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Tourism Satellite Accounts in the European Union

Volume 4:

Possibilities to obtain more up-to-date TSA key figures

2009 edition

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Preface

Tourism is an important part of Europe's economic, social and cultural activity. Council Directive 95/57/EC of 23 November 1995 on the collection of statistical information in the field of tourism provided for the establishment of an information system on tourism statistics at Community level. The Directive has therefore enabled the regular production of harmonised statistics on the capacity and occupancy of tourist accommodation establishments, and on tourism demand. Statistics in this field are used to monitor tourism-specific policies, as well as the wider context of regional policy and sustainable development.

A Tourism Satellite Account (TSA) provides an economic measure of the importance of tourism in terms of expenditures, GDP and employment for a given country. It integrates in a single format data about the supply and use of tourism-related goods and services, and it provides a summary measure of the contribution tourism makes to production and employment. It permits a comparison of tourism with other industries since the concepts and methods used are based on the System of National Accounts.

In March 2000, the United Nations Statistical Commission adopted the common conceptual framework for the compilation of Tourism Satellite Accounts (TSA) jointly elaborated by UNWTO, OECD and EUROSTAT: the *Tourism Satellite Account - Recommended Methodological Framework (TSA-RMF)*. Two years later, EUROSTAT published the *European Implementation Manual on Tourism Satellite Accounts (EIM)*, aiming at providing guidelines on how to implement TSA, with concrete reference to the harmonised statistics available in the European Statistical System, in particular in the domain of tourism statistics.

In the subsequent years, the Directorate-General Enterprise and Industry (DG ENTR) of the European Commission offered grants to the Member States to support feasibility studies and/or the actual implementation of TSA. These projects have fostered the work on TSA in most Member States, however, the state of the exercise and the level of harmonisation differs largely from country to country.

As an answer to this observation, EUROSTAT launched a project which ran in the period 2008-2009 with two main objectives. On the one hand, to make a comparative assessment of the methodologies applied and of the results of the earlier national projects. On the other, to offer a forum for the collection and the exchange of best practices for TSA compilation through multi-country workshops, individual technical assistance missions to Member States and a *cookbook* discussing good practices for the compilation of TSA.

The key deliverables of the project are published in a set of 4 volumes in the EUROSTAT series "Methodologies and Working Papers" under the heading *Tourism Satellite Accounts in the European Union*.

This fourth volume Possibilities to obtain more up-to-date TSA key figures look into the possible approaches to produce a set of key figures which can be used for an intermediate, short-term update of the basic TSA information.

This publication was prepared in collaboration with ICON-INSTITUT Public Sector GmbH and includes contributions by the following TSA experts: Gerd Ahlert, Teresa Hilario-Chavez, Rafael Roig and Egon Smeral. The views expressed in this volume are in the first place those of the authors and do not necessarily reflect the official views of the European Commission (Eurostat).

Michail Skaliotis, Head of Unit "Information society and tourism statistics"

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List of abbreviations and acronyms

BoP	Balance of Payments
CGE	Computable General Equilibrium Model
COICOP	Classification of Individual Consumption by Purpose
COFOG	Classification of the Functions of the Government
CPA	Classification by Products of Activity
CPC	Central Product Classification
DTE	Total domestic tourism expenditure
EC	European Commission
ESA	European System of Accounts
EU	European Union
FISIM	Financial Intermediation Services Indirectly Measured
FTE	Full Time Equivalents
GFCF	Gross Fixed Capital Formation
GP	Total output
GPTI	Output resp. production in the tourism industries
GVA	Gross Value Added
HBS	Household Budget Survey
HFC	Household Final Consumption
HFCE	Household Final Consumption Expenditure
IC	Intermediate Consumption
ILO	International Labour Organisation
IOA	Input-Output Accounts
IOT	Input-Output Tables
IRTS	International Recommendations on Tourism Statistics
ISIC	International Standard Industrial Classification
ITC	Total internal tourism consumption
ITCc	Total internal tourism consumption in cash
ITE	Total inbound tourism expenditure
m&r	maintenance & repair
NA	National Accounts
NACE	Nomenclature d'activité de la Communauté Européenne
NPISH	Non Profit Institutions Serving Households
OECD	Organisation for Economic Cooperation and Development
PTSA	Portuguese Tourism Satellite Account
SBS	Structural Business Surveys
SNA	System of National Accounts
SUT	Supply Use Tables
TA	Travel Agencies
TBoP	Tourism Balance of Payments
TCA	Tourism Characteristic Activities
TCP	Tourisms Characteristic Products
TGDP	Tourism Gross Domestic Product
TGVA	Tourism Gross Value Added
TO	Tour Operators

TSA	Tourism Satellite Accounts
TSA-EIM	Tourism Satellite Accounts - European Implementation Manual
TSA-RMF	Tourism Satellite Accounts - Recommended Methodological Framework
TVA	Tourism Value Added
UK	United Kingdom

List of abbreviations for the TSA-RMF tables[1]

TSA table 1: Inbound tourism expenditure by products and classes of visitors

TSA table 2: Domestic tourism expenditure by products, classes of visitors and types of trips

TSA table 3: Outbound tourism expenditure by products and classes of visitors

TSA table 4: Internal tourism consumption by products

TSA table 5: Production accounts of tourism industries and other industries (at basis prices)

TSA table 6: Total domestic supply and internal tourism consumption (at purchasers´ prices)

TSA table 7: Employment in the tourism industries

TSA table 8: Tourism gross fixed capital formation of tourism industries and other industries

TSA table 9: Tourism collective consumption by products and levels of government

TSA table 10: Non monetary indicators

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[1] The description of the TSA tables is adopted from the TSA-RMF 2008 manual.

1

Chapter 1 - Introduction

1   Introduction

Despite of the remarkable growth of the tourism sector during the last century, statistical information on this activity has traditionally been limited to a few spheres: physical flows (number of tourists, number of nights etc.), demand variables (the travel item of the balance of payments, consumption of tourism related products etc.) and supply data (output of tourism related industries, number of accommodation establishments etc.).

Even though this information is useful in itself, it fails to provide an overall view and render possible an economic analysis of the tourism sector by means of balancing supply and demand, and by estimating the impact of tourism in the main macro-aggregates of the corresponding economy. Tourism Satellite Accounts try to overcome these analytical limitations by compiling tourism supply and demand tables and by comparing them in a specific table.

The *System of National Accounts 1993* (SNA 93) provides an excellent conceptual and methodological framework for the TSA. In fact, the *European System of National Accounts* (ESA 95) states in paragraph 1.18 that "[...] for some specific data needs the best solution is to draw up separate satellite accounts. Cases in point are the data needs for [...] the analysis of the role of tourism in the national economy". In addition, paragraph 1.20 claims that "[...] an important feature of the satellite accounts is that in principle all basic concepts and classifications of the standard framework are retained."

For these reasons, the international methodology on TSA, the *"Tourism Satellite Account: Recommended Methodological Framework"* (TSA-RMF), drawn up jointly by WTO, UN, OECD and Eurostat, in general terms follows all the concepts, definitions, accounting principles and valuation criteria established in the SNA 93 and other related international manuals.

The TSA is a distinctive method of measuring the direct economic contributions of tourism consumption to a national economy. While satellite accounts generally follow the principles and structures of the adopted SNA 93, they also allow adapting their definitions and classifications to specific tourism features. Thus the TSA follows an accounting approach and measures tourism activity by a set of tables that are linked to each other in a rational way, describing all kinds of economic operations by the economic actors of the sector. These tables are fed by statistical sources and mainly provide the following information:

1. **National Accounts (NA) balanced results on tourism**

    - Demand-Side: Data on tourism related product-specific expenditure pattern by types of trips and classes of visitors

    - Supply-Side: Data on tourism characteristic activities with regard to sector-specific production and cost structures (value added, intermediate inputs), employment and gross fixed capital formation

2.   **Direct economic relevance resp. impact of tourism consumption**

    - Balancing internal tourism consumption with domestic supply and measuring the direct tourism gross value added in a bottom-up approach by using the tourism ratios

Obviously, the TSA as such only makes it possible to measure the direct effects of internal tourism consumption on output, value added of tourism industries, and other industries

serving them.

As in most Member States the Tourism Satellite Account (TSA) is not compiled on a yearly basis, a set of some key figures to be used for an intermediate short-term update of the basic TSA information is highly relevant. Section 2 of the following document shows some country-specific case studies how TSA key figures are "now-casted" by the Member States. The central idea of the finally presented proposal is the gradual approach within a period of three years which bears in mind the actual national data availability and thus recommends a three-stage estimation procedure of TSA key figures with regard to the reporting year. To put this proposal to practice there should be no greater burden with regard to the required financial resp. human resources for the stages 1 and 2 because one resp. two years after the reporting year the relevant data is directly available within the existing primary and secondary data sources of the national statistical system.

The Sections 3 and 4 of the document present some examples on how TSA results can be used in the broader macroeconomic context of policy-oriented economic impact analysis and impact assessment due to changes in tourism by using different macroeconomic modelling approaches.

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Chapter 2 - Options in Now-casting TSA Key Figures

2 Options in Now-casting TSA Key Figures

Not all Member States within the EU have yet implemented the Tourism Satellite Account in their statistical systems. Moreover, and as mentioned above, many Member States do not compile the TSA on a yearly basis, which in turn makes the determination of a set of key figures to be used for an intermediate short-term update of basic TSA information all the more important. Another set of countries has already implemented a TSA on an annual basis but still requires more up-to-date information about the dynamics of tourism supply and demand and the changes in tourism behaviour for policy and decision-making.

The estimation of these key figures for tourism demand and supply is closely connected with the need of providing timely, updated and consistent data on the direct economic impact of tourism. By developing a proposal for such a set of key figures, the availability of data as well as their appropriateness to reflect the main aspects of the economic development of the tourism sector has to be taken into account.

2.1 The General TSA Framework

2.1.1 The Input-Output Accounts as the Framework to estimate a fully-fledged TSA

Satellite accounts are, by definition, subsystems derived from National Accounts (NA) that aim at highlighting a particular sphere of economic reality. By taking the NA framework as a starting point and by combining this information with some additional sources, the economic transactions related to the sphere of interest are highlighted, broadened and extended.

In the particular case of tourism, the TSA aim at providing a comprehensive economic assessment of tourism in the economy of reference. Similarly to any other satellite accounts, for TSA the framework of reference are the NA, and in particular the corresponding Supply and Use tables (SUT) within the Input-Output Accounts (IOA), since in these tables all economic transactions are described. Therefore, the SUT either explicitly or implicitly depict all economic transactions requested for filling in the core tables of the TSA-RMF.

The general idea is to identify transactions included in the SUT that are derived from the tourism sector. For this purpose, additional sources of information from both supply and demand side are needed. Once this information is obtained, the SUT is re-arranged by pinpointing tourism characteristic products and industries, and by grouping the non-specific other products as just one product, and similarly the non-tourism-specific other industries as just one industry. Another transformation that should be accomplished before compiling the TSA derives from the different accounting principles applied to package tours i.e. their net valuation in TSA versus gross valuation in NA.

2.1.2 The Approach of the TSA-RMF

Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. From the TSA perspective, tourism is obviously analysed from an economic point of view by analysing the effects that tourism consumption has on supply and demand. Therefore, the key

element determining the direct impact of tourism consumption is the demand for goods and services related to trips.

Even though tourism clearly is a demand phenomenon, its economic effects - according to the approach proposed in the international TSA-RMF methodology - are obtained through a supply procedure, although it is the tourism demand that determines the level of tourism output, as commented below.

The core set of tables of the TSA-RMF (TSA tables 1 to 6 except table 3 on outbound tourism consumption) are those whose data are integrated in TSA table 6 for a juxtaposition of demand and supply. Accordingly, the key data sets needed to assess tourism from an economic point of view are the production and generation of income of the tourism industries (TSA table 5) on the supply side, and the inbound and domestic tourism expenditure (TSA table 1 and 2 respectively) as well as less relevant elements of TSA table 4 on the demand side.

From the demand perspective, the key variables to determine the contribution of tourism to the GDP hence are inbound tourism expenditure, domestic tourism expenditure, and the so-called 'Other components of tourism consumption'. The latter aggregate category contains 'services associated with vacation accommodation on own account', 'tourism transfers in kind', and 'Other imputed consumption'. Nonetheless, it should be remarked that this approach does not take into account other demand elements that have a direct effect on the tourism GDP, namely tourism gross fixed capital formation of tourism industries and tourism collective consumption.

The reasons to exclude these two demand elements are basically due to the statistical and methodological difficulties in integrating them in the TSA framework. Paragraph 2.56 of the TSA-RMF (2008) states that *"until more discussion and research is carried out there is no proposal for a specific aggregate for tourism gross fixed capital formation for the purpose of international comparison. Notwithstanding these measurement challenges, the general concept of tourism gross fixed capital formation is considered as an important one, and included within the broader concept of total tourism internal demand"*. Concerning tourism collective consumption, TSA-RMF (2008) explicates in paragraph 2.65 that *"collective tourism consumption is considered within the broader concept of total tourism internal demand, although at present, this concept has an experimental character due to the lack of experience in this field and measurement challenges. As a consequence, international comparisons should not be based on the estimates of this aggregate"*.

The approach proposed in the TSA-RMF to obtain a clear picture of the contribution of tourism to the main macro-aggregates is based on the supply side. In TSA table 6, the internal tourism consumption from TSA table 4 is compared with the domestic supply at purchasers' prices. Domestic supply is defined in TSA table 6 as the sum of the output of domestic producers at basic prices plus the imports plus net taxes on products plus the trade and transport margins. The tourism ratios on supply for the tourism products are calculated by dividing internal tourism consumption by domestic supply at purchasers' prices.

In a second step it is necessary to fill in the main matrix of TSA table 6. This is accomplished by allocating the internal tourism consumption net of imports at basic prices for every tourism product to the industries producing this specific product. Once completed for every single product, the tourism share and gross value added (GVA) for every industry can be ascertained, and so the contribution of tourism to the GDP.

Therefore, estimating the contribution of tourism to the GDP of the economy of reference is based on a supply approach, which requires detailed information on the tourism industries. As a result, the supply side data of TSA table 6 is generated from TSA table 5, which is devoted

to the production and generation of income accounts of tourism characteristic industries. This table is derived directly from the supply table of the SUT framework and it can be easily filled in for those years the SUT are available.[2] For the years in which SUT have not been compiled, however, it is rather difficult to complete TSA table 5, mainly for two reasons: First, the information needed is not available; and second, even in case of some available data the crucial issue of balancing supply and demand still needs to be carried out.

2.1.3   The Availability of SUT

It should be borne in mind that according to the ESA95 transmission programme, the EU-Member States are obliged to submit the SUT to EUROSTAT for year T in year T+3.[3] This means that for the most recent years usually it is not possible to compile table 5 and 6. Consequently, the contribution of tourism to the economy for years T-2 and T-1 cannot be determined. But as explained before, users are usually concerned about the most recent tourism data and not about out of date figures. In the following, some country-specific procedures in treating this difficulty are explained in more detail.

2.2   The Portuguese Experience

This paragraph summarises the Portuguese experience and practice in compiling indicators of preliminary versions and first estimates for TSA. Since Member States have a similar statistical system in terms of basic tourism statistics and national accounts (NA), according to the compulsory requirements of Eurostat under NA (ESA95) and Tourism Statistics (Directive 95/57/EC), the case of Portugal can be considered as reference. Other than that, neither UNWTO nor OECD or Eurostat provide any official methodological references on this subject. For that reason, the purpose of this paper is to give some recommendations for the compilation of these types of indicators.

Portugal implemented TSA in 2005 for the reference year 2000 (benchmark year of NA). Since then the PTSA has been compiled on a regular basis, yielding a set of definitive data for the period 2000 – 2006 (including employment and gross fixed capital formation of tourism related industries). It is also possible to access preliminary data for 2007 and a first estimate for 2008, which was disseminated in December 2008.

Before the end of 2007, the available monthly data on accommodation statistics and on credits of BoP "travel" item revealed that 2007 was a positive year for the tourism industry. The need of policy makers for recent information and up to date estimates to validate the positive impact of tourism on the economy justified the compilation of fast/flash estimates for the key tourism indicators.

In this vein, Statistics Portugal decided in late 2007 to develop a pilot study for the compilation of the first 2007 estimates of the main PTSA aggregates. Preliminary results for 2005 and 2006 and a first estimate for 2007 were disseminated in December 2007, before the dissemination of any NA definitive data for 2005. In May 2008, data for 2006 was updated and first estimates for 2007 were presented due to the availability of the definitive NA for 2005. In June 2008, a definitive version of NA for 2006 was disseminated and consequently

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[2]   It has to be noticed that typically the latter does not provide the required adjustments due to different valuation criteria applied to package tours.

[3]   Regulation (EC) No 1392/2007 of the European Parliament and of the Council of 13 November 2007

TSA 2006 became definitive. Following the methodology defined in the pilot study, a first estimate for 2008 was produced in December 2008. Definitive data for 2006, a revised preliminary version for 2007, and the first estimate for 2008 were then disseminated.

Thus the compilation of first estimates yields some tourism key figures before having completed a TSA. In fact, a Member State can compile a fully fledged TSA for a specific reference year, for instance the base year of National Accounts, and use these estimates to produce tourism key indicators for the following years.

This section includes 3 main subsections. The first subsection presents the main data sources and methodological procedures of the compilation of preliminary and first estimates of TSA. The main data sources are identified, taking into account the different types of indicators that can be compiled according to their version (first estimates, preliminary, provisional and definitive ones). The second subsection discusses the compilation methodology of the preliminary and first estimates for tourism demand and supply main aggregates. The third subsection provides some examples of the different key figures that can be compiled for the analysis of the direct economic impact of tourism.

2.2.1 Inventory of the Main Data Sources and Methodological References

In the first stage of a pilot study for the compilation of estimates for the main key indicators of tourism demand and supply, the inventory of available data sources are considered. This is similar to the process of Member States compiling TSAs. However, in case of the estimation of TSA key figures data sources are arranged from short-term basic statistics and quarterly national accounts to price and volume indexes. The next table displays some of the main data sources available in Portugal.

The use of different types of data with different time gaps between the reference periods of latest TSA data should take into account the availability of these data and also their quality and coverage. In fact, the available data sources for estimating the preliminary version for the PTSA 2005 were more consistent and had a larger coverage (some of them already in a definitive version and quality controlled) since there already was a quasi definitive version of NA for 2005.

Since there is no methodological recommendation for compiling this type of indicators, the main methodological references concern the methodological guidelines of the Portuguese TSA and the methodological references of the Portuguese quarterly accounts and preliminary NA, especially for the characteristic industries.

TSA Key figures: Main data sources
Portuguese TSA last data
Tourism Statistics:
Accommodation statistics
Border Survey and International Spending Survey (residents and non residents)
Domestic and Outbound Tourism Survey (household survey)
Transport Statistics
Consumer Price indexes
Balance of Payments (BoP) – items of travel and passengers' international transport
NA
Definitive NA: Household final consumption; price and volume indexes from the Supply-Use tables)
Quarterly Accounts: GVA and additional data for the characteristic industries
Others:
Structural business survey
Administrative sources on the corporation's income tax
Short term statistics
Quarterly statistics on corporations

2.2.2   Compilation Methodology

The use of provisional data from the main data sources for preliminary versions and the first estimates puts some limitations on its quality and consistence, and consequently on TSA estimations. This is why only some key figures can be disseminated as TSA main indicators. The same applies to fast estimates such as quarterly TSAs.

Preliminary and fast estimates provide information on the main aggregates of tourism demand and supply (total internal tourism consumption and the contribution of tourism to gross value added) in order to enable the construction of the main tourism indicators. The description of the adopted methodology is presented for preliminary and first estimates and for tourism demand and supply.

Although the PTSA team has already compiled preliminary versions for 2005, 2006 and 2007 and first estimates for 2007 and 2008, the methodology described in the following paragraphs will refer to the experience of compiling a preliminary version for 2006 and a first estimate for 2007. Although 2005 was also compiled as a preliminary version, in practice it turned into more of a provisional version due to the availability of data sources.

2.2.2.1 Preliminary Versions

Generally speaking, estimations were largely based on available information from national accounts and from tourism statistics. While for 2005 there already was a provisional version of SUT from national accounts and definitive data for tourism statistics and for the remaining main data sources (business statistics, transports statistics, e.g.), in the 2006 version it was only possible to access some preliminary data from national accounts and from other data sources, such as the tourism statistics on nights spent.

The level of disclosure for the dissemination of PTSA estimates is not the same for different versions due to data quality and consistency reasons. In case of preliminary versions the level of consistency and coverage allows for the dissemination of main indicators for tourism demand and supply at a higher level of detail (but not as so much for TSA definitive results) than those of first estimates. This is why key figures cannot provide information at the same level of detail as those provided at medium/long terms which are based on more consistent and exhaustive data sources.

For preliminary versions, tourism consumption can be determined through tourism (inbound, domestic and other components of internal tourism consumption) and product categories (characteristic, connected and non-specific). For inbound tourism it is also possible to obtain information by category of visitors (same-day visitors and tourists). Tourism supply, gross value added (GVA) and TGVA (tourism contribution to GVA) are presented by characteristic industries (first level; with air transport detailed) and non-characteristic industries.

The following table summarises the previous references, and compares the level of detail of preliminary and first estimates with definitive and provisional TSA contents.

Breakdown / TSA indicators	Versions of the PTSA			
	Definitive	**Provisional**	**Preliminary**	**First Estimates**
Internal Tourism Consumption	Products[1]			Total
Inbound Tourism Consumption	Products / Category of visitors			Total
Domestic Tourism Consumption	Products / Domestic or Outbound visitors		Products	**Total**
Other Comp. of Tourisn Consumption	Products			
Tourism Ratio	Products		n.a.	
Gross Value Added	Characteristic, Connected and non - specific industries		Characteristic and non - characteristic industries	Total
Value Added Generated by Tourism				Total
Employment*	Characteristic Industries		n.a.	
Employment Generated by Tourism*				
Gross Fixed Capital Formation	Characteristic Industries	n.a.		

[1] Definitive and provisional versions: Second level; Prelimary versions: First level

* Variables: Jobs, Individuals; FTE; Hours; Compensations and Salaries

Breakdowns: status in employment (employee/own account worker or self employed); type of work (full-time/part-time); gender; age and education level

The next paragraphs describe the main methodological issues concerning the compilation of tourism demand and tourism supply for the preliminary version.

2.2.2.1.1 Tourism Demand

Inbound Tourism

As for the compilation of TSA table 1 of the definitive TSA version, the main data sources were the credit "travel" and "international passenger transport" items of BoP. These figures were available at the time of compiling preliminary estimates for TSA 2006 and therefore used as a reference for estimating inbound tourism consumption (equivalent to TSA table 1)[4]. The split by category of visitors, purpose of visit and products was based on key structures taken from the International Spending Survey of non residents. Information provided by the survey was also important and used in the net valuation of travel agencies and tour operators output.[5] Special attention was paid to accommodation, exhaustively estimated, according to available information on volume and price (statistics on occupancy of hotels and similar provide information on nights spent and the average price for them, by type of accommodation establishment).[6]

In general, it was possible to adapt the methodology of the PTSA to inbound tourism. BoP information on credits for "travel" and "international transport" can be considered a main data source for the development of now-cast key figures for inbound tourism.

Domestic Tourism

Since the value of domestic tourism consumption is part of the ultimate household consumption expenditure, the provisional figures for TSA 2005 constituted the starting point for the estimation. Those data for 2005 were already in a quasi-definitive version since by the time the provisional TSA 2005 was compiled, data on the final household consumption by products in the NA was already available.[7] Because there was no such information available in the NA for 2006, the estimation of the preliminary PTSA was based on the application of volume and price indexes to the provisional estimates of the PTSA 2005. Value indexes were also applied whenever the main data was taken from the supply side. Basic estimates were made at the product level from the NA and mapped to TSA product classification. The construction of volume indexes was based on available data sources from the:

- Demand side, based on:
  - Occupancy statistics
  - Domestic and outbound tourism survey
  - Additional data from other tourism surveys of residents from the National Tourism Administration, Turismo de Portugal
- Supply side, based on:
  - Transports statistics
  - Structural business survey
  - Administrative sources on the corporation's income tax
  - Short term statistics
  - Additional data taken from the supply side of the PTSA.

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[4] Business Tourism Consumption is compiled in Other Components of Tourism Consumption (part of TSA table 4).

[5] Treatment of the package tour

[6] Information on volume indexes for the other collective establishments is also captured by this type of statistics. For price indexes, the respective price consumer index is applied since 2005.

[7] In the definitive versions of the PTSA, domestic tourism consumption is estimated according to some tourism ratios that intend to capture the tourism component of the household final consumption.

The consumer price index by products at the highest level of detail was adopted as price index. In accordance with the TSA methodology, the estimation of accommodation for domestic tourism was exhaustive.

Other components of internal tourism consumption

The other components of internal tourism consumption include business tourism consumption, second homes used for tourism purposes on own account or free of charge and other non monetary tourism consumption. This aggregate is presented individually in definitive, provisional and preliminary versions of the PTSA.

The estimation of business tourism consumption in the preliminary version of 2006 considered the application of volume and price indexes (and in some cases value indexes) for domestic tourism. These indexes were based on the same data sources that were used for calculating domestic tourism.

The calculation of the preliminary imputed rents for holiday homes resulted from the application of a price index (officially given by the government for the update of rentals) and of a volume index (related to the number of new buildings built for dwellings purposes) to the correspondent figures of the previous year.

The estimation of the amount for non monetary tourism consumption considered the evolution of the number of total visitors (resident and non resident).

2.2.2.1.2 Tourism Supply

The compilation of GVA and TGVA entails a calculation of production and intermediate consumption as carried out for TSA table 6 of the PTSA. The process of compiling tourism supply is based on a bottom up approach; that is, GVA and TGVA are inserted as balancing items between output and intermediate consumption. The main data sources are the preliminary NA, business statistics and information of the corporate income tax. Preliminary NA only provides data for GVA without detailed information neither for production nor intermediate consumption. This data formed a reference for tourism related industries since they provide information on the evolution of the correspondent activity in the preliminary NA. Nevertheless, this information is restricted since NA only provides information on GVA at a lower level of detail of activities (A7).

As previously mentioned, the main methodological references of preliminary NA were taken into account especially for characteristic industries. Despite of the common data sources used for the compilation of the supply side of the TSA (business statistics, e.g.), database files from preliminary NA were used as well. This procedure allowed validating and cross-checking the different scenarios estimated for the supply aggregates of the different industries of TSA, both for preliminary and first estimates.

Besides structural business statistics and preliminary NA, basic statistics and other types of information such as the financial reports of the main productive units of characteristic industries (such as transport services and hotels and similar) were taken into account. These types of indicators also confirmed the results (for example, a structural business survey discovered that volume and price indexes in collective establishments in 2006 were relatively close to the evolution of output).

Based on preliminary NA data and NA methodology (also adopted in the PTSA methodological framework) it was possible to estimate the production and GVA of imputed rents for second homes used for tourism purposes.

- For the estimation of TGVA, different methodologies were adopted according to the different characteristic industries:

- For Hotels and Restaurants, main reference data sources were occupancy statistics (value indexes on accommodation receipts for hotels and similar, and volume indexes on nights spent and consumer price indexes on restaurants for restaurants and similar);

- For transport services, quarterly business statistics on the universe of productive units that potentially render services to visitors (water and road) and data from the main productive units of a given transport service (air and railway) were taken into account to define the various indexes; this latter approach was considered in the estimation of TGVA of car rental (volume indexes on the passengers transport equipment rental and price consumer index on this product);

- For second homes used for tourism purposes, the same indexes used for compiling GVA were considered;

- For the net valuation of travel agencies and tour operators output, the information on the evolution of proxies of production (P1) and intermediate consumption (P2) from the structural business survey was used. The value for the package tour considered the value index of the subcontracts made by travel agencies, assuming that this figure refers to those package tours bought by them to tour operators.

The GVA of the non characteristic industries is a residual item (difference between total GVA of the economy in preliminary NA and the total GVA of the characteristic industries). The respective TGVA is given by applying the evolution of the total internal tourism consumption to the non characteristic of products (it is assumed a direct relation between products and industries exists).

2.2.2.2 First Estimates

The production of the first estimates for the PTSA is based mainly on monthly data from the main data sources for tourism demand (tourism statistics or BoP), short term statistics from the supply side of the economy (monthly services turnover indexes, transport and short-term business statistics) and quarterly national accounts.

These types of indicators are, so to say, a kind of fast estimate since the main purpose of this information is to put forward recent information for the key figures on tourism: first estimates were compiled before the end of the reference period. Since these estimates are based on short term information relying on a lower level of quality and coverage the level of detail of the variables disseminated is lower.

In the case of TSA first estimates, it is possible to provide the total amount of inbound tourism consumption for tourism demand without any type of detail. Domestic tourism consumption and the other components of internal tourism consumption are aggregated in a total for dissemination purposes. As far as tourism supply is concerned, there only is a total figure for GVA and TGVA without any detail by industry.

The compilation of the first estimates considered as a starting point data from BoP "travel" and "transports" items (credits) available until October, whereas main data from tourism, corporations and transports statistics, price consumer indexes and other types of volume indexes (service and industry business volumes) were available until September. Quarterly accounts were available until the third quarter of the year.

In order to gross up 2007, the average yearly growth rate of a given variable was calculated from a specific data source from the period January until September or October (according to the availability of the data source used). This methodology was based on the duly tested assumption that the most important period for tourism in Portugal occurs is between January and September/October. It is therefore assumed that the overall tourism performance in 2007 is to a great extent shaped by its behaviour from January until September/October.

As for the preliminary versions, the main compilation references are presented for tourism demand and tourism supply.

2.2.2.2.1 Tourism Demand

Inbound Tourism

In the Portuguese case, the first estimates for 2007 used the same type of methodology as for the preliminary estimates and the same data sources with an exception of the coverage period.

In order to gross up 2007, an average yearly growth rate of BoP values from January until October for 2007/2006 was applied to the total value of inbound tourism consumption of 2006. That is to say, the remaining months of 2007 (November and December) considered the same gross up rate as the rest of the year (from January to October).

Regarding inbound tourism, tourism statistics (nights spent by country of residence) and BoP credits confirm the assumption that the most important period for tourism in Portugal lasts until September/October (until the end of the summer season). During the rest of the year, inbound tourism demand traditionally is negligible.

At the moment of compiling first estimates, the available information from the international spending survey on non residents did not provide a consistent and solid estimate that could allow disclosure of the total inbound tourism consumption by category of visitors or by products; at least at the usual level of disclosure.

For 2007, additional adjustments were made in order to measure the effects of the EU-Africa Summit in December by introducing its impact especially on accommodation, restaurants, transport services and cultural and leisure events. This additional component was considered part of the inbound business tourism consumption (in other components of internal tourism consumption).

In 2008, the international context of economic crisis, especially in the second half of the year, demanded for a further adjustment to the methodology. The assumption holding that a similar growth rate could be achieved during the last quarter of the year as during the previous three quarters (as it had been done the previous year for the first estimate of 2007) proved to be a problematic hypothesis for 2008. Based on the economic context, it was expected that the tourism variables would record a decrease in the last months of 2008, which is why an according methodology was needed. The new methodology subsequently considered the growth rate of overnights spent in the last quarter (August/September/October) between 2006 and 2007, instead of the January to October growth rate. Indeed the August to October growth rate showed a decrease of nights spent as high as 2.5%, while the period from January to October decreased by only 1%.

The main conclusion from the first estimate compilation is that the methodology adopted must take into account the reality and specificity of the status quo and of the place or country analysed. The effects of applying an ill informed methodology are even more striking in the context of fast estimates.

Domestic Tourism

The main difficulty in defining the methodology of the first estimates was paucity of data from NA for household final consumption and from the Domestic and Outbound Tourism Survey for 2007. According to the PTSA methodology, these two data sources constitute the core of the estimation of TSA table 2.

In order to overcome this limitation, two scenarios were tested. Both scenarios were based on the application of value indexes; one from the supply side and the other from the demand side (nights spent).

For the supply side scenario, price and volume indexes from the main characteristic activities were applied to the respective product (mapping between the evolutions of the activity mainly producing that product). For the demand side scenario (nights spent), the main argument is that the behaviour of accommodation services serves as a good indicator for domestic tourism evolution over time. It should be noted that accommodation services have been exhaustively estimated in both scenarios of the PTSA.

The choice of the best scenario was a mix of their advantages: the first considered the evolution of the different characteristic products according to its output while the second considered a tourism indicator specific to tourism demand. In a last step, the aggregate was estimated as the average between the figures obtained in the two scenarios and disseminate only the total amount of domestic tourism consumption aggregated with the other components of internal tourism consumption. The net valuation of travel agencies and tour operators were considered in these two scenarios for 2005.

Generally speaking, it is also possible to choose only one scenario, provided there are sufficient reasons to trust it more than the others.

Other components of internal tourism consumption

The compilation of first estimates considered also the two scenarios for the estimation of other components of domestic tourism consumption. This is why the total of the other components of internal tourism consumption is included within the total of domestic tourism consumption.

2.2.2.2.2 Tourism Supply

The compilation of first estimates considered the treatment of different types of data sources (monthly tourism statistics, monthly services turnover indexes, transports and short-term business statistics). In this case, quarterly NA was an important data source (available until the third quarter of the year).

The adopted approach for obtaining the first estimates of GVA and TGVA was based on the basic hypothesis assuming application of the yearly growth rate between 2007/2006 to the period where information on the supply side was available in order to gross-up the figures for 2007 (January until September/October according to the data source used).

For the majority of the characteristic industries, information from short-term business statistics, available until the third quarter of the year, was considered to define the yearly growth rate. Additional information confirmed this method when defining the correct index.

The estimation for hotels and similar, air transport services, car rentals and second homes did not follow the same method. For those industries, specific information was applied from primary statistics (occupancy statistics – total receipts; monthly information on services turnover indexes) and from preliminary NA (by applying indirect methods to identify the characteristic industry included in the respective NA industry or by appropriating preliminary figures from NA according to PTSA requirements).

The compilation of first estimates of TGVA for characteristic industries considered the same type of approach as the preliminary version with two main differences: First, the main data sources used (occupancy statistics – nights spent, accommodation and total receipts; transport statistics, short term statistics on corporations; "travel" item of BoP), and second, the application of the mentioned yearly growth rate. Different approaches were used for rent-a-car and transport services due to the small sample of short-term statistics on corporations for the third quarter of 2007 relative to the same quarter in 2006). Reference should be made to the net valuation of travel agencies and tour operators and to the valuation of second homes.

As for the preliminary versions, the GVA of the non-characteristic industries is a residual item. The first TGVA estimate of non-characteristic industries is estimated the same way as the preliminary versions. The lack of more consistent information justifies disseminating only a total figure of TGVA.

2.2.2.3 Validation of the Methodology Defined for the Compilation of Preliminary Estimates

The compilation method for the first estimates of 2007 was validated by using the same approach for 2005, which consisted of crosschecking the differences between the PTSA definitive data and the estimated figures. The level of discrepancy between the observed and the estimated figures was lower than 1%, thereby validating the adopted methodology.

Differences between the different versions (2006-2007)
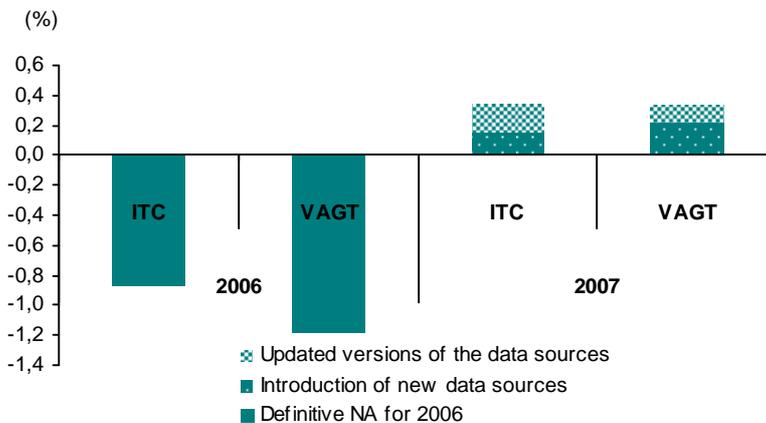
(1) Revisions estimated in p.p. in relation to the previous versions

For 2006, internal tourism consumption was revised positively mainly due to the inclusion of updated versions of data sources (provisional to definitive), while TGVA was revised negatively (due the high revision in intermediate consumption). For 2007, the methodology produced a relatively small statistical error since the main component of tourism demand had already passed (summer season) at the time when fast estimates were compiled.

Since the differences were irrelevant, the methodology initially tested was adopted and new estimates were compiled for the first estimates of 2008.

2.2.3   TSA Indicators and the Analysis of Tourism Economic Contribution

As previously described, the level of desegregation of the different TSA indicators depends on the degree of quality, consistency and reliability of the data sources used to compile these indicators. However, there is a trade off between the 'maturity' of data sources and their quality and consistency.

As it is known, the compilation of the demand and supply TSA tables enables estimating the main indicators for tourism. These primary indicators provide information for the analysis of the behaviour of tourism demand according to the country of residence of the visitor or to the main characteristic products (product mix), and of the tourism supply according to the contribution of the different industries to TGVA. Yet these types of indicators is not sufficient since they do not provide a comprehensive picture of the (relative) economic importance of tourism, and since institutional users (governments, national boards of tourism, universities etc.) require more detailed information for policy making.

It is possible to compile other types of key indicators which are based on TSA outputs in order to highlight the relative importance of tourism to the economy and the contribution of tourism to the economic and social dynamics of the country. In general, the compilation of this type of secondary indicators is based on a ratio between one of the main primary indicators (monetary data) and other type of physical or monetary indicator or even between two primary indicators (tourism ratio is an exception since this indicator is compiled in TSA table 6).

Taking the example of Statistics Portugal, it is possible to compile different types of secondary indicators in relation to the performance of tourism to the economy and the contribution of tourism to the overall employment of the economy.

Special attention has to be given to the fact that all below mentioned indicators relying on data from National Accounts could not be compiled because data from preliminary NA for the reference year was not available at the time when the first estimates were produced. According to the first working plan and the work completed, preliminary estimates were disseminated at the time the first estimates were planned. Nevertheless, the alternative is to estimate a reference value for GDP and GVA in order to compile these indicators, based on the methodology defined for compiling first estimates (average yearly growth rate method).

2.2.3.1 Indicators for the Analysis of the Performance of Tourism Demand in the Economy

1. Weight of internal tourism consumption in GDP (Gross Domestic Product) resp. ratio between internal tourism consumption and GDP. This is one of the indicators mostly used by the main users of PTSA estimates. This indicator is usually compiled by those countries compiling TSA.

2. Weight of internal tourism consumption in household final consumption resp. share of internal tourism consumption in the household final consumption.

3. Importance of tourism consumption by residents and non-residents related to the total internal tourism consumption.

4. Relative importance of business tourism consumption to total internal tourism consumption.

5. (Nominal) growth rates of the main TSA aggregates compared to the nominal growth rates of the main aggregates of the NA: PTSA is already available for the period 2000-2007, therefore making it possible to derive (nominal) growth rates from the main aggregates of TSA and of the NA in order to compare the evolution of both realities. One of the future projects of Statistics Portugal is to estimate TSA at constant prices, at least for the main aggregates, allowing the measurement of volume growth rates.

2.2.3.2 Indicators for the Analysis of the Performance of Tourism Supply in the Economy

1. Relative importance of TGVA in relation to GVA (total and by industry)

2. Contribution of TGVA in relation to GDP

   These two indicators provide information about the contribution of the value added generated by tourism in relation to GVA and GDP. It is possible to compile these indicators by type of industries (characteristic, connected or non-specific). With additional information from table 6 of the PTSA it is also possible to obtain a figure for the contribution of tourism to GDP (proxy to tourism GDP) by adding taxes less subsidies on products generated by tourism to VAGT (additional column in TSA table 6).

3. (Nominal) growth rates of the TSA variables and those of the NA variables - the same as for the demand side.

4. Contribution of the tourism share of the domestic production to tourism supply - this indicator reflects the capacity of the productive structure in providing goods and services to visitors.

5. Contribution of tourism to GDP growth.

   This indicator was defined during the dissemination of the PTSA results for 2000-2002 and intends to evaluate the contribution of tourism to GDP growth in order to assess the relative contribution of the tourism sector to GDP performance (GDP). For the example above, it is possible to observe in 2001 a nominal growth rate for tourism higher than GDP (10.1% against 5.8%), which represented 4.9% of GDP and contributed 0.5% to GDP growth. In 2002, the

performance of tourism was lower, with its contribution to GDP decreasing by 0.4% and negatively influencing GDP growth as well (-0.2%). In 2004, an increase of tourism contribution to GDP (7.7%) and to GDP growth (0.4%) could be witnessed. The situation remains positive in 2005, albeit at a low level as a result of the good results in 2004 due to the European football championship (Euro 2004).

2.2.3.3 Indicators for the Analysis of the Contribution of Tourism to the Employment of the Economy

1. Contribution of employment in tourism related industries to total employment of the economy (all variables)

2. Relative importance of the different tourism related industries in the correspondent total (for all variables: jobs individuals, FTE etc.)

3. Contribution of employment in tourism related industries to the total employment of the economy (for the different breakdowns: status on employment, age, gender etc.)

   These types of indicators intend to characterise the tourism sector in terms of manpower, to capture the contribution of the tourism sector to the overall economy employment, and to evaluate the performance of this sector.

4. Relative importance of employment generated directly by tourism in the employment of the characteristic industries and in the total employment of the economy - this type of indicator captures the impact of the provision of goods and services to visitors on the employment structure of the various characteristic industries, identifying those that have a higher tourism share in terms of employment. The different types of breakdowns available also enable a social characterisation of tourism employment in characteristic industries.

5. Growth rates of the main variables describing employment in tourism related industries related to the corresponding variables for the total economy – the main purpose of compiling these growth rates is to compare the dynamics of employment (jobs, FTE, individuals, hours, wages and salaries) with those from the total economy, and to take into account the performance of the main economic variables of the tourism sector (production, GVA, internal tourism consumption).

2.2.4 Conclusions

Finally a few important conclusions can be drawn in terms of methodological aspects. The methodologies adopted for early estimates are highly dependent on the availability of timely data sources. One major issue in these preliminary versions is to balance the trade-off between the timeliness and the accuracy of data sources. According to this trade-off the presented proposal for a set of TSA key-figures has been developed.

Besides, it is necessary to adapt the various time spans of the different available data sources during the compilation process. In addition, and since the data sources used in the definitive versions may not be available at all, they must be substituted by other with different scopes.

2.3   The Spanish Experience

Although annual TSA is a relevant tool to conduct an in-depth analysis of the tourism phenomenon from the economic standpoint, it fails to provide up-to-date estimates of the impact of tourism on the economy. In fact, most of the information required to compile TSA for a specific year is available, in an explicit or implicit way, in the balanced SUT. If SUT are used as the core for the compilation of TSA, this consequently implies that a fully fledged TSA can only be produced with a significant time lag.

On the contrary, qualified users are demanding more and more up to date figures on the economic assessment of tourism for different purposes. However, since tourism in most countries has a very strong seasonal pattern, and it also is fairly sensitive to the socio-political and economic situations, it is crucial to operate with up to date data in order to effectively monitor the development of tourism.

In the following sections, the discussion will focus on a new complementary approach to estimate the contribution of tourism to the GDP through a pure demand based method, which would allow to have more updated figures on this phenomenon. As explained below, this demand approach does not only provide a more comprehensive assessment of tourism, but it can also be used to obtain the contribution of tourism to the economy without compiling the full set of TSA tables. In this way, it can be applied when SUT are not yet available for the inter-TSA years (when TSA is not compiled on a yearly basis), and whenever short-term estimates of the economic effects of tourism are needed.

2.3.1   The Demand Approach

As commented above, TSA fail to provide up to date estimates despite providing an in-depth and comprehensive analysis of the economic dimensions of tourism. To overcome this limitation, it is necessary to apply a different approach that allows estimating the contribution of tourism to the GDP for those years for which SUT have not been estimated yet, or even short-term estimates, like quarterly estimates of the role of tourism in the GDP.

The approach applied in the Spanish TSA was based on a pure demand approach ever since its first publishing in 2001. For this method, all demand elements are identified that are regarded as final demand from the National Accounts perspective, because GDP is defined from the demand perspective as the sum of all final demand components net of imports. Nonetheless, it should be clarified that the Spanish TSA includes in its estimations TSA table 6 for years in which the SUT of the Spanish economy has already been accomplished.

These two approaches to estimate the contribution of tourism to GDP - the supply side model as proposed by the TSA-RMF on the one hand, and the final demand approach on the other - should not be deemed as substitute methods, but as complementary ones. The former provides an estimation of the direct effects of tourism on the GDP as well as very useful information that cannot be obtained from the demand approach (i.e. the tourism ratios of tourism related industries). The latter approach is able to give a more complete and accurate assessment of the effect of tourism on the economy, since this method accounts for all effects of tourism on GDP. Another argument in favour of the demand approach is its ability to integrate the two components of tourism internal demand whose integration is not solved in the international guidelines – at least for the time being.

Hence, the first task is to establish the translation from TSA concepts into National Accounts transactions and to determine what components of tourism demand constitute final demand:

- TSA table 1 on inbound tourism consumption is related to the export of services, in particular passenger transport services and consumption of non residents in the economic territory of the reference country. The total amount of inbound tourism consumption at purchasing prices is final demand, regardless of the purpose of the trip. Setting a few minor adjustments aside, this total amount can be easily classified as the credits of the "travel" item plus the "passenger transport services" item of the Balance of Payments.

- In TSA table 2 on domestic tourism consumption the purpose of the visit is a key element to establish what part of table 4 should be regarded as final demand in National Accounts. Contrary to TSA table 1, the expenditure on business trips has to be considered as intermediate consumption. It therefore has no effect on GDP. In fact, all expenditures on trips for any other purpose are recorded in National Accounts as household final consumption. The per-diem received for food during business trips in National Accounts is recorded as compensation of employees in kind, and therefore the concomitant expenditure is likewise to be registered as household final consumption.

  Finally, it should be taken into account that TSA table 2 also includes the expenditure linked to outbound trips undertaken to the economy of reference. This principle is in line with the National Accounts, as these expenditures are recorded in household final consumption or intermediate consumption, depending on the purpose of the trip.

- TSA table 3 is devoted to outbound tourism consumption. As the part of the expenditure on these trips that it is carried out in of the economic territory is recorded in TSA table 2, all expenditures presented in this table are related to the import of services. Similarly to TSA table 1, such services to be considered as tourism related are the "travel" item and the "passenger transport services" item. Nonetheless, as this element does not have an economic effect on the economy of reference but on the countries visited, this information is not required for the final demand approach.

- Apart from the data coming from TSA tables 1 and 2, TSA table 4 also includes the so-called *"other components of tourism consumption"*. These elements are components of the tourism final demand as well.

  According to the international guidelines on National Accounts (SNA93 and ESA95), the own account dwelling services fall into the production boundary and, as a consequence, it is assumed that the production units (the dwellings themselves are treated as "quasi-corporations") render dwelling services to the proprietor household, and hence recorded in National Accounts as household final consumption. In order to guarantee the consistency with this accounting principle, *"the services associated with vacation accommodation on own account"* should also be included in TSA as tourism consumption.

  The concept of *tourism social transfer in kind* is related to the individual non-market services that are rendered by the general government or by the non-profit institutions serving households to benefit the visitors. In both cases, these social transfers are to be treated as final demand.

Finally, the concept of *other imputed consumption*, may register tourism related services or goods that are provided to the visitors for free. In as far as these services are provided by employers to their employees for free or at an economically insignificant price, they are considered as compensation of employees in kind, and from the demand side these services are accordingly recorded at market prices as household final consumption. Concerning the example of FISIM on purchases related to tourism trips it is important to clarify that TSA-RMF wrongly assumes that tourists "consume" FISIM services when they pay for the tourism services they have purchased in instalments. In this case visitors are not consuming FISIM but financial services.

To summarise, to be able to apply the final demand approach, the only necessary step is to identify within the domestic tourism consumption the expenditure that it is linked to business trips, as this is the only element in TSA tables 1, 2 and 4 that is not part of the final demand.

2.3.2   The Demand Side Sources of Information

As explained above, one of the reasons to use the final demand approach, apart from other considerations, is that usually the demand sources of information are able to produce more punctual data that are needed for the TSA purposes than the supply sources. This section will give a brief overview of the main sources needed to apply the final demand approach.

2.3.2.1   TSA tables 1 and 3

Obviously, the main source of data for TSA table 1 and for TSA table 3 is the BoP used to estimate the accounts for the rest of the world in National Accounts. By using this source in the compilation of TSA, the consistency among the three statistics is guaranteed. As commented above, the total inbound tourism consumption/outbound can accordingly be calculated, in broad terms, as the sum of credits/debits of the "travel" item and "passenger transport services" item.

One of the great advantages of using BoP, apart from ensuring consistency, is the punctuality of the data of this source: EU Member States are obliged to submit to the European Institutions estimations of the BoP items on a monthly and quarterly basis. While for monthly transmissions only the total credits and debits of services are requested, quarterly questionnaires are submitted with data on the items requested for TSA purposes.

2.3.2.2   TSA table 2

As explained above, the data of TSA table 2 of the TSA-RMF corresponds to two transactions of National Accounts: On the one hand the major part of domestic tourism consumption is usually related to personal trips, and therefore belongs to household final consumption in National Accounts. On the other hand, the remaining domestic tourism expenditure is linked to business trips that have to be recorded as intermediate consumption in National Accounts.

The Household Budget Survey is one of the main sources used to estimate household final consumption. Although this survey produces useful data for some tourism related products according to the COICOP classification (for instance package tours), for other tourism related products additional information is required to be able to identify the part of the household final consumption that is linked to tourism. For this reason, countries compiling TSA have

launched new household surveys to obtain further information on their trips. These surveys are either attached to the Household Budget Survey as a module, or they are conducted as independent and specifically tourism oriented surveys. Both types of surveys are generally able to produce both annual and quarterly data, as needed for an estimation of domestic tourism consumption.

Generally speaking, there are two types of sources to estimate domestic tourism consumption linked to business trips. The chief advantage of surveys addressed to enterprises is that companies have better information on the expenditure derived from business trips than employees. The downside of these surveys is that usually the information is only available on a yearly basis (so it can be used to apply the final demand approach for the reference years for which SUT have not been compiled, but it cannot be used for quarterly estimates of the tourism GDP). Household oriented surveys do provide such information, and although data quality may be lower, it usually is available on a quarterly basis.

Finally, it should be underlined that there are some other additional sources that can produce useful information to estimate one or both components of domestic tourism consumption. For instance, the Spanish Collective Accommodation Survey collects data on the number of nights according to different rates, which in turn allows to have an approximation of the number of nights linked to business trips and for other purposes; or the service sector activity indicator that provides monthly data on the revenues generated from households and enterprises.

2.3.2.3 TSA table 4

Apart from inbound and domestic tourism consumption, TSA table 4 contains two new elements: second homes services on own account and tourism social transfers in kind.

For the former, the Spanish Ministry of Housing publishes a quarterly indicator of the stock of dwellings that can be used as a quantity indicator, and as a price indicator the CPI for rents that is published by the National Statistical Office.

For the latter, the Spanish National Accounts has not determined a tourism individual consumption of the NPISH. Only the general government sector provides individual non-market services benefitting visitors (a social tourism programme oriented to the elderly). The total of this item over the total tourism demand is almost negligible. However, due to the nature of this expenditure there are some administrative sources which collect this type of data.

2.3.3 Complementary Information

Although tourism GDP is regarded the most prominent indicator of the relevance of tourism to the overall economy, it is useful to complement this information with other indicators, aiming at describing in a more comprehensive and complete manner the effect of tourism in different spheres when information from the SUT cannot be used.

From the demand point of view, apart from the tourism GDP via demand, it could be useful for users to have explicit information on the different elements of the demand side:

- Inbound tourism
  BoP "travel" item (credits)
  BoP "passenger transport services" (credits)
  Total inbound tourism consumption

- Outbound tourism
  BoP "travel item" (debits)
  BoP "passenger transport services" (debits)
  Total inbound tourism consumption

- Domestic tourism
  Domestic tourism expenditure linked to trips for personal purposes
  Domestic tourism expenditure on business trips
  Total domestic tourism consumption

From the supply perspective, it might be of interest for users to incorporate some indicators on the economic performance of tourism related industries for reference periods during which a full TSA has not been compiled. In case a calendar year is the reference period, the source of information obviously is the Annual Structural Business Survey. For short-term TSA it would be necessary to resort to indicators on the economic performance of the service sector, such as indicators on revenues, employment, nights in collective tourism accommodation establishments etc.

In order to set up a framework for the supply and demand estimates as complete as possible, the set of tables could be extended by adding complementary tables on tourism related data with different scopes. These tables may contain any kind of information available that could help to gain a better understanding of tourism activity in the country of reference, such as:

- Data on physical flows, such as the number of visitors and nights of inbound and outbound visitors, number of domestic trips etc.;
- Information about the number of tourism related enterprises according to different characteristics (revenues, number of employees etc.);
- Price indices of tourism products;
- Direct investment in the country of reference by foreign companies in tourism related industries;
- Direct investment abroad by resident companies in tourism related industries.

2.3.4 Conclusions

With a view to estimating the contribution of tourism to GDP, the final demand proposal should be regarded as a complementary approach to the one proposed in the international guidelines, since the two methods provide different data sets that, taken together, are useful to satisfy the information requirements of qualified users.

The primary contributions of the final demand procedure are as follows:
- Even for periods of reference for which no information on SUT is available, it allows obtaining an assessment of the role of tourism in the economy of reference. What is more, it can be applied not only for the most recent years, but for short-term estimations as well. This approach is most useful for countries which do not compile TSA on a yearly basis, since they can at least estimate the impact of tourism for inter-TSA periods this way.
- It gives a more extensive and comprehensive description of the relevance of tourism to the overall economy - given that it provides an estimate of the total effect of tourism in the GDP - while the supply approach of the TSA-RMF only considers the direct effects on the GDP.
- Apart from methodological and valuation considerations, this method also allows for an easy integration of tourism gross fixed capital formation (GFCF) and collective tourism consumption, while the supply method does not provide a satisfactory answer on how this transaction can be tackled.

The most relevant shortcoming of this demand approach is that it fails to provide relevant information on the effects of tourism to the GVA of tourism related industries. Although the impact of tourism on GDP might be regarded as the key indicator of the importance of tourism, its impact among the different tourism related industries is not uniform. For an in depth sectoral analysis of the effects of tourism it is necessary to resort to the TSA-RMF, which provides the key tourism ratios from the supply side for tourism related industries.

2.4 Proposal for Key Figures to be used for an Intermediate Short-Term Update of the Basic TSA Information

Due to restricted financial resources and possibly differing statistical priorities it cannot be expected that all Member States within the EU will compile the complete set of TSA tables on an annual basis. On the other hand there will be a significant interest for the estimation of recent data for key tourism figures by national tourism boards and policy makers. The production of up to date indicators on tourism is of crucial importance in an international context where this 'industry' is considered to be an important source of economic growth and employment.

Hence, there is a need for drawing up a proposal for a reduced set of tables consisting of a reduced number of figures/cells within these tables. They should meet two requirements, that is, to provide more up-to-date information with a higher degree of timeliness while at the same time delivering information on the main aspects of the economic development of the tourism sector even without the necessity of compiling a comprehensive set of TSA tables. Such a restricted data set could be provided by all Member States which already have implemented the TSA.

The following proposal recommends carrying out the update of TSA key-figures on the basis of the preceding year for which a national TSA has been compiled comprehensively. At least the following TSA tables should be fully available:

- TSA table 1: Inbound tourism expenditure by products and classes of visitors
- TSA table 2: Domestic tourism expenditure by products, classes of visitors and types of trips
- TSA table 4: Internal tourism consumption by products
- TSA table 6: Total domestic supply and internal tourism consumption (at purchasers´ prices)
- TSA table 7: Employment in the tourism industries

In an EU-wide perspective, the development of the proposal of TSA key-figures - to be used for an intermediate short-term update of the basic TSA information in those intermediate periods for which a comprehensive TSA is not being compiled - has to take into account the official data transmission programmes and the specified time limits for National Accounts data (Regulation (EC) No 1392/2007 of the European Parliament and the Council) and Tourism Statistics Data (Tourism Directive 95/57-EC and the expected future regulation) as well as their appropriateness to depict the main relevant aspects of the economic evolution of the tourism sector.

Possibly the following proposal for a set of key figures[8] may not be valid in the same way for all 27 Member States of the EU due to differences concerning the availability of primary data sources. The latter has special relevance with regard to the recommended structural detail level of the TSA characteristic product of inbound and domestic tourism expenditure. In many Member States such a high degree of detail is not surveyed annually because it is beyond the prescribed regulation on National Accounts data and the Tourism Statistics Directive (and future regulation).

The central idea of this proposal for an intermediate short-term update of basic TSA information is the **gradual approach** within a period of three years which bears in mind the actual national data availability and thus recommends a **three-stage estimation procedure** of TSA key figures with regard to the **reporting year T**. To put this proposal to practice there should be no critical burden with regard to the required financial and human resources for stages 1 and 2 because the relevant data is directly available within the existing primary and secondary data sources of the national statistical system.

In **stage 1** for reporting year T in year T+1 only a few aggregate totals of the tourism consumption components are estimated.[9] This is because only aggregate (total) demand-side information on tourism consumption by households and aggregate National Accounts figures are typically available in this early stage.

As a minimum, the following tourism related aggregate demand-side variables should be updated with a delay of one year. Besides some convincing tourism-related macroeconomic indicators should also be derived:

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[8] The reference for the proposal at hand is the new TSA-RMF 2008, but the basic idea underlying the proposal is also applicable to national TSA based on the TSA-RMF 2000.

[9] The relevant cells have been marked yellow within the attached TSA tables 1, 2 & 4.

Set of TSA key figures compiled for the reporting year in T+1: tourism consumption

- o Total inbound tourism expenditure (ITE), compiled within TSA table 1
- o Total domestic tourism expenditure (DTE), compiled within TSA table 2 [10]
    - ▪ Excursionists (optional)
    - ▪ Tourists (optional)
- o Total internal tourism consumption in cash (ITCc), compiled within TSA table 4

Tourism-related macroeconomic indicators:

- o Importance of inbound and domestic tourism expenditures (ITE, DTE) related to the total internal tourism consumption in cash (ITCe)
- o Share of total internal tourism consumption in cash (ITCc) in the final consumption expenditure by households (HFCE)

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[10] Due to varying data availability across Member States with regard to the two classes of domestic visitors (excursionists, tourists), the estimation of this variable is optional (marked grey within the attached TSA-tables). In a positive case the total domestic tourism consumption can be compiled bottom-up by adding up the two sub-classes (displayed by a grey arrow within the attached TSA-tables).

TSA table 1: Inbound tourism expenditure by products and classes of visitors

Products	Tourists (overnight visitors) (1.1)	Excursionists (same-day visitors) (1.2)	Total visitors (1.3) = (1.1) + (1.2)
A. Consumption products (*)			
A.1 Tourism characteristic products			
1 – Accommodation services for visitors		X	
1.a – Accommodation services for visitors other than 1.b		X	
1.b – Accommodation services associated with all types of vacation home ownership		X	
2 – Food and beverage serving services			
3 – Railway passenger transport services			
4 – Road passenger transport services			
5 – Water passenger transport services			
6 – Air passenger transport services			
7 – Transport equipment rental services			
8 – Travel agencies and other reservation services			
9 – Cultural services			
10 – Sports and recreational services			
11 – Country-specific tourism characteristic goods			
12 – Country-specific tourism characteristic services			
A.2 Other consumption products			
B.1 Valuables			
TOTAL			ITE

X does not apply

(*) The value of **A. Consumption products**, is net of the gross service charges paid to travel agencies, tour operators and other reservation services.

TSA table 2: Domestic tourism expenditure by products, classes of visitors and types of trips

Products		Domestic tourism expenditure		
		All types of trips		
	...	Tourists (overnight visitors) (2.7) = (2.1) + 2.4)	Excursionists (same-day visitors) (2.8) = (2.2) + (2.5)	Visitors (2.9) = (2.3) + (2.6)
A. Consumption products (*)				
A.1 Tourism characteristic products				
1 – Accommodation services for visitors			X	
1.a – Accommodation services for visitors other than 1.b			X	
1.b – Accommodation services associated with all types of vacation home ownership			X	
2 – Food and beverage serving services				
3 – Railway passenger transport services				
4 – Road passenger transport services				
5 – Water passenger transport services				
6 – Air passenger transport services				
7 – Transport equipment rental services				
8 – Travel agencies and other reservation services				
9 – Cultural services				
10 – Sports and recreational services				
11 – Country-specific tourism characteristic goods				
12 – Country-specific tourism characteristic services				
A.2 Other consumption products				
B.1 Valuables				
TOTAL				DTE

X does not apply

(*) The value of A. Consumption products, is net of the gross service charges paid to travel agencies, tour operators and other reservation services.
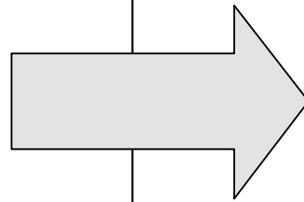
TSA table 4: Internal tourism consumption by products

Products	Visitors final consumption expenditure in cash			Other components of visitors consumption (4.2)	Internal tourism consumption (4.5) = (4.3) + (4.2)
	Inbound tourism expenditure (1.3)	Domestic tourism expenditure (2.9)	Internal tourism consumption in cash (1.3) + (2.9) = (4.1)		
A. Consumption products (*)					
A.1 Tourism characteristic products					
1 – Accommodation services for visitors					
1.a – Accommodation services for visitors other than 1.b					
1.b – Accommodation services associated with all types of vacation home ownership					
2 – Food and beverage serving services					
3 – Railway passenger transport services					
4 – Road passenger transport services					
5 – Water passenger transport services					
6 – Air passenger transport services					
7 – Transport equipment rental services					
8 – Travel agencies and other reservation services					
9 – Cultural services					
10 – Sports and recreational services					
11 – Country-specific tourism characteristic goods					
12 – Country-specific tourism characteristic services					
A.2 Other consumption products					
B.1 Valuables					
TOTAL	ITE	DTE	ITCc		ITC

(*) The value of A. Consumption products, is net of the gross service charges paid to travel agencies, tour operators and other reservation services.

Due to the fact that specific data availability improves over time it is proposed to provide more detailed information on tourism consumption as well as production, value added and employment in the tourism industries in **stage 2** for the reporting year T in year T+2.[11] This is because the required information concerning the product specific tourism expenditure pattern as well as the relevant industry specific structural data for the supply-side of the economy in most of the EU-Member States is only available with a delay of two years.

With a delay of two years the aggregate demand-side variables should be supplemented with product specific detail information recommended within the TSA-RMF: [12]

Set of TSA key figures compiled for the reporting year in T+2: tourism consumption
- o Inbound tourism expenditure (structure), compiled within TSA table 1
- o Domestic tourism expenditure (structure), compiled within TSA table 2 [13]
  - ▪ Excursionists (optional)
  - ▪ Tourists (optional)
- o Internal tourism consumption (structure), compiled within TSA table 4

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11   The relevant cells within the TSA-tables have been marked green.

12   The structural vectors on tourism consumption by product categories (columns of TSA table 1, 2 and 4) should only be published for the reporting year T in year T+2 if this data can be directly balanced within the macroeconomic framework but without using the complex framework of TSA table 6 (compare stage 3). The latter depends on the country-specific tourism consumption related data situation as well as the compilation practice in the preceding year with a comprehensive set of TSA tables.

13   Compare with footnote 10

With regard to the supply-side, at least the following variables should be updated. Besides some tourism-related macroeconomic indicators should also be derived:

Set of TSA-key figures compiled for the reporting year in T+2: tourism supply
- o Total output in the tourism industries (structural), compiled within TSA table 6
- o Total intermediate consumption in the tourism industries (structural), compiled within TSA table 6
- o Value added in the tourism industries (structural), compiled within TSA table 6
- o Employees in the tourism industries (structural), compiled within TSA table 7

Tourism-related macroeconomic indicators:
- o Contribution of output resp. production in the tourism industries (GPTI) to the gross production of the economy (GP)
- o Contribution of value added in the tourism industries (VATI) to the gross value added of the economy (GVA)

The data compiled within the first two stages can be made directly available by the national statistical system outside the complex estimation framework of the existing national TSA (i.e. especially TSA table 6) without major adoptions. The workload for an intermediate update of TSA key figures should thus be relatively small. This is not the case for the optional third and last stage of reporting year T in T+3.

Within this last **stage 3**, the detailed information on the national Supply and Use-Table (SUT) has to be endogenised within the complex framework of TSA-table 6.[14] In this TSA core table, total domestic supply and tourism consumption has to be balanced at the TSA characteristic product and industry level, while tourism value added (TVA) has to be estimated in a bottom-up procedure as recommended within the TSA-RMF.[15] This is only possible by introducing the complete structural demand-side information on internal tourism consumption (ITC) as well as by netting package tours with regard to all product components of the package on the demand and supply-side of the TSA.

In the case of missing actual statistical information to substantiate tourism related transaction within the compilation framework of TSA table 6 for the reporting year T in year T+3 it is recommended to check the plausibility for taking over the tourism characteristic ratios of the last comprehensive reference TSA. In a "perfect" country-specific TSA implementation approach this should be the reporting year T-1.

To reduce the workload of the overall updating process of stage 3, it is recommended to ensure a strong link between the NA and its annual SUT. Such a procedure has many advantages: It facilitates the overall TSA compilation process as well as the update procedure of the TSA, it makes easier the integration and comparison of tourism figures in the context of the national economy, and the integrative nature of this compilation approach will help in saving resources.

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[14] The relevant cells within the TSA-tables have been marked blue.

[15] The displayed blue marked arrows within TSA table 6 indicate the general estimation procedure.

TSA table 6: Total domestic supply and internal tourism consumption (at purchasers´ prices)

Products	TOURISM INDUSTRIES												Other industries		Output of domestic producers (at basic prices)		Imports *		Taxes less subsidies on products of domestic output and imports		Trade and transport margins		Domestic supply (at purchasers price)	Internal tourism consumption	Tourism ratio on supply
	1-Accommodation for visitors		1.a – Accommodation services for visitors except in 1.b		1.b – Accommodation services associated with all types of vacation home ownership		...		12 – Country-specific tourism industries		TOTAL														
	output (5.1)	tourism share (in value)	output (5.1a)	tourism share (in value)	output (5.1b)	tourism share (in value)	output (5....)	tourism share (in value)	output (5.12)	tourism share (in value)	output (5.13)	tourism share (in value)	output (5.14)	tourism share (in value)	output (5.15) = (5.13) + (5.14)	tourism share (in value)	output (6.1)	tourism share (in value)	output (6.2)	tourism share (in value)	output (6.3)	tourism share (in value)	(6.4) = (5.15) + (6.1) + (6.2) + (6.3)	(4.3)	(6.5) = (4.3) / (6.4) * 100
A. Consumption products (*)																										
A.1 Tourism characteristic products																										
1 – Accommodation services for visitors																						X	X			
1.a – Accommodation services for visitors other than 1.b																						X	X			
1.b – Accommodation services associated with all types of vacation home ownership																						X	X			
2 – Food and beverage serving services																						X	X			
3 – Railway passenger transport services																						X	X			
4 – Road passenger transport services																						X	X			
5 – Water passenger transport services																						X	X			
6 – Air passenger transport services																						X	X			
7 – Transport equipment rental services																						X	X			
8 – Travel agencies and other reservation services																						X	X			
9 – Cultural services																						X	X			
10 – Sports and recreational services																										
11 – Country-specific tourism characteristic goods		X		X		X		X		X		X		X		X		X		X						
12 – Country-specific tourism characteristic services																						X	X			
A.2 Other consumption products																						X	X			
B. Non consumption products																						X	X			
B.1 Valuables		X		X		X		X		X		X		X		X		X		X		X	X			
B.2 Other non consumption products																						X	X			
I. TOTAL OUTPUT (at basic prices)											GPTI				GP									ITC	
II. TOTAL INTERMEDIATE CONSUMPTION (at purchasers price)																									
(I-II) TOTAL GROSS VALUE ADDED (at basic prices)											VATI				GVA	TVA									

X does not apply

... Means that all tourism industries of the proposed list have to be considered one by one in the enumeration

* Imports excludes direct purchase of residents abroad

(*) The value of **A. Consumption products**, is net of the gross service charges paid to travel agencies, tour operators and other reservation services.

TSA table 7: Employment in the tourism industries

Tourism industries	Number of establishments	Number of jobs by status in employment (*)						
		employees			self employed			
		Male	Female	Total	Male	Female	Total	...

1 – Accommodation for visitors
   1.a – Accommodation services for visitors other than 1.b
   1.b – Accommodation services associated with all types
      of vacation home ownership
2 – Food and beverage serving industry
3 – Railway passenger transport
4 – Road passenger transport
5 – Water passenger transport
6 – Air passenger transport
7 – Transport equipment rental
8 – Travel agencies and other reservation services industry
9 – Cultural industry
10 – Sports and recreational services
11 – Retail trade of country-specific tourism characteristic goods
12 – Country-specific tourism industries								

TOTAL								

(*) in the reference period

3

Chapter 3 - Estimating the Economic Impact of tourism

3 Estimating the Economic Impact of Tourism

Tourism plays a significant role in many economies. Experts faced with the problem of measuring the size of tourism and, particularly, its contribution to GDP, have proposed harnessing the so-called Tourism Satellite Account (TSA). Developing a workable approach took many years of efforts by numerous institutions, countries and individuals engaged in finding a methodological framework for building and implementing a TSA that would be accepted by all players (Delisle 1999; Heerschap *et al.* 2005; Meis 1999; Nordstrom 1996; Paci 1998; OECD 2000; Rivera 1999; UN *et al.* 2001).

A crucial assumption for building a TSA was related to the fact that, given that tourism is regarded as demand-defined, only effects generated by the direct economic relationship between guest and producer are considered (Barber-Dueck and Kotsovos 2003; Kass and Okubo 2000; Meis 1999; Smith and Wilton 1997). But if the focus is solely on the economic effects resulting from the direct relationship between consumer and producer, it is difficult to compare the demand side-measured, tourism-related GDP to the overall GDP, chiefly because the overall GDP also includes indirect effects caused by economic interlinkages. In other words, the tourism value added captured on the basis of pure TSA definitions will not count such value added effects generated by deliveries of industries such as agriculture, food and beverage, banking or insurance for the tourism industries (e.g. hotels, restaurants): accordingly, the TSA value added underestimates the true tourism-related value added since the TSA concept does not consider indirect effects. As a consequence, expressing tourism value added as a percentage of GDP would make sense only if the tourism-related value added triggered by indirect effects was considered as well.

3.1 Basic Principles of the TSA Techniques

The direct economic impact of tourism consumption can be measured (here in terms of how much net value added is directly created) by TSA methods. The TSA is an attempt to record and analyse tourism as an economic phenomenon in terms of the national accounts and other business statistics. To this end, national accounts serve as a framework and integration matrix. Nevertheless, the TSA is much more than merely a subsystem of national accounts, primarily because additional information may be added as required.

The TSA concept makes a fundamental distinction between "tourism-specific", and "non-tourism-specific" production, which, accordingly, produces "tourism-specific" and "non-tourism-specific" goods and services. Consequently, tourism consumption comprises "tourism-specific" services (accommodation, passenger transport, travel agencies, e.g.) and "non-tourism-specific" (e.g. retail trade) goods and services. The latter are those that are supplied or rendered mostly to non-tourists.

In order to set out and arrange the information on the supply and demand side, the TSA uses a structure which comprises the three basic units of the national accounts (OECD 2000; Commission of the EU et al. 2001 & 2008):

    (1) consumer account (to specify demand);
    (2) production account (to specify supply);
    (3) goods account (combining production and demand).

Basically, the TSA concept in its core area refers to "tourism industries" (in the more narrow sense of the word), i.e. primarily hotels, restaurants, travel agencies, culture, entertainment and travel insurance. Even though the term "tourism industry" is the customary expression, it is nevertheless problematic because tourism is not an "industry" in the traditional sense of the word – meaning a sector that produces a similar product or renders a similar service or has the same production function.

One problem encountered in the attempt to determine the impact of tourism is the fact that national accounts depict sectors on the basis of their production (i.e. their output) rather than on the basis of demand, whereas the tourism industry is defined by its consumers, i.e. the tourists, at the time of consumption (Smith and Wilton 1997).

3.2 Adjusting some TSA Variables in a Macroeconomic Context

The TSA considers only direct tourism demand, which includes spending by (or on behalf of) the visitor for goods and services prior to, during, after a journey, and made in connection with the journey (Smeral 2006). In order to measure the economic importance of tourism in the TSA context, it is therefore necessary to focus on the direct link between the (spending) tourist and the (receiving) supplier. Based on these definitions, the TSA shows up these links and the value added from them (Smeral 2005).

With the tourism definition used by the TSA reduced to direct physical and economic links, a range of indirect effects caused by economic inter-linkages is not given proper consideration, so that the true total economic impact of tourism is not captured. As a result, national value added by tourism based on a TSA may be compared only with the TSA results of other countries or with satellite accounts computed in a similar manner for other sectors. Expressing the value added by tourism measured only through TSA techniques as a percentage share of the overall national GDP is conceptually limited in that the missing indirect effects of tourism down-bias the total impact of tourism.

Such direct and indirect effects, as well as the effect of tourism on the overall national economy, can be described in an input-output analysis, a method that enables us to compute indirect value added effects in addition to direct ones.

The basic concept underlying the input-output model is that demand for products of a given industry determines more than just its own (net) output; it also indirectly influences production in the upstream industries. An indirect output in turn results in inputs from other industries. On the other hand, these upstream industries require products from other industries for their own production, resulting in demand cycles. In other words: an autonomous increase in demand results in a multiplier process which creates direct and indirect value added effects. The smaller the direct and indirect leakages (imports of the country), the greater are the domestic effects from an increase in demand.

Further, the TSA framework allocates all expenses due to business trips to final tourism demand so that they add to the value added level. When comparing the TSA value added data to the national value added, an adjustment is therefore necessary (same as with accounting for the indirect effects) since the expenses of domestic enterprises during business trips for accommodation and transportation constitute a cost in the process of their own value added creation and are treated as intermediary consumption in the National Accountant point of view. In the context of estimating the total economic impact of tourism, the tourism business expenses therefore have to be deducted from internal tourism consumption.

3.3   Some Results for Austria

The most recent basic data for the Austrian national and regional TSAs as presently available refer to 2007 (Laimer and Smeral 2009a & 2009b; Smeral 2006).

According to the calculation for 2007, 50.3% of the overall spending of € 30.37 billion was by foreign guests, 46.5% was expended by Austrians, and 3.2% was spent by Austrians during their stay in their second homes. The TSA concept allows a breakdown of the total demand by products and services. In 2007, the largest part of overall tourism expenditure in Austria was spent on accommodation (35.5%), while 25.4% was paid for restaurant services (see Table 2). Other major expenditure groups are shopping (20.1%) and transport (11.8%). Entertainment, culture, sports and other services make up almost 7.1% of total spending.

For the country as a whole, the direct value added effect generated by tourism was calculated in line with the TSA concept at € 14.55 billion (including business trips by residents). In terms of GDP, this figure – not adjusted for indirect effects – translates into a share of 5.4%. When applying the input-output value added multipliers to the adjusted TSA expenditure results for Austria (excluding business trips by residents) as a whole, direct and indirect value added effects were € 22.29 billion in 2007, which means that the tourism industry contributed 8.2% to the Austrian GDP.

The macroeconomic importance of tourism in Austria, 2007

Aggregates	Austria	
	Million €	Percentage share in GDP
Tourism Satellite Account – direct value added		
Excluding business trips of residents	13,581	5.0
Including business trips of residents	14,553	5.4
TSA adjustments – direct and indirect value added		
Tourism [a]	22,289	8.2

Source: Statistik Austria, Austrian Institute of Economic Research (WIFO). a. Austria excluding business trips of residents

For Austria as a whole, it was found that in 2007 the direct and indirect value added effects of tourism, excluding business trips by Austrians, together contributed 8.2% to the GDP whereas direct effects by themselves only added up to 5.4%.

When comparing the tourism value added adjusted for indirect effects to the unadjusted figure, we find that the TSA per se clearly tends to underestimate the economic impact of tourism for Austria. The gap amounted to about 3 percentage points as a contribution to GDP.

3.4 Conclusion

The macroeconomic impact of tourism and its contribution to the overall value added is a crucial parameter for economic policy. In order to properly calculate the total economic impact of tourism it is necessary to correct the TSA results for indirect effects triggered by tourism as the TSA concept considers only the direct value added effects. For an overall economic perspective, business trips by residents need to be excluded to obtain correct impact figures and avoid double counting.

4

Chapter 4 - The Use of TSA Results in the Broader Context of Macroeconomic Analysis

4   The Use of TSA Results in the Broader Context of Macroeconomic Analysis

The economic evaluation of tourism demand and its impact on the overall economy in general is a topic which many researchers and destination managers take an interest in. During the last two decades the research on this topic has analysed this issue using different methods. On the one hand there has been a focus on the development of estimation methods to directly forecast tourism demand (i.a. Witt and Witt 1992; Frechtling 2001; Li, Song, and Witt 2005). On the other hand emphasis has been placed on analysing the macroeconomic impact of tourism in the context of a macroeconomic modelling framework using an Input-Output (IO) model (i.a. Fletcher 1989; Smeral 1995; West and Gamage 2001) or using a complex CGE-model (i.a. Zhou, et al. 1997; Dwyer, Forsyth, and Spurr 2006, 2007). Moreover, and following the compilation of national Tourism Satellite Accounts (TSA) during the last years, its results have been integrated in the different model types (i.a. Blake, et al. 2001; Kuhbach and Herauf (2005); Smeral 2006; Ahlert 2007).

Information about the overall net-economy wide impact of tourism demand on income and employment cannot be directly obtained from available statistics. Rather, this information must be estimated via an economic model which has the ability to combine the details of National Accounts data with the corresponding tourism specific demand data. Regarding consistency, the latter should preferably contain detailed TSA results. The following subsection explains how the resulting direct and indirect effects on production, income and employment can be assessed within a macroeconomic model and what requirements the model to be used should fulfil.

4.1   Estimating the Total Economic Impact of Tourism

The tourism activity definition used by the TSA is reduced to direct physical and economic links, with only one exception made for package tours. This delimitation however means that a range of indirect effects caused by economic inter-linkages is not taken into account. These secondary effects – indirect or induced – that tourism generate are not directly treated as part of tourism activity. Thus the TSA approach does not produce information on the total impact of tourism because the TSA does not measure any indirect impact of tourism expenditure.

Information about the total economic impact of tourism consumption cannot be directly obtained from available statistics. They can only be estimated by using an economic model. Due to the fact that within the TSA tourism consumption data is described in deep product-specific detail (which is consistent with the national classification used in national IO Accounts) the standard IO model should be applied. The static open Leontief model provides us with a powerful economic analysis tool in form of an Input-Output analysis.

The national IO accounts are data sets used in Input-Output analysis.[16] By using an IO table, it is possible to express the technical relationship between output and intermediate consumption as a technical coefficient, and establish a matrix of technical coefficients (A) in which each cell represents the required value of input i for the production of 1 unit value of output j. The

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[16]   ESA 95 requires EU member states to transmit IOTs every five years in a standardized format for 60 sectors and products.

following two equations show the general idea of estimating the total impact of tourism consumption measured within the TSA on production and employment.

(1) $x = (I - A)^{-1} * c^{TSA}$ Total Impact on Production

(2) $e = B_D * (I - A)^{-1} * c^{TSA}$ Total Impact on Employment

x – production vector

$(I - A)^{-1}$ – Leontief-inverse resp. matrix of inverse coefficients

I – identity matrix

A – technology matrix

c^{TSA} – vector of internal tourism expenditure (measured within TSA)

e – employment vector

B_D – diagonal matrix of employment-input coefficients

The open Leontief model determines the amount of production and/or employment needed to satisfy an increase in demand by estimating all secondary effects on the basis of related intermediate demand. In tourism, the chain of effects enabling the activities directly serving visitors to do so is called the indirect effects of visitor demand. The most useful advantage of this kind of IO analysis in the field of tourism is the ability to see how change in tourism consumptions affects the entire economy.

The impact of tourism is a crucial parameter for economic policy. In order to properly estimate the total economic impact of tourism it is necessary to increase the TSA results by indirect effects triggered by tourism as the TSA concept only considers direct value added effects. For countries like Austria, Germany, Slovenia etc., this instrument has been used for estimating the total impact of tourism household consumption.

The instruments of IO analysis are generally used to estimate the direct and indirect effects of production and employment. Although the IO analysis – at least as used in the simple static open Leontief model (Miller and Blair 1985) – affects the result due to inaccuracies arising from its restrictive assumptions, it is still the only method that permits a systematic documentation of all direct and indirect effects of value-added effects. Smeral emphasises that only this type of complementary model calculation can provide comprehensive information about the contribution of tourism to macroeconomic performance (Smeral 2005 & 2006).

4.2   Impact Assessment due to Changes in Tourism

With regard to long term policy simulations estimating the potential net-overall effects of changes in tourism behaviour or tourism policy within a longer future period (for instance during the next 10 or 15 years), a restrictive modelling framework with constant coefficients is insufficient. This is all the more true in view of the increasing globalisation of product markets and the resulting international division of labour and product diversity. Based on varying factor productivity, the overall net-effects on income and employment of the demand

for hotel/restaurants or passenger transport industry services differ considerably from those on foodstuffs or clothes.

For an accurate mid to long-term impact assessment reflecting changes in tourism demand it is often useful to link the database to models with broader behavioural mechanisms like IOE models[17] or CGE models[18]. Such complex computable models explain the economy-wide net-impacts of policies on the basis of behavioural assumptions and/or equations and capture the economic cycle relations of revenue and expenditure as well as the interaction between all sectors of the economy.

In these more complex macro-economic models the net-economy wide impacts are the result of different adjustment responses within the factor and product markets. With regard to the three targets (production, income and employment), they reflect the following mechanisms:

(1) Direct production effects take into account only those effects connected to direct tourism demand (primary stimulus). They are applied exclusively in those sectors which benefit directly from tourist spending.

(2) Indirect production effects appear via remuneration for purchased products in those companies which supply goods and services to the companies producing directly demanded touristic consumer goods, i.e. in the corresponding suppliers and sub suppliers for intermediate products.

(3) In [income]-induced production effects (defined in accordance with Keynes and corresponding to the multiplier model) the partial redisbursement of direct and indirect income earned in the course of the production process trigger a multiplier process which induces further production.

(4) Price effects occur due to changes in demand and unit costs, which directly influence relative prices of all dependent demand variables.

(5) Production and price effects have a direct impact on wage formation and thus on employment.

(6) Finally, such models also reflect the national tax system. As a result, the burden of sectoral cost structures on production and the burden on private households as well as the application of taxes and charges as part of the government expenditure activity must be represented in relation to the macroeconomic model.

Economic impact studies aim to measure economic benefits, that is the net increase in the wealth of residents resulting from tourism, measured in monetary terms, over and above the levels that would prevail in its absence. This change in wealth might occur not only due to increased flows of income to households but also due to the change in net worth induced by the change in market value (positive or negative) of existing assets, both produced and non produced, as a response to the induced change in demand for such types of assets.

Such complex model-based impact analyses investigating the effects of selected tourism relevant results on internal tourism expenditure have been done for Australia, United States

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[17] **Input-output econometric** (IOE) models extend the IO framework by integrating econometric relationships, estimated from time series or panel data, into the IO framework. By incorporating econometric relationships, IOE addresses the shortcoming of average relationships in simple IO analysis and provides the adjustment path of the economy to an economic impact. IOE models also allow the incorporation of supply side constraints. These constraints are incorporated via econometric relationships providing an estimate of the price responsiveness of goods as a result of changes in demand and supply. Consumer and producer behaviour is affected by these price changes, resulting in changes in the consumption and production patterns.

[18] **Computable general equilibrium** (CGE) models are a class of economic model that use actual economic data to estimate how an economy might react to changes in policy, technology or other external factors. CGE models are derived from the input-output models pioneered by Leontief, but assign a more important role to prices by using strong micro-economically consistent behavioural assumptions (perfect competition with cleared markets and completely flexible prices, perfect information; e.g.). The empirical component of the CGE model is concentrated in one IO table.

and Germany. Besides policy assessment, the main areas of application have been in the field of event analysis such as the Olympic Games and the World Cup (i.a. Ahlert 2001 & 2006), market research such as growth in tourism markets or changes in tourism demand (i.a. Dwyer et al. 2000, Ahlert 2008) and shock analysis (e.g. terrorists attacks [i.a. Blake & Sinclair 2003], natural disasters [i.a. Yeoman et al. 2008], pandemics).

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