

# The Economic Impact of Germany's Tourism Industry

*A modular Tourism Satellite Account (TSA) for  
calculating income and employment effects of  
the German tourism industry*

**Short Version**

Berlin, March 2012

**DIW econ GmbH**

Dr. Ferdinand Pavel

Mohrenstraße 58

10117 Berlin

Germany

Phone +49.30.20 60 972 - 0

Fax +49.30.20 60 972 - 99

[fpavel@diw-econ.de](mailto:fpavel@diw-econ.de)

[www.diw-econ.de](http://www.diw-econ.de)

## Executive Summary

We investigate the overall economic impact of Germany's tourism industry. Our assessment is based on an internationally established approach which is consistent with official economics statistics. The focus of the investigation is on estimating the impact of consumption expenditures of tourists on income and employment in Germany. The main results are as follows:

- Aggregate tourism expenditures in Germany amount to **278.3 billion euros** in 2010. The largest part can be attributed to **domestic tourists** (241.7 billion euros or 87%). Foreign tourists constitute for the remaining 36.6 billion euros (13%).
- **Private trips** account for a **larger share** in total tourism expenditures (79%) **than business trips**.
- Three quarters of total tourism expenditures are spent on **tourism-characteristic products** such as accommodation and restaurant services, air transport services, cultural, sports and recreational services as well as fuel.
- The remaining quarter of total tourism expenditures are spent on the **consumption of goods** such as clothing, jewellery, electronics or print products, which tourists typically buy from retailers during their trips. This stresses the relevance of **shopping activities** for the tourism industry.

These consumption expenditures have the following **direct and indirect** impacts on income and employment in Germany:

### Impact on income

- The production of the goods and services that tourists in Germany consume generates a gross value added of **97.0 billion euros** (*direct effect*) in 2010. This amounts to a share of **4.4%** in total gross value added of Germany.
- The total contribution of tourism to gross value added in Germany increases to **214.1 billion euros** once two additional effects are accounted for:
  - i) additional gross value added generated from the production of intermediate inputs along the value chain (*indirect effects*), and
  - ii) the impact of direct and indirect effects on household income (*induced effect*).

Once *indirect* and *induced effects* are accounted for, the total share of tourism in gross value added in Germany increases to 9.7%.

### Impact on employment

- The production of goods and services that tourists in Germany consume generate employment for **2.9 million persons** (*direct effect*). This corresponds to **7.0%** of all employed persons in Germany.
- The total contribution of tourism to employment in Germany increases to **4.9 million persons** once additional effects are accounted for:
  - i) employment caused by the production of intermediate inputs along the value chain (*indirect effects*), and
  - ii) the employment effect of direct and indirect effects on household income (*induced effect*).

Accordingly, the total contribution of tourism to employment in Germany increases to 12.0%.

The **macroeconomic context** of these results is as follows:

- The direct contribution of tourism to gross value added (4.4%) is similar in magnitude to that of the construction sector (4.3%), the education sector (4.6%) or the professional and technical services industry (4.6%). Gross value added in the automobile industry or in the banking and financial services sector (both 2.5%) is smaller.

The direct contribution of tourism to employment in Germany (7.0%) is of similar magnitude to the retail sector (9.2%) and the education sector (5.9%). Other sectors, such as construction (3.0%) or machine building (2.6%), contribute less.

## Table of Contents

Executive Summary .....	iii
1. Introduction .....	2
2. Methodology.....	3
2.1.1 Evaluation of tourism demand .....	5
2.1.2 Evaluation of tourism supply.....	6
2.1.3 The impact of tourism on income and employment .....	8
3. Results .....	10
3.1 Expenditures by foreign visitors.....	10
3.2 Expenditures by domestic visitors .....	11
3.3 Total internal tourism consumption in Germany.....	13
3.4 Tourism supply.....	14
3.5 Impact of tourism on income and employment .....	16
3.5.1 Income effects.....	16
3.5.2 Employment effects.....	20
4. Conclusion .....	23
Appendix: The Tourism Satellite Account (TSA) of Germany (2010) .....	25

## Figures, Boxes and Tables

Figure 1: Classification of visitors .....	4
Figure 2: Expenditures by foreign visitors in Germany (2010).....	11
Figure 3: Expenditures by domestic visitors in Germany (2010) .....	12
Figure 4: Internal tourism consumption in Germany (2010) .....	14
Figure 5: Tourism ratios by industry in Germany .....	16
Figure 6: Comparison of value added shares of different economic activities (2010), including the health (2005) and tourism industry (2010) .....	18
Figure 7: Direct, indirect and induced income effects of the tourism industry in Germany by economic activity (value added in billions of euros, 2010) .....	19
Figure 8: Comparison of shares of total employment of different economic activities (2007), including the health (2005) and tourism industry (2010) .....	22
Figure 9: Direct, indirect and induced employment effects of the tourism industry in Germany by economic activity (number of employed persons, 2010) .....	23
Box 1: International definition of „tourism“ .....	3
Box 2: Compilation of tourism expenditures.....	5
Box 3: Direct, indirect and induced effects.....	9
Table 1: Tourism characteristic products and industries .....	7
Table 2: Value added effects of the tourism industry in Germany (2010).....	17
Table 3: Employment effects of the tourism industry in Germany (2010) .....	20

## 1. Introduction

The German tourism industry, policy makers and the general public have until now no access to reliable statistical information on the economic impact of the tourism industry. Comparing the tourism industry with the rest of the economy or with other industries has therefore not been possible so far. Based on an internationally established methodology, this investigation focuses on quantifying the impact of tourism on income and employment levels as key variables for economic and social policy makers.<sup>1</sup>

A general difficulty in assessing the economic role of tourism is the *supply-side* orientation of official statistics such as the System of National Accounts. Different industries (economic activities) are classified according to the main goods and services that they produce. Based on such information, the economic impact of supply-oriented sectors such as the automobile industry can be readily assessed based on data on production value, value added or employment.

The tourism industry, however, cuts across several sectors such as the accommodation industry, food and beverage serving industries, transport providers, or travel agencies. However, the goods and services that these industries offer are not exclusively consumed by tourists. The obvious difficulty here is that products can only be attributed to tourism to the extent that they are actually consumed by tourists. Specifying the tourism industry therefore requires a *demand-side* approach.

Specifically, assessing the economic impact of tourism requires to first measure tourism consumption and then to relate these findings to the different sectors that produce the consumed goods and services. In doing so, we complement the official economics statistics with additional information to reveal the economic impact of tourism. To deliver accurate and credible results, this additional information must be consistent with the official economics statistics in Germany, in particular the System of National Accounts and the

---

<sup>1</sup> This investigation was commissioned by the Federal Association of the German Tourism Industry (Bundesverbandes der Deutschen Tourismuswirtschaft e.V. (BTW)) and carried out by DIW econ GmbH, the consulting company of DIW Berlin. The project ran from January to December 2011 and was co-financed by the German Federal Ministry of the Economy and Technology (BMW).

input-output table.<sup>2</sup> A tourism statistics compiled in this way is known as a *Tourism Satellite Account* (TSA).

## 2. Methodology

Our methodology is based on the *2008 Tourism Satellite Account: Recommended Methodological Framework* by the United Nations Statistical Division (UNSD), the United Nations World Tourism Organisation (UNWTO), the OECD and Eurostat. In this way we ensure that all results are internationally comparable and fully compatible with official economic statistics such as the German System of National Accounts.

### Box 1: International definition of „tourism“

#### Tourism consists of trips with...

1. ...a principal destination outside the traveller's usual environment\*;
2. ...any principal purpose (business, leisure or other personal purpose\*\*) other than to be employed by a resident entity in the country or place visited;
3. ...a duration of less than one year.

*UNWTO (2010) - International Recommendations for Tourism Statistics, paragraph 2.9.*

\* *The „usual environment“ of an individual, a key concept in tourism, is defined as the geographical area (though not necessarily a contiguous one) within which an individual conducts his/her regular life routines. The definition of the usual environment is not tied to a specific distance in kilometres but is left to the surveyed individuals themselves. Own vacation homes are always excluded from the usual environment and thus trips to own vacation homes count as tourism trips.*

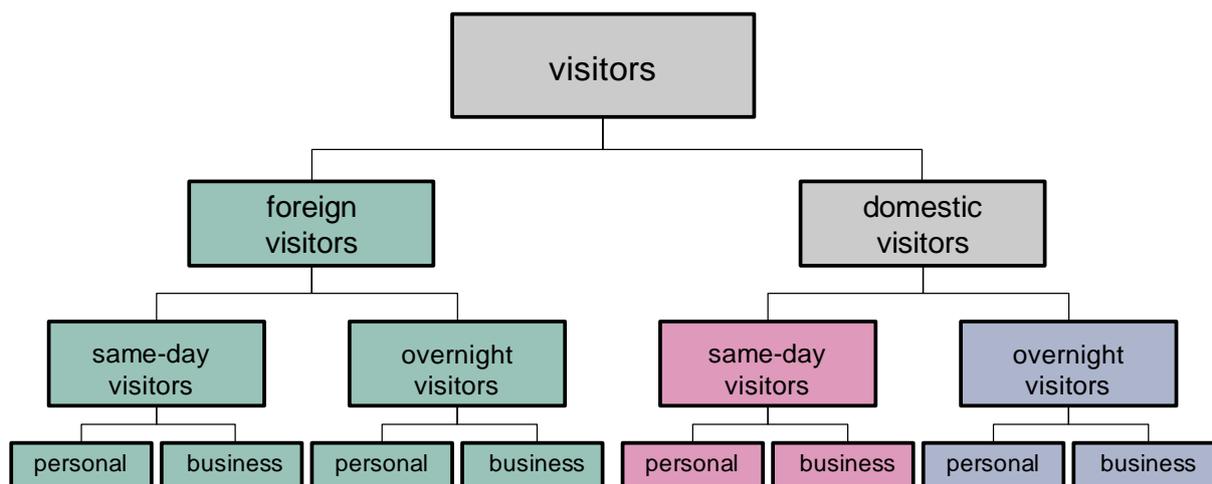
\*\* *For example curative stays in rehabilitations clinics or study programmes that take less than a year.*

<sup>2</sup> The System of National Accounts (SNA) is a crucial part of official economics statistics. The focus of the SNA lies on the production, distribution and expenditure of Gross Domestic Product (GDP). The SNA consists of several parts that deal with the assets, incomes, foreign trade relations and employment in the economy. The input-output tables form another part of the SNA. They describe the interdependencies between different branches of the national economy by their intermediate input consumption (cf. Gabler Wirtschaftslexikon, <http://wirtschaftslexikon.gabler.de/Archiv/57339/volkswirtschaftliche-gesamtrechnung-vgr-v5.html>).

The starting point of our calculations is the definition of tourism as given in Box 1. The measurement of tourism consumption is based on the demand by touristic travellers (subsequently: visitors).<sup>3</sup> Visitors are broken down into foreign and domestic as well as into same-day and overnight visitors. They are also categorised according to their main purpose of travel - either personal or business related (→ Figure 1).

Following this structure, we calculate the income and employment effects of tourism based on an assessment of tourist demand and the associated supply-side activities as described in the remainder of this section.

**Figure 1: Classification of visitors**



Source: DIW econ

<sup>3</sup> Besides tourists, the category of “travellers” comprises other persons travelling for non-touristic purposes. These include, for example, commuters, seasonal workers, diplomats, immigrants, long-term students, crew members of airplanes and other means of transport, or self-employed persons staying for a short period of time to provide specific services. These services may include the installation of equipment, repair, consultancy, etc. It is a prerequisite that there is no implicit or explicit employer-employee relationship with a resident entity.

### 2.1.1 Evaluation of tourism demand

Total tourism demand consists of all expenditures by all types of visitors on trips in Germany. This includes all expenditures during all trips as well as all expenditures which are directly related to these trips (→ Box 2). Tourism expenditures are then divided into different *product categories*. These include tourism-characteristic products<sup>4</sup> (such as food and beverage serving services, accommodation services, air passenger transport services or motor caravans) as well as all other goods and services (such as apparel, telecommunication or insurance services).<sup>5</sup> The main focus of this report will be on the expenditures on tourism-characteristic goods and services.

#### Box 2: Compilation of tourism expenditures

We calculate tourism expenditure based on the following three main data sources:

- Balance of payments statistics by the German Bundesbank (expenditure of foreign same-day and overnight visitors in Germany);
- Publications on the same-day trips by the German Economic Institute for Tourism (dwif), (expenditure of domestic same-day visitors);
- The German Travel Monitor by DZT/IPK (expenditure of domestic overnight visitors).

Each of the three data sources captures the total expenditures of the corresponding group of visitors. The total expenditures are allocated to different product categories (top-down approach). In practice, this allocation could only be completed by making some further assumptions. Our approach ensures that the total level of expenditure is captured consistently, even if the allocation itself may not be entirely precise at all points. However, in terms of measuring the economic impacts of the tourism industry, it is the total level of expenditure that is decisive.

<sup>4</sup> A product is tourism characteristic if the expenditure on this product represents a large share of a visitor's expenditures (such as the expenditure on an airline ticket) and/or if total demand for this product is mainly driven by tourists. For example, tourists are the only consumers of travel agency services. "Products" summarize both, goods and services.

<sup>5</sup> Tourists spend a much of their expenditure on non-tourism-specific goods and services. Therefore, a considerable share of tourism expenditures falls into the category of "other products". A further subdivision of this category proved to be limited due to data restrictions. However, this is of minor importance to the main goals of the research project.

### 2.1.2 Evaluation of tourism supply

To meet tourism demand a corresponding supply of goods and services is required. This includes the supply of *tourism-characteristic industries* such as the accommodation industry, the food and beverage serving industry, airlines, travel agencies or trade show organisers, as well as the supply of *non-tourism-characteristic industries*, such as retail trade or insurance services. However, tourists demand only a fraction of the supply of these industries. For example, local residents also consume restaurant services and commuters also use railway passenger transport services. In some other industries such as retail trade or insurance activities, non-touristic consumers contribute the greatest share of total demand. By using the product-specific tourism demand we calculate the fraction of total supply in each and every product category that is related to the expenditures of tourists (*tourism ratios*).

In total, we divide tourism demand into 17 different product categories and tourism supply into 14 different industries (→ Table 1).

**Table 1: Tourism characteristic products and industries**

	Tourism Characteristic Industries													other industries	
	Accommodation services	Real estate activities with own or leased property	Food and beverage serving industry	railway passenger transport	Road and local transport	Water passenger transport	Air passenger transport	Car rental industry	Travel agencies and tour operators	Cultural, sports and recreational industry	Business support activities	Health activities	sale of motor vehicles and other retail activities		
1 – Accommodation services															
a) Conventional accomodation services	■														
b) Imputed accomodation services*		■													
2 – Food and beverage serving services			■												
3 – Railway passenger transport services				■											
4 – Road and local passenger transport services					■										
5 – Water passenger transport services						■									
6 – Air passenger transport services							■								
7 – Car rental services								■							
8 – Travel agencies and tour operators									■						
9 – Cultural, sports and recreational services										■					
10 – Trade shows and convention services											■				
11 – Rehabilitations Clinics												■			
12 – Groceries													■	■	■
13 – Caravans and motor homes														■	■
14 – Fuel (petrol and diesel)														■	■
15 – Bicycles														■	■
16 – All other goods														■	■
17 – All other services															■

\* Accommodation services associated with stays in vacation homes occupied and used by their owners.

Note that the sale of goods (groceries, caravans and motor homes, fuel, bicycles, and all other goods) to end-consumers entails a retail trade service and a production activity; therefore, two industries are marked in the respective product categories.

Source: DIW econ

### 2.1.3 The impact of tourism on income and employment

We evaluate the effects of tourism on income and employment based on the following information:

- **Gross value added** comprises total income generated<sup>6</sup>, including all direct taxes on this income. It is the most important measure to assess income effects and the economic performance of an individual industry or an entire economy.
  
- **The number of persons in employment** includes all employees, civil servants, members of the armed forces and persons in marginal employment as well as self-employed and unpaid family workers, independently of the number of hours worked.

We obtain total value added and employment for the different industries and product categories from official statistics. We then use the specific *tourism ratios* to calculate the share of value added and employment in each industry and product category that is due to tourism demand. For example, if the *tourism ratio* in the food and beverage serving industry is 60%<sup>7</sup>, we attribute a share of 60% of the industry's value added to tourism. In this way we arrive at the direct income and employment effects of the tourism industry.

However, a comprehensive evaluation of the economic impact of tourism must take into account the additional income and employment effects that result from the consumption of intermediate inputs along the entire value chain (so-called *indirect* and *induced* effects, → Box 3). We use *input-output analyses* to calculate these effects.

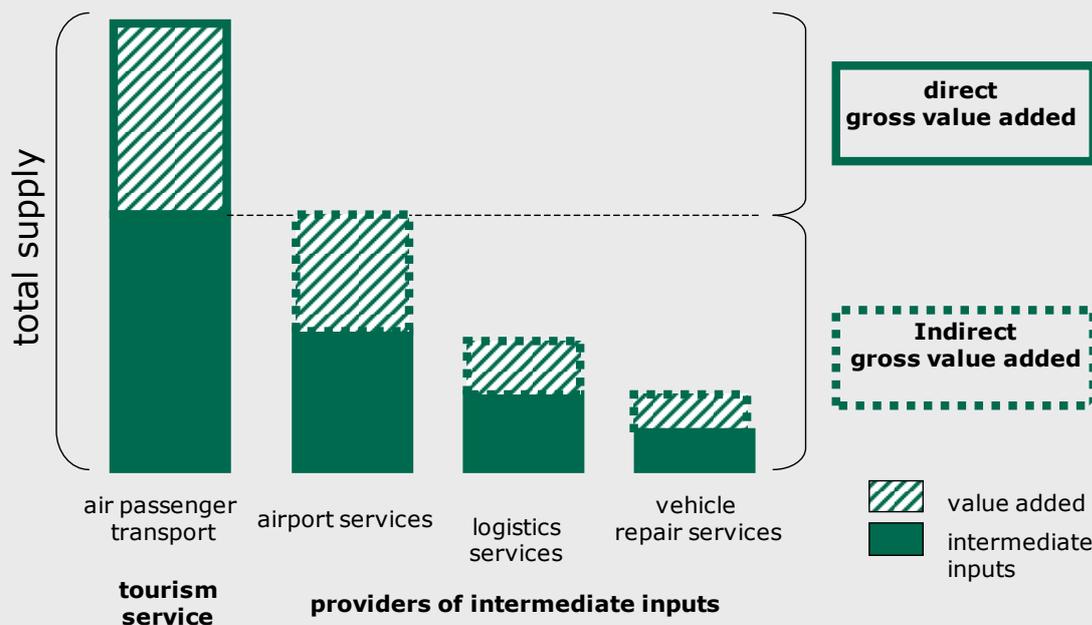
---

<sup>6</sup> Income consists of earnings from labour and capital, i.e. wages and salaries as well as profits.

<sup>7</sup> This implies that the food and beverage serving industry receives 60% of its revenues from tourists and 40% from non-tourists.

**Box 3: Direct, indirect and induced effects**

From an economic perspective, value added and employment are not only created in the production process of those goods and services that are directly consumed by tourists (*direct effects*) but also in the production process of the required intermediate inputs (*indirect effects*). For instance, air passenger transport services are directly consumed by tourists. The value added associated with these services creates direct income in form of wages and capital gains. Yet the rendering of air passenger transport services also requires intermediate inputs such as airport or logistics services. The valued added resulting from these intermediate services represents the indirect income effect of tourism.



Finally, the incomes resulting from direct and indirect effects are (partially) spent on domestic consumption purposes. This induces additional value added and employment (*induced effects*). These effects also have to be considered to fully capture the economic effects of the tourism industry.

## 3. Results

We present the results of the German tourism satellite account for the **year 2010** according to the methodological framework set out above. First, we derive tourism demand on the basis of expenditures by foreign and domestic visitors. In a second step, we use tourism demand to determine *tourism ratios* for all product categories and industries. Based on these *tourism ratios*, we finally calculate the income and employment effects generated by Germany's tourism industry.

### 3.1 Expenditures by foreign visitors

In 2010, foreign visitors spent a total of **36.6 billion euros** on their trips to Germany (→ Figure 2). The following items accounted for the largest shares in total expenditures of foreign visitors:

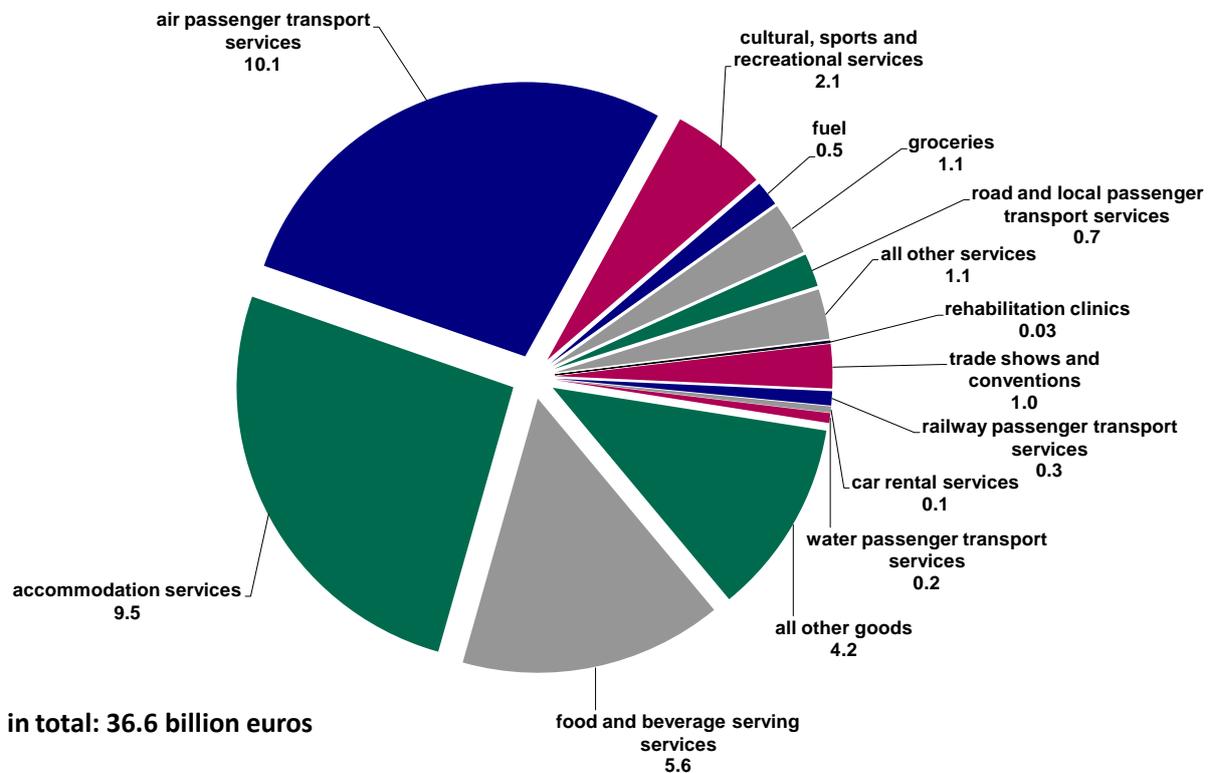
- Air passenger transport services (10.1 billion euros or 28% of total expenditures)
- Accommodation services (9.5 billion euros or 26%)
- Food and beverage serving services (5.6 billion euros or 15%)

In addition, retail-related expenditures on goods such as apparel, watches or jewellery (*all other goods*, 4.2 billion euros or 11.5%) add up to a significant share of total spending by international visitors on trips to Germany.

Foreign visitors in Germany spent least on rental cars (133 million euros) and health care services in rehabilitation clinics (34 million euros).

**Figure 2: Expenditures by foreign visitors in Germany (2010)**

*in billions of euros*



Source: DIW econ

Total expenditures by foreign visitors split up by purpose of travel as follows:

■ Foreign overnight visitors on personal trips:	20.6 billion euros
■ Foreign overnight visitors on business trips:	13.5 billion euros
■ Foreign same-day visitors on personal trips:	1.3 billion euros
■ Foreign same-day visitors on business trips:	1.2 billion euros

### 3.2 Expenditures by domestic visitors

In 2010, domestic visitors spent a total of **221.2 billion euros** (→ Figure 3) on same-day and overnight trips in Germany. Consumption expenditures on non-tourism characteristic goods (see page 1) such as apparel and valuables (*all other goods*) represent the largest share of these expenditures (26.5% or 58.6 billion euros) which emphasises the great

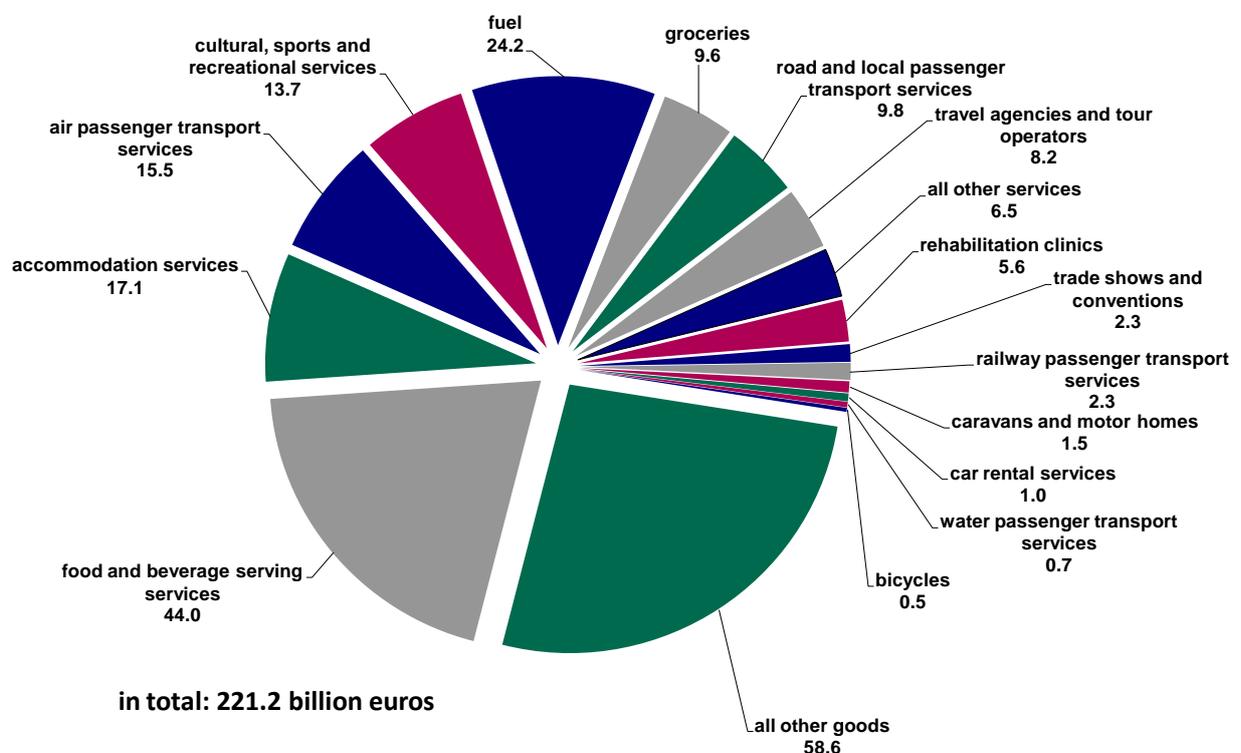
importance of shopping activities for tourism. Lacking more detailed information, these expenditures cannot be broken down any further. Besides shopping-related expenditures, domestic visitors spent most on the following items:

- Food and beverage serving services: 44.0 billion euros (19.9% of total expenditures)
- Fuel: 24.2 billion euros (10.9%)
- Accommodation services: 17.1 billion euros (7.7%)
- Air passenger transport services: 15.5 billion euros (7.0%)

Expenditures related to the purchase and maintenance of bicycles (535 million euros or 0.2%) and for water passenger transport services (735 million euros or 0.3%) accounted for the smallest shares of total expenditures by domestic visitors.

**Figure 3: Expenditures by domestic visitors in Germany (2010)**

*in billions of euros*



Source: DIW econ

Splitting up total expenditures by domestic visitors and purpose of travel yields the following distribution:

■ Domestic same-day visitors on personal trips:	95.3 billion euros
■ Domestic overnight visitors on personal trips:	66.7 billion euros
■ Domestic same-day visitors on business trips:	27.9 billion euros
■ Domestic expenditures on outbound trips <sup>8</sup> :	16.8 billion euros
■ Domestic overnight visitors on business trips:	14.6 billion euros

### 3.3 Total internal tourism consumption in Germany

Total *internal tourism consumption* comprises all monetary and in-kind consumption of foreign and domestic tourists in Germany. In 2010, **total internal tourism consumption in Germany** amounted to **278.3 billion euros** (→ Figure 4). Total internal tourism consumption mainly consists of tourism the expenditures by foreign and domestic visitors in Germany. Domestic visitors spent 221.3 billion euros (79.5%) and thus the majority of total tourism expenditures. In addition to these monetary expenditures, tourism consumption also includes two types of in kind services that are commonly consumed by tourists: First, services associated with vacation accommodation on own account in owner-occupied vacation homes and apartments (so called *imputed accommodation services*, 11.2 billion euros), as well as public subsidies for culture, sports and leisure activities which tourists consume (9.2 billion euros).

The following items accounted for the largest shares in internal tourism consumption:

- Shopping expenditures on all other consumption goods: 62.8 billion euros (22.6%)
- Expenditures on food and beverage serving services: 49.7 billion euros (17.8%)
- Conventional<sup>9</sup> accommodation services: 26.7 billion euros (9.6%)
- Air passenger transport services: 25.6 billion euros (9.2%)
- Fuel: 24.7 billion euros (8.9%).

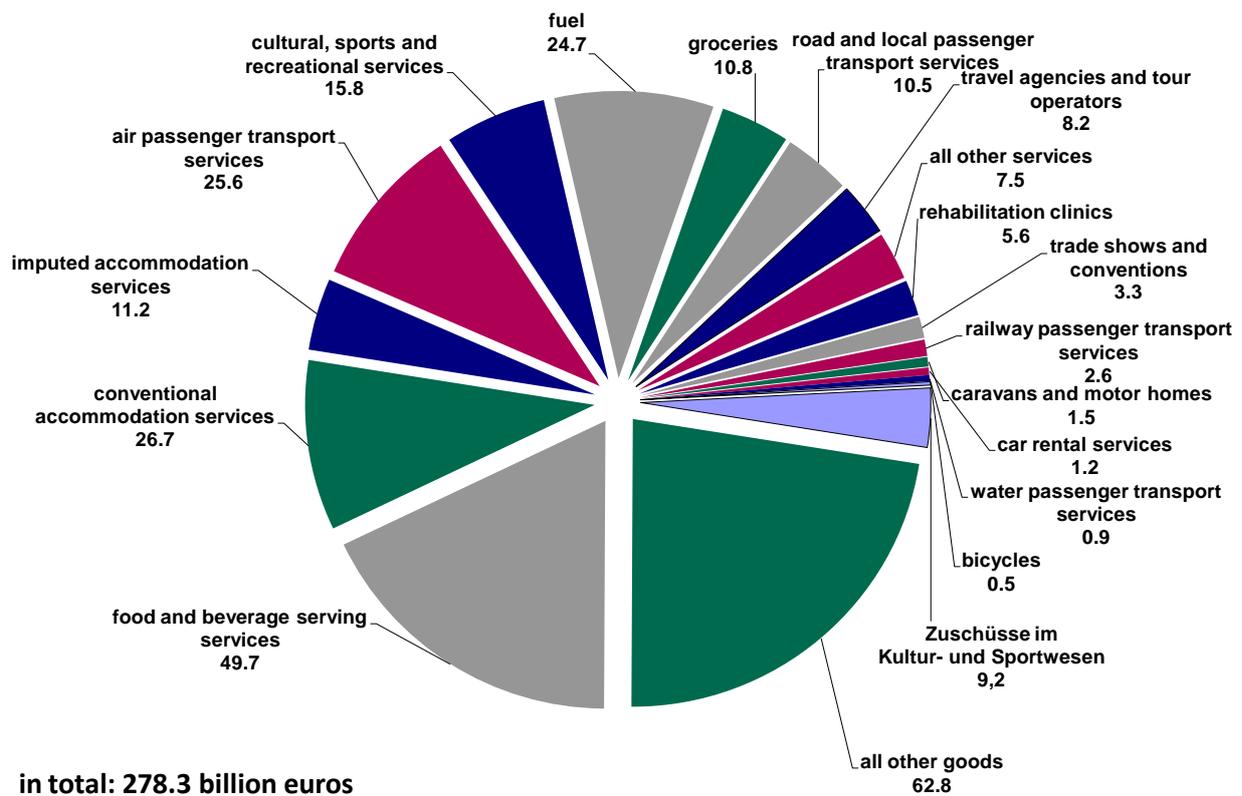
<sup>8</sup> Domestic expenditure on outbound trips consists of expenditures by domestic tourists that occur in the domestic economy in the context of trips to foreign destinations. These expenditures mainly consist of expenditure on passenger transport services of domestic transport providers as well as on reservation services provided by domestic travel agencies and tour operators.

<sup>9</sup> Conventional accommodation services in hotels, youth hostels, and rented vacation homes as opposed to in kind services associated with stays of owners in their own vacation homes.

Tourists in Germany spent the least on water passenger transport services (947 million euros or 0.3%) and on the purchase and maintenance of bicycles (535 million euros or 0.2%).

**Figure 4: Internal tourism consumption in Germany (2010)**

*in billions of euros*



Source: DIW econ

### 3.4 Tourism supply

Tourism touches a multitude of different industries that are involved in the production of goods and services demanded by tourists. Railway companies, for example, render passenger transport services which are used by tourists (railway services<sup>10</sup>: 2.6 billion euros, → Figure 4). These services, however, are not only consumed by tourists but also by

<sup>10</sup> Passenger transport services provided by tram and subway trains are part of road and local passenger transport services.

commuters, locals, or students who are not counted as tourists. To accurately identify tourism related supply, it is therefore necessary to estimate the share of tourism consumption in the total supply of each product category (*tourism ratios*).

The *tourism ratios* are calculated by dividing tourism consumption expenditures (presented in section 3.3, → Figure 4) through total supply in each product category. Supply data is taken from official national accounts statistics.<sup>11</sup> The resulting *tourism ratios* are presented in Figure 5.

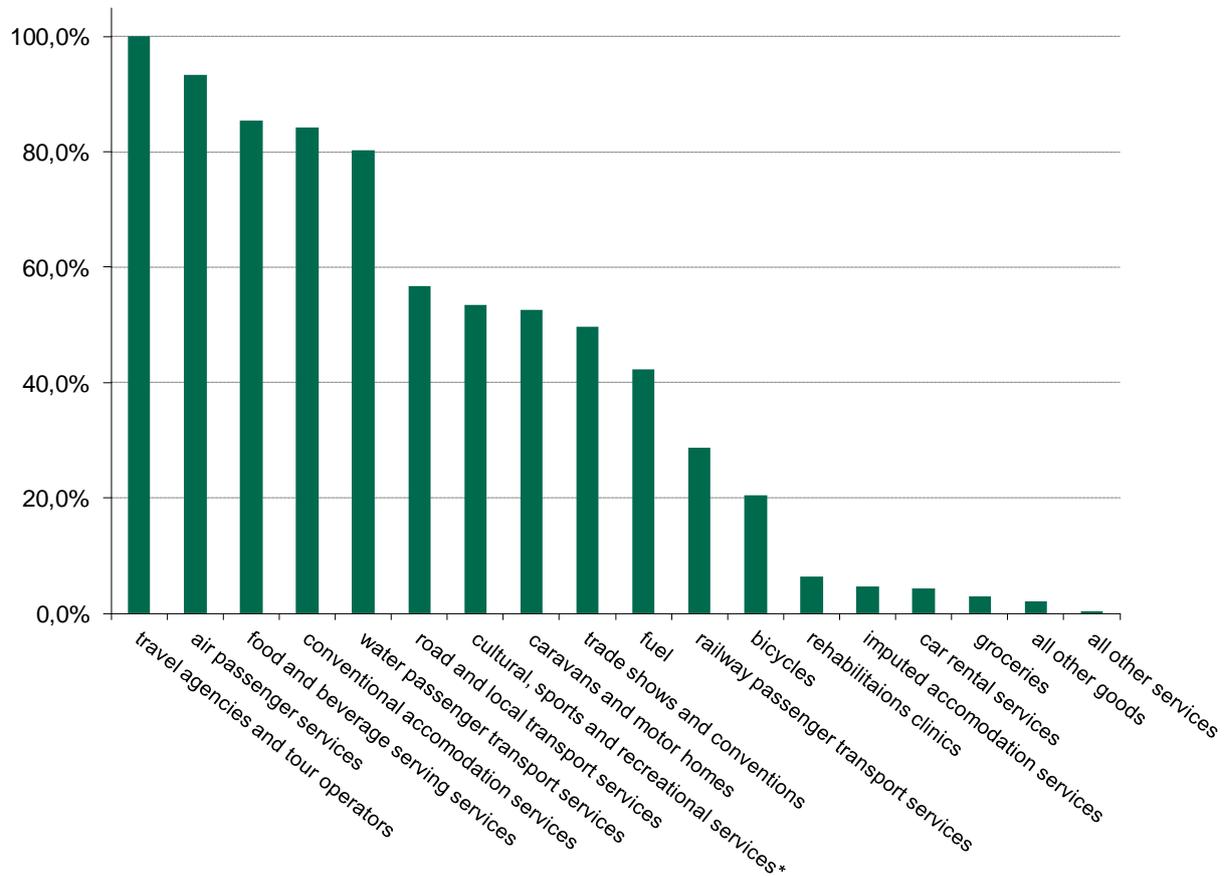
The tourism ratio for travel agencies and tour operators is 100% as their services are exclusively consumed by tourists. The tourism ratios are 93.4% for air passenger transport services, 85.5% for food and beverage serving services, 84.2% for conventional accommodation services, and 80.3% for water passenger transport services, respectively. Thus, in these product categories the majority of the respective supply is consumed by tourists. By contrast, tourists only consume a minor fraction of the total supply of other products. For instance, only 3.0% of all groceries, 2.0% of all non-tourism characteristic goods (apparel, jewellery, furnishings, etc.) and 0.4% of all other services are related to tourism consumption and thus the vast majority of the expenditures on these products are made for purposes unrelated to tourism.<sup>12</sup>

---

<sup>11</sup> For this purpose, the input-output tables as part of the German SNA are used.

<sup>12</sup> In the case of other services this is because the majority of services, which are typically used for touristic trips (such as transport, accommodation, catering, entertainment, etc.), are already accounted for in other product categories. Moreover, the total supply of all other services entails a variety of services that are not relevant to private or tourism-related consumption (such as cargo transport services, business-related services or research and development).

Figure 5: Tourism ratios by industry in Germany



\* including subsidies

Source: DIW econ

### 3.5 Impact of tourism on income and employment

We calculate the direct, indirect and induced effects of the German tourism industry by applying the *tourism ratios* and the methodology explained in section 2.1.3. Note that the income effects in terms of generated value added are smaller than total tourism expenditures (278 billion euros), because part of the expenditures is used to pay for intermediate inputs needed in the production of the respective consumer products.

#### 3.5.1 Income effects

Germany's tourism industry generated a **total gross value added** of **214.1 billion euros** in 2010 (→ Table 2). This total effect consists of a direct effect of 97.0 billion euros, an indirect

effect (due to the production of intermediate inputs) of 59.5 billion euros and an induced effect (due to the expenditure of incomes resulting from the direct and indirect effects) of 57.5 billion euros. The direct effects generated by the tourism industry are equivalent to 4.4% of Germany's aggregated gross value added. **Including induced and indirect effects**, the tourism industry accounted for **9.7% of the aggregated value added** in Germany. Business travel individually generated a value added equivalent to 2.1% of aggregated value added (direct effects: 0.9%). Compared to the overall effect, this shows that personal travel plays a far more important role (in terms of value added) than business travel in Germany.

**Table 2: Value added effects of the tourism industry in Germany (2010)**

	value added in billions of euros		in % of total value added in the economy	
	tourism total	of which business travel	tourism total	of which business travel
direct effect	97,0	20,0	4,4%	0,9%
indirect effect	59,5	14,7	2,7%	0,7%
induced effect	57,5	12,8	2,6%	0,6%
<b>Total</b>	<b>214,1</b>	<b>47,5</b>	<b>9,7%</b>	<b>2,1%</b>

Source: DIW econ. Small discrepancies due to rounding are possible.

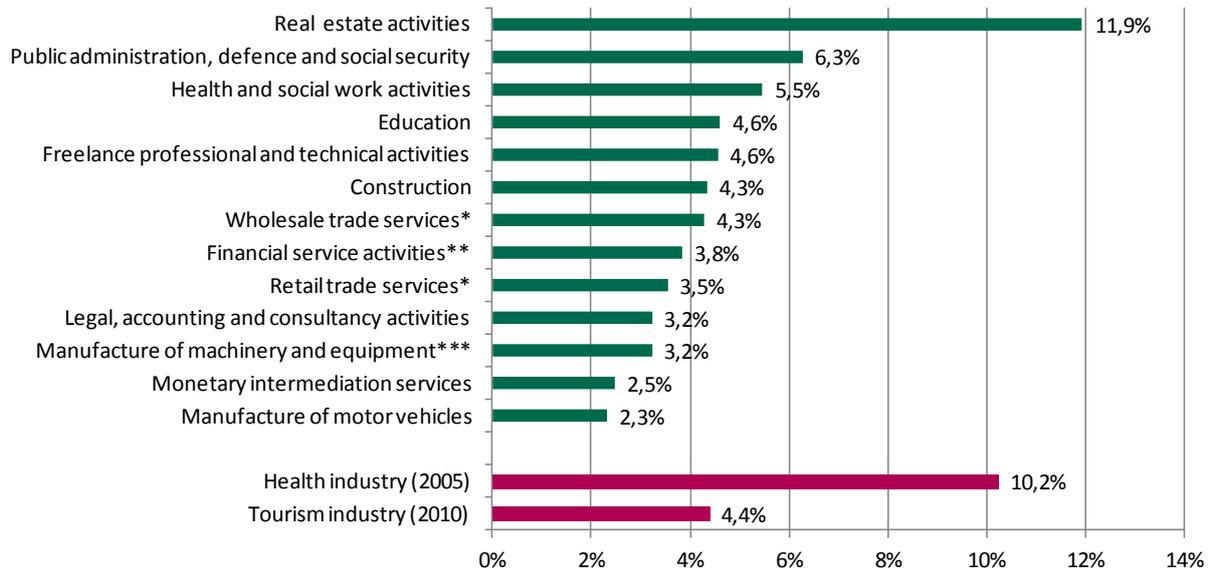
We compare the value added effects generated by the tourism industry to the ten largest German industries<sup>13</sup> in terms of their share in the economy's aggregated value added in Figure 6. In addition (and highlighted in a different colour), Figure 6 also shows the share of the health industry in aggregate value added. This allows for a comparison of the tourism industry to a second cross-sectional industry<sup>14</sup>.

<sup>13</sup> For the purpose of exposition, the automobile industry has been listed separately.

<sup>14</sup> The value added of the health industry has been calculated along similar lines to the tourism industry on basis of the satellite system of national accounts (TU Berlin, Roland Berger Strategy Consulting and BASYS 2009). When comparing the percentages it needs to be kept in mind that the individual industries' shares are calculated on basis of input-output tables summing up to 100% and are therefore mutually exclusive. In contrast, the value added shares of the tourism and health

**Figure 6: Comparison of value added shares of different economic activities (2010), including the health (2005) and tourism industry (2010)**

*(as a percentage in the German economy's aggregated value added)*



\* excluding motor vehicles and motorcycles

\*\* excluding insurance and pension funding

\*\*\* excluding computer, electronic and optical products, electrical, motor and transport equipment

Source: DIW econ, Statistisches Bundesamt, TU Berlin, Roland Berger Strategy Consulting und BASYS (2009).

Accounting for a direct income effect of 4.4 percent of aggregated gross value added in 2010, the tourism industry is comparable to the construction sector (4.3%), the education sector (4.6%) or the professional and technical services industry (4.6%). Other industries such as the car industry<sup>15</sup> (2.3%) and the banking sector<sup>16</sup> (2.5%) obtain smaller shares of aggregate gross value added. The corresponding share of the health industry, however, is much larger, accounting for more than 10% of aggregated gross value added. This high share is mainly due to the large contribution of providers of health and social work activities, listed as a separate industry in Figure 6.

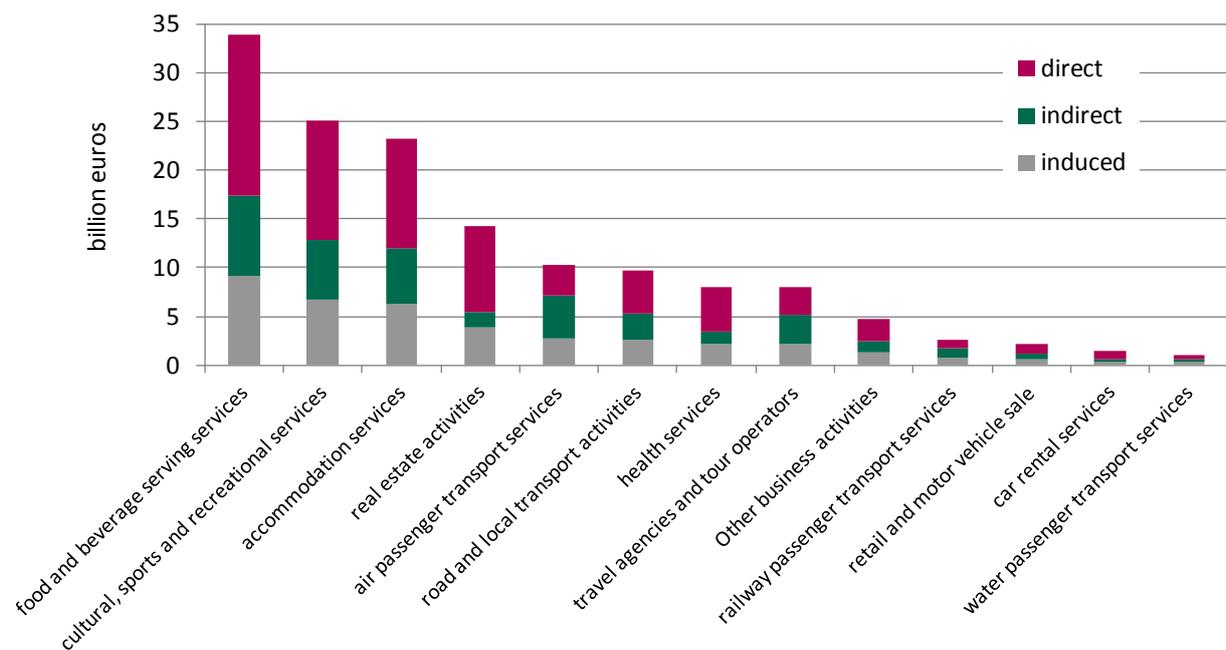
industry are the results of a cross-sectional analysis based on the value added of different industries.

<sup>15</sup> Defined as the manufacture of motor vehicles.

<sup>16</sup> Defined as monetary intermediation services.

The tourism industry's overall income effect extends over several tourism characteristic industries (Figure 7). Accounting for almost 33.8 billion euros, the food and beverage serving industry contributes most to the overall value added, followed by cultural, sports and recreational service activities (25.1 billion euros), the accommodation industry (23.3 billion euros), the real estate sector (due to income effects generated by accommodation services on own accounts, 14.3 billion euros) and air passenger transport (10.3 billion euros). The smallest value added shares are realised by car rental service providers (1.4 billion euros) and water passenger transport (1.0 billion euros)<sup>17</sup>.

**Figure 7: Direct, indirect and induced income effects of the tourism industry in Germany by economic activity (value added in billions of euros, 2010)**



Source: DIW econ

<sup>17</sup> Since only tourism characteristic industries are considered, the value added shares of Figure 7 do not add up to the total effect listed in Table 2.

### 3.5.2 Employment effects

In 2010, almost **2.9 million jobs** depended **directly** on tourism related consumption (→ Table 3). This corresponds to a share of 7.0% of total employment in Germany.<sup>18</sup> Including the employment related to the indirect and induced effects of tourism consumption, the **total contribution** of the tourism industry to employment amounts to **4.9 million persons** or **12.0% of total employment in Germany**. The direct employment share (7.0%) of the tourism industry is considerably higher than its income share (4.4%) which is due to the fact that tourism characteristic industries on average employ more persons per euro of output than do other industries, such as manufacturing of machinery and equipment.

The employment attributable to business travel is shown in Table 3. Business travel accounted for 1.2 million employees or a share of 2.9% of total employment. As in the case of value added, the employment effect caused by business trips is much smaller than that caused by personal travel.

**Table 3: Employment effects of the tourism industry in Germany (2010)**

	employment		in % of total employment in the economy	
	tourism total	of which business travel	tourism total	of which business travel
direct effect	2.858.748	682.222	7,0%	1,7%
indirect effect	979.672	261.409	2,4%	0,6%
induced effect	1.035.097	229.648	2,6%	0,6%
<b>total</b>	<b>4.873.517</b>	<b>1.173.279</b>	<b>12,0%</b>	<b>2,9%</b>

Source: DIW econ. Small discrepancies due to rounding are possible.

<sup>18</sup> Total employment amounted to 40.5 million persons in 2010.

Figure 8 compares the employment share of the tourism industry to the employment shares of the ten largest industries<sup>19</sup> and the health industry as an alternative cross-cutting industry (see below).<sup>20</sup> With a contribution of 7.0% to overall employment, the direct employment share of the tourism industry is in between that of the retail trade industry (9.2%) and the education sector (5.9%). Other sectors such as construction (3.0%) or the manufacture of machinery (2.6%) contributed to overall employment to a much smaller extent. Accommodation and food service activities - as part of the total tourism industry - generated a share of 4.8% in total employment. As an individual industry, it thus made the highest contribution to total employment in the tourism industry.

Just as the tourism industry, the health industry also cuts across several economic activities such as health services, health-related tourism or sports facilities. In 2005, the health industry contributed 13.9% to total employment in Germany, nearly twice as much as the tourism industry. Health and social work activities as part of the health industry individually generated an employment share of 10.4% and thus the majority of overall employment in the health industry was related to these activities.

---

<sup>19</sup> In terms of employment.

<sup>20</sup> Since no employment data by industries or product groups are available for 2010, data from 2007 was used to conduct the input-output analysis presented in Figure 8. The employment shares are listed according to the CPA-classification, which may result in deviating notations of individual industries or product groups.

**Figure 8: Comparison of shares of total employment of different economic activities (2007), including the health (2005) and tourism industry (2010)**

(as a percentage of total German employment)



\* including legal, accounting, consultancy, holdings, market research, technical and security services

\*\* excluding motor vehicles and motorcycles

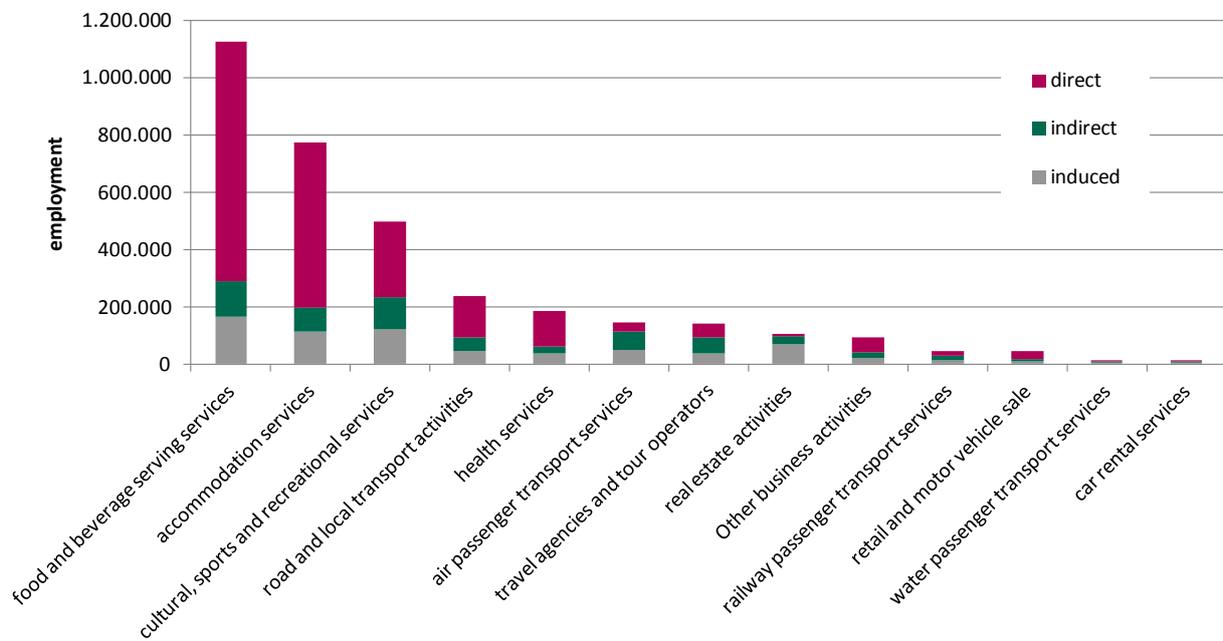
\*\*\* excluding motorcycles and retail trade services of motor fuel

\*\*\*\* excluding computer, electronic and optical products, and electrical, motor and transport equipment

Source: DIW econ, Statistisches Bundesamt, TU Berlin, Roland Berger Strategy Consulting und BASYS (2009).

Overall tourism employment spreads over various different industries (Figure 9). Most employees in the tourism industry work in the food and beverage serving industry (1.1 million) and accommodation industry (0.8 million). Cultural, sports and recreational services (0.5 million employees), road and local passenger transport services (0.2 million employees) and health services (0.2 million employees in rehabilitation clinics) follow behind. Water passenger transport and car rental services contribute least to overall tourism employment.

**Figure 9: Direct, indirect and induced employment effects of the tourism industry in Germany by economic activity (number of employed persons, 2010)**



Source: DIW econ.

## 4. Conclusion

We estimate the economic impact of Germany's tourism industry in 2010. Our methodology is consistent with internationally established procedures as well as official economic statistics in Germany. In our calculations we reconcile data from official sources with the extensive information provided by the tourism industry which involved close cooperation with public bodies as well as academics and tourism experts. This way, we compile a detailed set of statistics that is complementary to national accounts and input-output tables. The resulting *Tourism Satellite Account (TSA)* allows for a meaningful assessment of the German tourism industry in terms of income and employment.

The use of a methodology that is fully compatible with official national accounts and internationally recommended standards ensures the robustness of the results. This is true,

in particular, for the consumption expenditures of the three main groups of visitors (foreign visitors, domestic overnight visitors, and domestic same-day visitors). Capturing total expenditures first before allocating it into the different expenditure categories avoids under- or overestimation that might occur if individual expenditure items were aggregated into total expenditures. Our approach thus ensures that the impact of tourism in terms of value added and employment that we determine from the aggregate size of domestic tourism consumption is a reasonably precise estimate

The results stress the great economic importance of the tourism industry in Germany. The sector generated a **gross value added of 97.0 billion euros** in 2010. This is **4.4%** of aggregate German gross value added. Additionally, the tourism industry directly employed almost **2.9 million** people. This is **7.0%** of total employment in Germany.

To capture the full economic impact of the tourism industry we add income and employment effects from sectors that supply intermediate inputs to the industries satisfying final tourism demand (so-called *indirect effects*) and the effects resulting from the consumption expenditures of the persons directly or indirectly employed in the tourism sector (so-called *induced effects*). In total, these indirect and induced effects amount to 5.3% of aggregate gross value added and 5.0% of total employment in 2010. Once we include all **direct, indirect and induced effects** we calculate that the **share of the tourism industry is 9.7% of German gross value added**. The tourism industry's total **share of employment is 12.0%**.

Summarising, our results show that tourism is of considerable importance for the German economy. Further analysis could be carried out to investigate the economic impact of tourism in the German states (*Bundesländer*) to assess any existing regional differences and to derive state-tailored policy recommendations.

## Appendix: The Tourism Satellite Account (TSA) of Germany (2010)

### Appendix 1: Tourism expenditures of foreign visitors in Germany (2010)

in millions of euros	Personal trips		Business trips		In total
	overnight visitors	same-day visitors	overnight visitors	same-day visitors	$\Sigma$
	1.1	1.2	1.3	1.4	1.5
<b>I) Internationally defined tourism characteristic products</b>					
1 – Accommodation services	5,443	X	4,077	X	9,519
2 – Food and beverage serving services	3,197	358	1,798	277	5,629
3 – Railway passenger transport services	143	95	43	24	305
4 – Road and local passenger transport services	404	12	286	11	713
5 – Water passenger transport services	176	8	25	2	212
6 – Air passenger transport services	5,973	X	3,649	491	10,112
7 – Car rental services	63	x	70	0	133
8 – Travel agencies and tour operators	X	X	X	X	X
9 – Cultural, sports and recreational services	1,410	114	525	19	2,068
<b>II) Other tourism characteristic products</b>					
10 – Trade show and convention services	1	4	940	5	951
11 – Rehabilitation clinics	35	X	X	X	35
12 – Groceries	845	89	150	39	1,123
13 – Caravans and motor homes	X	X	X	X	X
14 – Fuels	328	0	211	0	539
15 – Bicycles	X	X	X	X	X
<b>III) All other products</b>					
16 – All other goods	2,067	544	1,270	332	4,213
17 – All other services	562	27	472	13	1,075
<b>IN TOTAL</b>	<b>20,647</b>	<b>1,251</b>	<b>13,516</b>	<b>1,214</b>	<b>36,628</b>

Source: DIW econ. At purchasers' prices.

**Appendix 2: Tourism expenditures of domestic visitors in Germany (2010)**

in millions of euros	Personal trips		Business trips		Inbound share of outbound trips	In total Σ
	overnight visitors	same-day visitors	overnight visitors	same-day visitors		
	2.1	2.2	2.3	2.4	2.5	2.6
<b>I) Internationally defined tourism characteristic products</b>						
1 – Accommodation services	13,298	X	3,837	X	X	17,135
2 – Food and beverage serving services	12,809	22,651	1,882	6,704	X	44,047
3 – Railway passenger transport services	690	795	285	430	65	2,265
4 – Road and local passenger transport services	1,238	6,176	331	1,635	377	9,757
5 – Water passenger transport services	366	190	X	X	180	735
6 – Air passenger transport services	1,514	X	785	3,973	9,253	15,525
7 – Car rental services	185	224	81	490	64	1,045
8 – Travel agencies and tour operators	1,107	X	959	517	5,617	8,200
9 – Cultural, sports and recreational services	4,915	7,622	550	631	X	13,718
<b>II) Other tourism characteristic products</b>						
10 – Trade show and convention services	6	108	2,130	88	X	2,332
11 – Rehabilitation clinics	5,553	X	X	X	X	5,553
12 – Groceries	3,544	4,651	157	1,283	X	9,635
13 – Caravans and motor homes	503	631	X	X	356	1,490
14 – Fuels	4,927	10,893	1,500	6,413	457	24,190
15 – Bicycles	67	468	X	X	X	535
<b>III) All other products</b>	0	0	0	0	0	0
16 – All other goods	13,267	38,602	1,330	5,258	164	58,622
17 – All other services	2,718	2,250	737	506	241	6,452
<b>IN TOTAL</b>	<b>66,706</b>	<b>95,262</b>	<b>14,566</b>	<b>27,929</b>	<b>16,775</b>	<b>221,236</b>

Source: DIW econ. At purchasers' prices.

**Appendix 3: Outbound tourism expenditures of domestic residents (2010)**

in millions of euros	Outbound trips		
	overnight visitors	same-day visitors	In total
	3.1	3.2	3.1 + 3.2 = 3.3
<b>I) Internationally defined tourism characteristic products</b>			
1 – Accommodation services	19,812	X	19,812
2 – Food and beverage serving services	10,030	1,850	11,880
3 – Railway passenger transport services	105	68	173
4 – Road and local passenger transport services 5 – Water passenger transport services	2,096	123	2,219
6 – Air passenger transport services	9,244	141	9,385
7 – Car rental services	...	...	...
8 – Travel agencies and tour operators	X	X	X
9 – Cultural, sports and recreational services	4,370	425	4,794
<b>II) Other tourism characteristic products</b>			
11 – Rehabilitation clinics	1,265	X	1,265
12 – Groceries	1,986	427	2,413
14 – Fuels	1,093	1,744	2,836
<b>III) All other products</b>			
16 – All other goods	9,881	2,656	12,537
17 – All other services	1,639	134	1,773
<b>IN TOTAL</b>	<b>61,522</b>	<b>7,567</b>	<b>69,089</b>

Source: DIW econ. At purchasers' prices.

**Appendix 4: Internal tourism consumption in Germany (2010)**

in millions of euro	Internal tourism expenditure			Other tourism consumption	Internal tourism consumption Σ
	foreign visitors	domestic visitors	IN TOTAL		
	1.5	2.6	1.5 + 2.6 = 4.1	4.2	4.1 + 4.2 = 4.3
<b>I) Internationally defined tourism characteristic products</b>					
<b>1 – Accommodation services</b>					
a) Conventional accommodation services	9,519	17,135	26,654		26,654
b) Imputed accommodation services				11,233	11,233
<b>2 – Food and beverage serving services</b>	5,629	44,047	49,677		49,677
<b>3 – Railway passenger transport services</b>	305	2,265	2,570		2,570
<b>4 – Road and local passenger transport services</b>	713	9,757	10,470		10,470
<b>5 – Water passenger transport services</b>	212	735	947		947
<b>6 – Air passenger transport services</b>	10,112	15,525	25,637		25,637
<b>7 – Car rental services</b>	133	1,045	1,178		1,178
<b>8 – Travel agencies and tour operators</b>	X	8,200	8,200		8,200
<b>9 – Cultural, sports and recreational services</b>	2,068	13,718	15,786	9,221	25,006
<b>II) Other tourism characteristic products</b>					
10 – Trade show and convention services	951	2,332	3,283		3,283
11 – Rehabilitation clinics	35	5,553	5,588		5,588
12 – Groceries	1,123	9,635	10,758		10,758
13 – Caravans and motor homes	X	1,490	1,490		1,490
14 – Fuels	539	24,190	24,729		24,729
15 – Bicycles	X	535	535		535
<b>III) All other products</b>					
16 – All other goods	4,213	58,622	62,835		62,835
17 – All other services	1,075	6,452	7,527		7,527
<b>IN TOTAL</b>	<b>36,628</b>	<b>221,236</b>	<b>257,864</b>	<b>20,453</b>	<b>278,317</b>

Source: DIW econ. At purchasers' prices.

## Appendix 5: Production accounts of tourism industries and other industries (2010)

in millions of euro	tourism industries															all other industries	Total output of domestic producers	
	55.1 - 55.2	70.2	55.3 - 55.4	60.1	60.2	61.1 -	62.1 -	71.1	63.3	92.3-7 o.4, 93.0	74.8	85.1	50. 52	tourism industries	5.14		5.13 + 5.14 = 5.15	
	accommodation activities 5.1a	real estate activities 5.1b	food and beverage serving activities 5.2	Railway transport 5.3	road and local transport 5.4	water transport 5.5	air transport 5.6	car rental 5.7	travel agencies and tour operators 5.8	Cultural, sport and recreational industry 5.9	Other business activities 5.10	health industry 5.11	retail trade activities 5.12					
<b>I) Internationally defined tourism characteristic products</b>																		
<b>1 – Accommodation services</b>																		
a) Conventional accommodation services	25,787														25,787	98	25,884	
b) Imputed accommodation services		234,645													234,645		234,645	
<b>2 – Food and beverage serving services</b>			37,999				37						190	38,226	10,590	48,816		
<b>3 – Railway passenger transport services</b>				8,989										8,989	0	8,989		
<b>4 – Road and local passenger transport services</b>				2	16,370				81				3	16,456	1,409	17,865		
<b>5 – Water passenger transport services</b>						1,015								1,015	0	1,015		
<b>6 – Air passenger transport services</b>							21,992							21,992		21,992		
<b>7 – Car rental services</b>								26,177					432	26,609		26,609		
<b>8 – Travel agencies and tour operators</b>								517	7,567					8,083		8,083		
<b>9 – Cultural, sports and recreational services</b>										38,521				38,521	2,167	40,688		
<b>II) Other tourism characteristic products</b>																		
10 – Trade show and convention services												6,089		6,089	126	6,215		
11 – Rehabilitation clinics												86,285		86,285	0	86,285		
12 – Groceries	203		392										120	715	181,706	182,420		
13 – Caravans and motor homes															2,328	2,328		
14 – Fuels						129								129	30,044	30,173		
15 – Bicycles													37	37	866	903		
<b>III) All other products</b>																		
16 – All other goods	11		9	20	537	140	40			606		100	500	1,963	1,821,869	1,823,831		
17 – All other services	523	77,920	723	6,564	36,514	24,128	4,822		208	52,384	76,733	94,996	210,369	585,883	1,524,175	2,110,058		
<b>I. Total output (at producer prices)</b>	<b>26,524</b>	<b>312,566</b>	<b>39,122</b>	<b>15,575</b>	<b>53,421</b>	<b>25,412</b>	<b>27,407</b>	<b>26,177</b>	<b>7,856</b>	<b>91,511</b>	<b>82,822</b>	<b>181,380</b>	<b>211,650</b>	<b>1,101,423</b>	<b>3,575,377</b>	<b>4,676,800</b>		
<b>II. Total intermediate consumption (at purchasers' prices)</b>	<b>13,585</b>	<b>73,948</b>	<b>20,037</b>	<b>8,905</b>	<b>30,544</b>	<b>16,962</b>	<b>23,127</b>	<b>5,522</b>	<b>4,769</b>	<b>33,743</b>	<b>33,172</b>	<b>58,682</b>	<b>93,977</b>	<b>416,972</b>	<b>2,043,018</b>	<b>2,459,990</b>		
<b>II. Total gross value added (at producer prices)</b>	<b>12,939</b>	<b>238,618</b>	<b>19,085</b>	<b>6,670</b>	<b>22,877</b>	<b>8,450</b>	<b>4,280</b>	<b>20,655</b>	<b>3,086</b>	<b>57,769</b>	<b>49,650</b>	<b>122,698</b>	<b>117,673</b>	<b>684,451</b>	<b>1,532,359</b>	<b>2,216,810</b>		
Compensation of employees	8,181	9,904	12,067	5,214	17,883	1,227	2,895	1,254	1,574	18,398	25,152	78,291	85,883	267,923	931,010	1,198,933		
Other taxes less subsidies on production	70	9,596	103	-16	-56	263	104	222	66	-109	607	-3,299	3,272	10,821	17,565	28,386		
Depreciation	863	87,584	1,273	1,368	4,691	3,718	976	17,798	753	8,711	1,648	14,168	8,145	151,696	213,659	365,355		
Net operating surplus	3,825	131,535	5,642	105	360	3,242	305	1,380	693	30,768	22,244	33,538	20,373	254,011	370,125	624,136		
Ratio of gross value added over output	49%	76%	49%	43%	43%	33%	16%	79%	39%	63%	60%	68%	56%	62%	43%	47%		

Source: DIW econ. At producer prices.

## Appendix 6: Total domestic supply and internal tourism consumption (2010)

in millions of euro		tourism industries in total	all other industries	output of domestic producers		imports (cif)	Domestic supply	Taxes less subsidies	Trade margins		Domestic supply	Internal tourism	tourism ratios
				output	tourism share	excluding direct purchase of residents abroad	at producer prices		Großhandel	Einzelhandel	at purchasers' prices	consumption	in %
						Wert	Wert	Wert	6.4	6.5	5.15 + 6.1 + 6.3 + 6.4 + 6.5 = 6.6	4.3	4.3/ 6.5 in % = 6.6
		5.13	5.14	5.13 + 5.14 = 5.15		6.1	6.2	6.3	6.4	6.5		4.3	4.3/ 6.5 in % = 6.6
<b>I) Internationally defined tourism characteristic products</b>													
<b>1 – Accommodation services</b>													
a)	Conventional accommodation services	25,787	98	25,884	21,792	2,859	28,744	2,917	x	x	31,660	26,654	84.2%
b)	Imputed accommodation services	234,645		234,645	11,028	2,647	237,292	1,707	x	x	238,999	11,233	4.7%
2 –	Food and beverage serving services	38,226	10,590	48,816	41,725	3,949	52,765	5,354	x	x	58,119	49,677	85.5%
3 –	Railway passenger transport services	8,989	0	8,989	2,577	1,468	10,457	-1,492	x	x	8,965	2,570	28.7%
4 –	Road and local passenger transport services	16,456	1,409	17,865	10,136	1,104	18,969	-514	x	x	18,455	10,470	56.7%
5 –	Water passenger transport services	1,015	0	1,015	815	161	1,176	4	x	x	1,180	947	80.3%
6 –	Air passenger transport services	21,992		21,992	20,542	4,127	26,119	1,328	x	x	27,447	25,637	93.4%
7 –	Car rental services	26,609		26,609	1,145		26,609	788	x	x	27,396	1,178	4.3%
8 –	Travel agencies and tour operators	8,083		8,083	8,083		8,083	117	x	x	8,200	8,200	100.0%
9 –	Cultural, sports and recreational services	38,521	2,167	40,688	21,771	3,623	44,311	2,425	x	x	46,735	25,006	53.5%
<b>II) Other tourism characteristic products</b>													
10 –	Trade show and convention services	6,089	126	6,215	3,093	22	6,238	359	x	x	6,597	3,283	49.8%
11 –	Rehabilitation clinics	86,285	0	86,285	5,567		86,285	328	x	x	86,612	5,588	6.5%
12 –	Groceries	715	181,706	182,420	5,506	70,465	252,885	21,622	32,284	49,648	356,440	10,758	3.0%
13 –	Caravans and motor homes		2,328	2,328	1,223	294	2,622	56	64	95	2,837	1,490	52.5%
14 –	Fuels	129	30,044	30,173	12,774	4,334	34,506	19,006	3,671	1,229	58,412	24,729	42.3%
15 –	Bicycles	37	866	903	184	1,104	2,007	43	247	323	2,621	535	20.4%
<b>III) All other products</b>													
16 –	All other goods	1,963	1,821,869	1,823,831	36,795	826,459	2,650,290	161,572	177,281	125,398	3,114,541	62,835	2.0%
17 –	All other services	585,883	1,524,175	2,110,058	17,151	101,735	2,211,792	49,516	-213,547	-176,693	1,871,068	7,527	0.4%
I.	Total output (at producer prices)	1,101,423	3,575,377	4,676,800	221,905	1,024,350	5,701,150	265,134			5,966,284	278,317	4.7%
II.	Total intermediate consumption (at purchasers' prices)	416,972	2,043,018	2,459,990	124,856								
III.	Total gross value added (at producer prices)	684,451	1,532,359	2,216,810	97,049								<b>4.4%</b>
	Compensation of employees	267,923	931,010	1,198,933	51,368								
	Other taxes less subsidies on production	10,821	17,565	28,386	879								
	Depreciation	151,696	213,659	365,355	14,863								
	Net operating surplus	254,011	370,125	624,136	29,940								
	Ratio of gross value added over output	62%	43%	47%	44%								

Source: DIW econ. At producer prices including transformation into purchasers' prices.

## Appendix 7: Employment related to internal tourism consumption (2010)

employed persons			TOTAL	Tourism ratios in %
<b>I) Internationally defined tourism characteristic products</b>				
<b>1 – Accommodation services</b>				
a) Conventional accommodation services	18,634	587,977	698,407	84.2%
b) Imputed accommodation services	159,006	0	0	4.7%
2 – Food and beverage serving services	718	1,125,821	1,317,136	85.5%
3 – Railway passenger transport services	0	18,634	65,005	28.7%
4 – Road and local passenger transport services	2,157	159,006	280,268	56.7%
5 – Water passenger transport services	46,819	718	894	80.3%
6 – Air passenger transport services	256,142	42,370	45,360	93.4%
7 – Car rental services	0	2,157	50,158	4.3%
8 – Travel agencies and tour operators	40,141	46,819	46,819	100.0%
9 – Cultural, sports and recreational services	102,821	256,142	478,712	53.5%
<b>II) Other tourism characteristic products</b>				
10 – Trade show and convention services	2,510	40,141	80,663	49.8%
11 – Rehabilitation clinics	3,585	102,821	1,593,636	6.5%
12 – Groceries	794	42,070	1,393,927	3.0%
13 – Caravans and motor homes	0	2,510	4,778	52.5%
14 – Fuels	197,852	3,585	8,467	42.3%
15 – Bicycles	229,333	794	3,892	20.4%
<b>III) All other products</b>				
16 – All other goods	2,858,748	197,852	8,894,370	2.2%
17 – All other services	0	229,333	25,590,506	0.9%
<b>IN TOTAL</b>	<b>0</b>	<b>2,858,748</b>	<b>40,553,000</b>	<b>7.0%</b>

Source: DIW econ