution of national figures from national accounts by using regional indicators which closely reflect the variables to be estimated. This method is considered a top-down method as the aggregate figure is allocated to a region and not to the local Kind-of-Activity Unit (KAU) or local unit. However, the notion of local KAU or local unit is still required in order to produce a correct regional distribution.

The key indicator that is used in regional accounts is the number of full-time equivalent labour demand (employment in jobs). In using this indicator, it is assumed that there are no regional differences in the factors that influence the relationship between the employment indicator used and the GVA (Eurostat, 2013b, p.36). As highlighted in the Manual on Regional Accounts Methods (Eurostat, 2013b, p.38), the top-down method is an accepted methodology especially in cases where no reliable information at KAU level exists and in such case the emphasis is on the adequacy of the regional indicators used.

The main source for employment data used to determine the number of full-time equivalent jobs is Jobsplus, the official employment agency in Malta. It provides the Regional and Geospatial Statistics Unit with private sector employment data (full-time, part-time primary and part-time secondary) split according to the locality (business address) of the employer, as referred to as producer unit. In cases where the employer is based in the region of Gozo and Comino, it is assumed that all employees working for this employer are working in the Gozo and Comino region. If an employer is based solely in the Malta region, it is assumed that the employees working for such employer are stationed in the region of Malta.

Extensive work is carried out annually with respect to enterprises that perform their business through branches in the region of Gozo and Comino while their headquarters are registered in the region of Malta (e.g. financial institutions, telecommunications companies and private security companies). Considering that in such cases the employer addresses is the headquarter address, the Regional and Geospatial Statistics Unit aims to establish the actual place of work, i.e. whether the employee is actually performing duties in Malta region or in Gozo and Comino region. In view of this,

an annual exercise is carried out whereby headquarter companies with a presence in the region of Gozo and Comino and whose employment of Gozo and Comino residents is equal to and greater than five, are contacted directly to provide the exact place of work of their full-time and part-time employees, whether being employed in Malta region or in the Gozo and Comino region. Gozo resident employees employed with small undertakings which have outlet/s both in Malta and Gozo and whose employment of Gozo and Comino resident employees is less than five, are assumed to work in the region of Gozo and Comino.

Employment in Malta region is taken as a residual, the difference between total full-time/part-time primary employment in MALTA and full-time/part-time primary employment in Gozo and Comino region. Jobsplus also provides data on secondary part-time employment which is considered to be in line with the applied definition of the actual location of the producer unit, thus assuming that the secondary part-time work is performed within same region of residence. Following the collection of all data and the determination of the actual place of work of employees employed with headquarter companies; the regional distribution of the number of full-time equivalent employment in Malta and Gozo and Comino regions is determined.

The indicator of full-time equivalent of jobs, which is available at A*88 industry level, is used to apportion the national estimates of output, intermediate consumption and GVA of the sectors that produce market output to the regions of Malta and Gozo and Comino, accordingly. This method is used for all industries except for the GVA of the general government sector. The latter is based on Public Finance Unit data; computed directly on the sum of costs method, that is, adding up its intermediate consumption, compensation of employees and consumption of fixed capital at NUTS 3 level. This data is available at A*88 industry level classification.

3.3 Available sources and information

The main source of information used to compile regional accounts is administrative data on employment, thus treatment for survey non-response is not relevant for the context of regional accounts in Malta. As highlighted above, the register of employment data is mainly provided by Jobsplus, which gives a detailed overview of the number of jobs in both private and public sectors at enterprise level by region. In Malta, both full-time and part-time employees must be registered with Jobsplus by the employer upon engagement. This also applies to self-employed persons on both full-time and part-time basis.

In order to determine the level of employment at local KAU in the region of Gozo and Comino, as reiterated above, an annual exercise is carried out whereby headquarter companies with a presence in the region of Gozo and Comino are contacted directly to provide the exact place of work of their full-time and part-time employees, whether being employed in Malta region or in the Gozo and Comino region. This exercise is used to derive employment data by place of work, that is, where the producer unit is resident and hence used for the allocation of national data across the two regions.

Furthermore, data derived from the Departmental Accounting System, Financial Data Reporting System and the Treasury's Financial Statements are used to determine the GVA of the general government sector and of the extra-regio territory based on the sum of costs.

3.4 Use of benchmarks and extrapolations

The above-mentioned headquarter exercise which is conducted annually by the Regional and Geospatial Statistics Unit commenced in 2015. To determine the employment level at local KAU till year 2000, it was considered impractical to contact the headquarter companies which had a presence in the region of Gozo and Comino during the years of 2000 to 2014 and whose employment of Gozo and Comino residents was equal to and greater than 5. In view of this, the application of static weights retrospectively to apportion the employment data between regions for each respective headquarter enterprise was applied. This was considered the best method in view of the lack of alternative reliable regional indicators at two-digit NACE Rev. 2 industry classification. Furthermore, it is considered as normal practice in the field of national accounts to use constant ratios to back cast official data (United Nations, 2014, p.7).

3.5 Treatment of ancillary activities

ESA 2010 defines an ancillary activity as an activity whose output is intended for use within an enterprise. Thus, it is a supporting activity undertaken within an enterprise in order to enable the principal or secondary activities of local KAUs to be carried out (Eurostat, 2013a, p.55). According to ESA 2010, ancillary activities must be integrated with the local KAU that they serve and are thus, not treated as distinct entities or separately from the principal or secondary activities that they supply (Eurostat, 2013a, p.55). However, such activities may be performed in different locations other than the region of the local KAU that they supply. In view of this, allocation of ancillary activities have to be done according to the region where they are based (Eurostat, 2013a, p.55).

The unit of observation that the Regional and Geospatial Statistics Unit takes into account is the local kind-of-activity unit. In consideration of this, as reiterated in Section 3.3, employment data is determined at local KAU in the region of Gozo and Comino by firstly establishing the presence of any branches of headquarter companies in this region. Subsequently, an annual exercise is carried out whereby these headquarter companies are contacted directly to provide the exact place of work of their full-time and part-time employees, whether being employed in Malta region or in the Gozo and Comino region. This exercise is used to augment employment data by place of work and the full-time equivalent indicator which is then used in the allocation of national data to the two regions.

3.6 Treatment of the Extra-regio

The extra-regio territory comprises parts of the economic territory of MALTA which cannot be allocated to a single region. This includes amongst others the national air-space, territorial exclaves

and deposits of oil in international waters worked by resident units. For the economic territory of MALTA, the extra-regio mainly consists of embassies and permanent representations located across the globe. Compilation of the GVA of the extra-regio is in line with ESA 2010 and is compiled by the Public Finance Unit. Its valuation is based on the sum of costs which mainly include employers' social contributions, wages and salaries and consumption of fixed capital, if any. The data sources used to compute the GVA of the extra-regio include the DAS and the Treasury's Financial Statements. Considering that the extra-regio forms part of General Government, the GVA of the extra-regio is deducted from NACE O - *Public administration and defence, compulsory social security* to avoid double-counting. In 2016, the GVA of the extra-regio was of just 0.16 per cent of the total GVA.

3.7 Approach to exhaustiveness

Adjustments undertaken to ensure exhaustiveness are dealt with only at national level. Thus, regional allocation of GVA implicitly implies regional allocation of the adjustments for exhaustiveness. The Gross National Income Inventory MALTA (NSO, 2015, p.451-503) provides a detailed explanation of the allowances for exhaustiveness. In view of the fact that the top-down method is used in allocating the GVA of the sectors that produce market output to the regions, the adjustments receive the same regional distribution as GVA per industry. On a national level, exhaustiveness adjustments in the production approach amount to 3.7 per cent of total GVA at basic prices (NSO, 2015, p.458).

3.8 Calculation of FISIM by user industries

Financial intermediation services indirectly measured (FISIM) refers to the provision of services by financial intermediaries, mainly banks, for which they do not explicitly levy charges in the form of fees and commissions. For depositors, these services include the management of current accounts, the transmission of bank statements and fund transfers between accounts. For borrowers, these services comprise of financial advice, monitoring of creditworthiness and smoothing over time of repayments. The bank charges higher rates of interest to borrowers and pays lower rates of interest to depositors. FISIM is, thus, the difference between the reference rate and the rate actually paid to depositors and charged to borrowers. The reference rate of interest is defined as the rate at which both lenders and borrowers would reach a deal. Hence, the total FISIM is the sum of the two implicit fees paid by the borrower and the lender. (Eurostat, 2013a, p.329)

The Gross National Income Inventory MALTA (NSO, 2015, p.159-172) details the calculation of FISIM output for core and non-core banks in the domestic market. It also provides a detailed explanation of the allocation of FISIM among users (NSO, 2015, p.172-173). The national totals of intermediate consumption as provided by the National Accounts Unit include FISIM. Thus, the regional estimates of intermediate consumption automatically also, include FISIM.

3.9 Adjustments for commuting

In general, GVA is allocated to the regions according to where the production unit is resident. The employment data used in allocating regional GVA takes into account those persons who effectively work in the regions of Malta and Gozo and Comino, respectively, irrespective of their region of residence. In addition, as reiterated in Sections 3.3 and 3.5 above, employment data is determined at local KAU in the region of Gozo and Comino. Thus, in line with the residency principle, no adjustments for commuting are needed, except for the headquarter exercise explained in Sections 3.3 and 3.5 to determine employment at local KAU.

In view of the residency principle, commuters contribute to the GVA in the region in which the establishment they work for is resident. This affects the interpretation of GDP per capita as the latter appears relatively high in the region with net commuter inflows and relatively low in the region with net commuter outflows.

3.10 Transition from GVA to GDP

GDP is valued at market prices by adding taxes less subsidies on products, to GVA at basic prices. Taxes and subsidies on products are allocated between regions on the basis of the relative size of each region's GVA out of national GVA. Thus, regional GDP at market prices is valued by adding regional taxes less regional subsidies on products, to regional GVA at basic prices.

3.11 Specific methods and sources for compiling regional GVA

Sections 3.2 and 3.3 provide an explanation of the methods and sources used for compiling regional GVA.

3.12 Regional GVA at constant prices and regional growth rates

Regional GDP and GVA in constant prices are not compiled.

Chapter 4: Self-assessment of the methodology for compilation of regional GVA

4.1 Self-assessment of the methodology for compilation of regional GVA

The top-down methodology used for compiling regional GVA of the sectors that produce market output is considered as an adequate methodology due to the following reasons:

- The methodology is in accordance with the European System of Accounts - ESA 2010, Regulation (EU) No. 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts;
- There is lack of reliable regional information at KAU to produce regional estimates bottom-up at each industry division;
- Eurostat (2013b, p.38) specifies that the top-down methodology is an accepted methodology when there is no reliable regional information at KAU and thus the emphasis is on the suitability of the regional indicators used;
- The indicator of full-time equivalent of labour demand (employment in jobs) as per the location of the producer unit which is in accordance with the 'residence principle' is considered reliable and representative at regional level as it is based on administrative records;
- The employment data is available at A*88 industry divisions and NUTS 3 level. Thus, this permits the national values of output, intermediate consumption and GVA to be apportioned between regions at each industry division;
- There is no break-in series in the indicator of full-time equivalent labour demand (employment in jobs) at regional and industry level; and
- The indicator provides a rather realistic assessment of each region's economy.

The bottom-up methodology used to estimate the regional GVA of the general government sector is considered the most plausible method as it measures the variables directly at each industry level.

Since the regional accounts are a regional specification of the corresponding national accounts, reconciliation with national accounts is always ensured. Like the national accounts, regional accounts are also exhaustive which means that all resident statistical units are covered. Furthermore, quality of the regional accounting calculations is continuously checked during the calculation process so that possible shortcomings or errors can be detected and eliminated. Major elements of this quality assurance procedure include checks for completeness and plausibility, comparison of the source statistics used and reconciliation with national accounting results. Once the calculations are finalised, the data is then checked by comparing past trends, growth rates and published data. In addition, a visual analysis of the data for the whole time series being published is also undertaken in order to detect any irregularities. In line with the practice of the National Accounts unit, GVA is compared to past releases at 2-digit NACE level with any significant revision being verified with source data and documented. Furthermore, the intermediate consumption to

output ratio for consecutive years is analysed at 2-digit NACE level. This is typically consistent across years and thus an increase of +/-2% is generally verified with source data.

4.2 Plans for further improvement

Although the top-down methodology used to compile the regional GVA of the sectors that produce market output is considered as an adequate methodology, there is room for further improvement. It is the aim of the Regional and Geospatial Statistics Unit to adopt a mixed approach rather than relying exclusively on the top-down approach. In this respect, a thorough analysis will be undertaken to determine the extent of data availability for enterprises and KAUs within each industry in the region of Gozo and Comino. If such data is available and which is both reliable and comprehensive, a bottom-up approach will be used to estimate the required variables of output, intermediate consumption and GVA for these enterprises and KAUs.

For the remaining enterprises and KAUs within the industry for which there is lack of data, the variables will be estimated top-down by using the most appropriate regional indicators. The regional GVA of each industry of the Malta region will be taken as the residual between the national GVA and the GVA of the region of Gozo and Comino. Reconciliation with national accounts totals will be invariably ensured since regional accounts are a regional specification of the corresponding national accounts.

In addition, the Regional and Geospatial Statistics Unit has pushed forward the recommendation of having a better representation of the Gozo and Comino region in all the surveys conducted by the NSO. This will lead to a wider array of representative and reliable indicators, other than the full-time equivalent indicator, to use in apportioning the national figures of output, intermediate consumption and GVA when using the top-down approach.

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