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The Economic Impact of Germany's Tourism Industry

Key figures from a high-revenue, cross-sectoral industry

Abridged version

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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.¹

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

¹ 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 Economics and Technology (BMWi).

² 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>).

2. 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.

3. 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.

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).³ 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).

Box 1: International definition of „tourism“

Tourism consists of trips with...

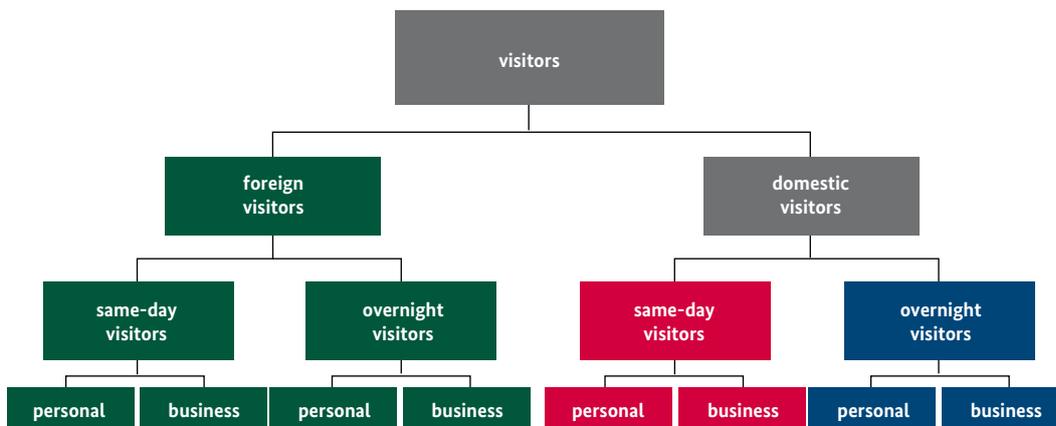
1. ... a principal destination outside the traveller’s usual environment*;
2. ... any principal purpose (business, leisure or other personal purpose**) other than to be employed by a resident entity in the country or place visited;
3. ... a duration of less than one year.

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.

Figure 1: Classification of visitors



Source: DIW econ

³ 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.

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.

3.1 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 products⁴ (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).⁵ The main focus of this report will be on the expenditures on tourism-characteristic goods and services.

3.2 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).

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.

4 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.

5 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.

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

3.3 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 generated⁶, 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%⁷, 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.

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

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

Table 1: Tourism characteristic products and industries

	Tourism Characteristic Industries													
	Accommodation services	Real estate activities with own leased property	Food and beverage serving services	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 services	Business support activities	Health activities	Sale of motor vehicles and other retail activities	Other industries
1 – Accommodation services														
a) Conventional accommodation services	■													
b) Imputed accommodation 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 show and convention services											■			
11 – Rehabilitation clinics												■		
12 – Groceries													■	
13 – Caravans and motor homes														■
14 – Fuels (petrol and diesel)														■
15 – Bicycles														■
16 – All other goods														■
17 – All other services														■

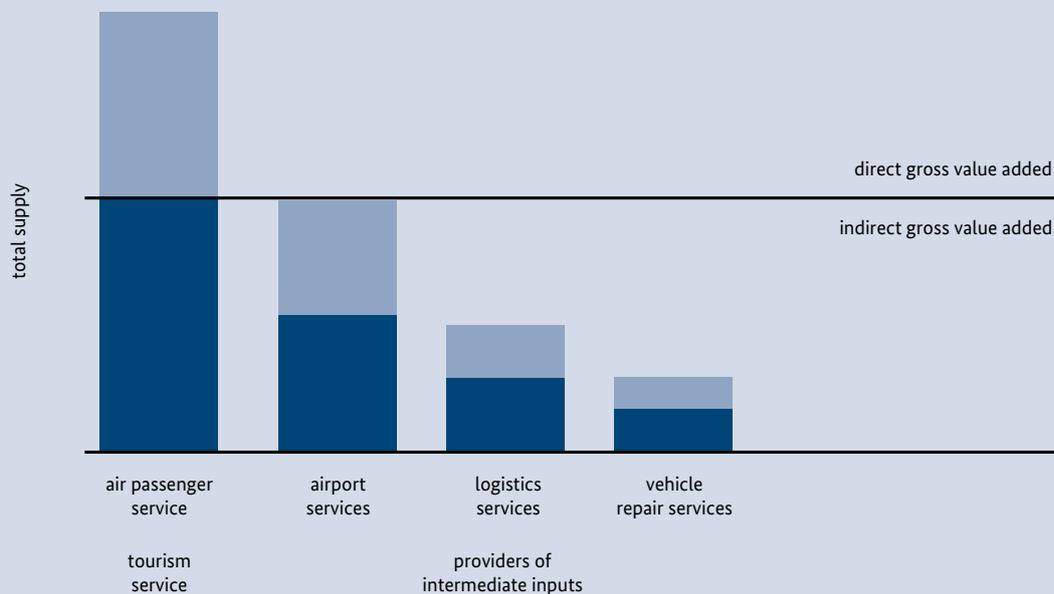
* Accommodation services associated with stays in vacation homes occupied and used by their owners.

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

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 value 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.

4. 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.

4.1 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.

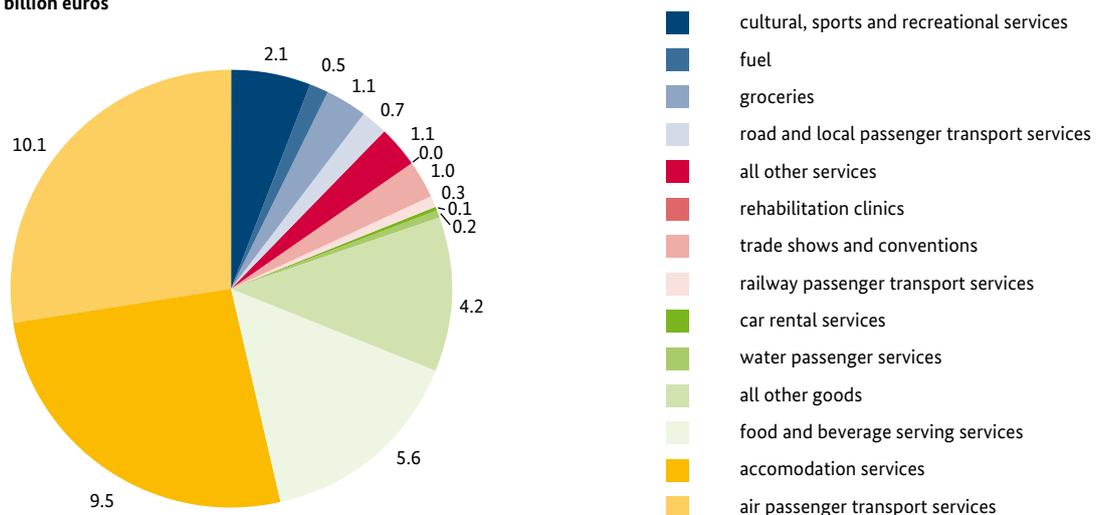
Foreign visitors in Germany spent least on rental cars (133 million euros) and health care services in rehabilitation clinics (34 million euros).

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

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

In total: 36.6 billion euros



Source: DIW econ (2011); in billions of euros.

4.2 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%)

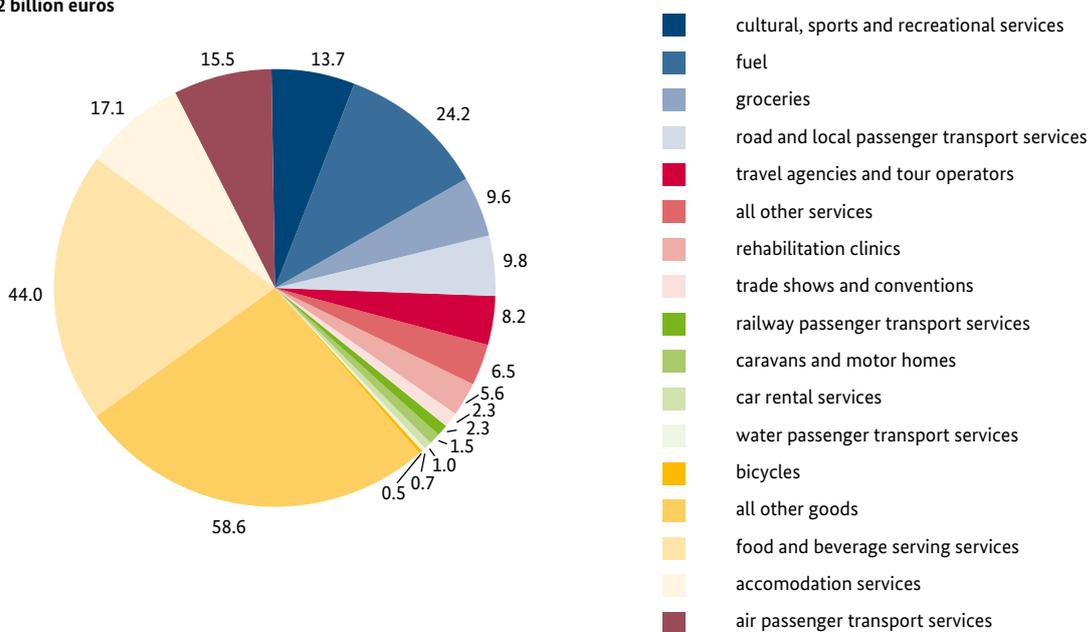
Expenditures related to the purchase and maintenance of bicycles (535 million euros or 0.2%) and for water passenger transport services (735 million euros or 0.3%) accounted for the smallest shares of total expenditures by domestic visitors.

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 trips⁸: 16.8 billion euros
- Domestic overnight visitors on business trips: 14.6 billion euros

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

In total: 221.2 billion euros



Source: DIW econ (2011); in billions of euros.

⁸ 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.

4.3 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).

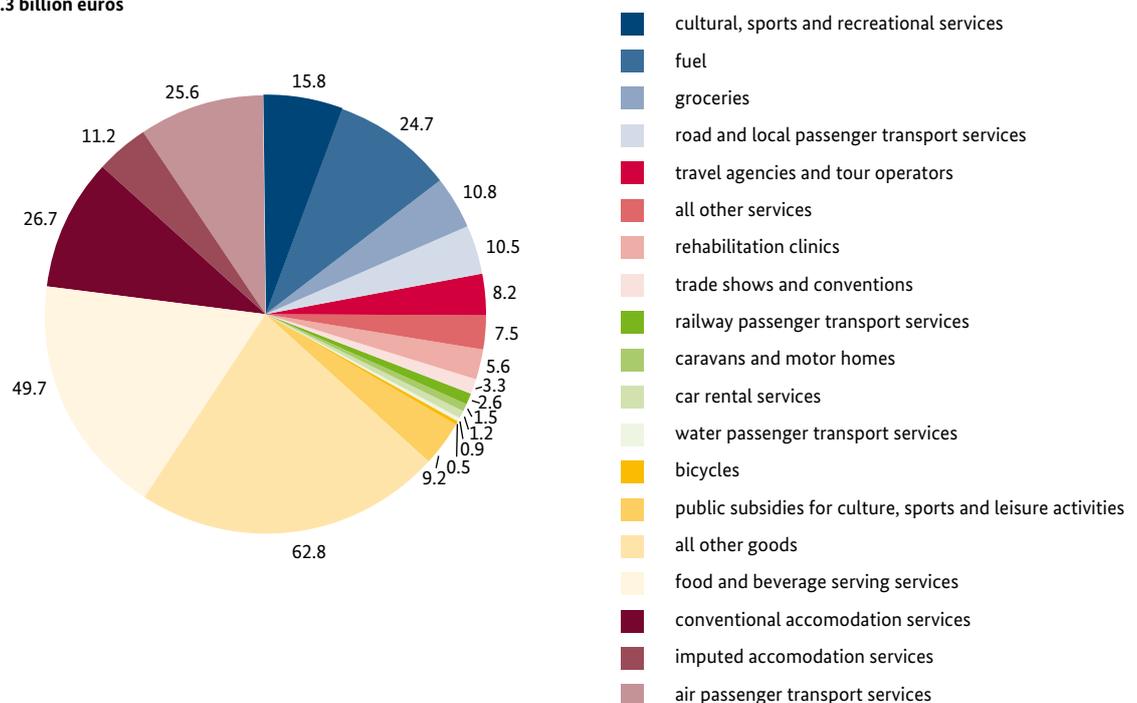
The following items accounted for the largest shares in internal tourism consumption:

- 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%)
- Conventional⁹ 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%).

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 total: 278.3 billion euros



Source: DIW econ (2011); in billions of euros.

9 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.

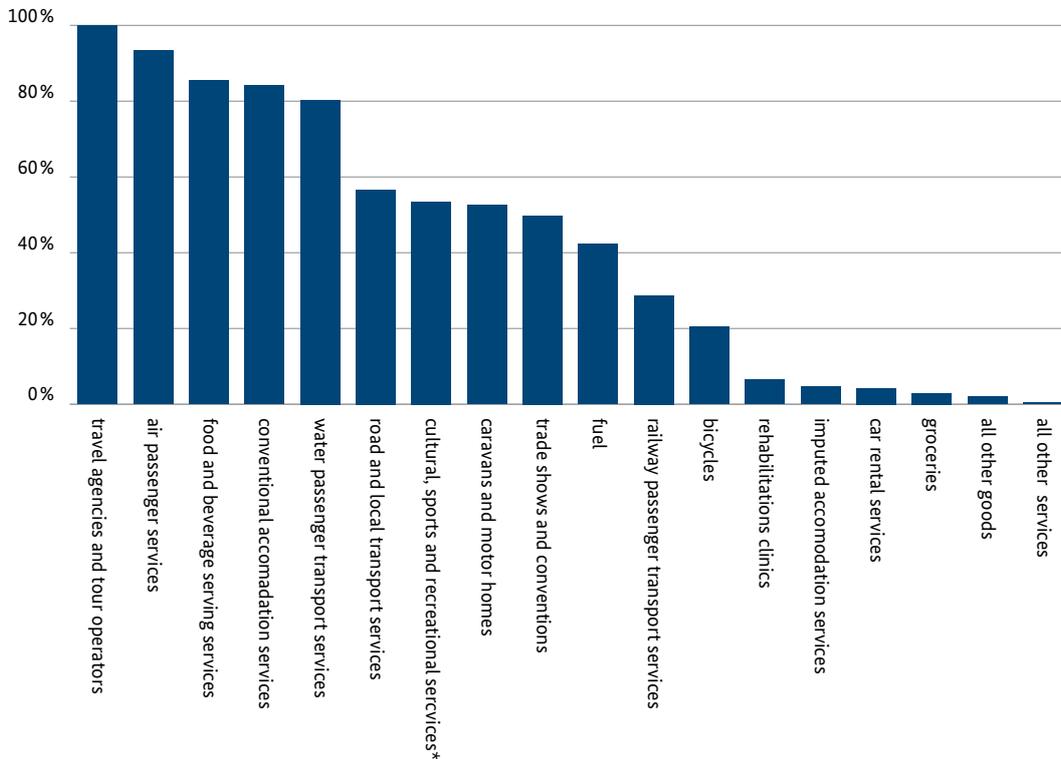
4.4 Tourism supply

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 services¹⁰: 2.6 billion euros, → Figure 4). These services, however, are not only consumed by tourists but also by 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.¹¹ 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.

Figure 5: Tourism ratios by industry in Germany



Source: DIW econ
*including subsidies

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

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

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.¹²

4.5 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.

4.5.1 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.

We compare the value added effects generated by the tourism industry to the ten largest German industries¹³ 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 industry¹⁴.

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%
Total	214.1	47.5	9.7%	2.1%

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

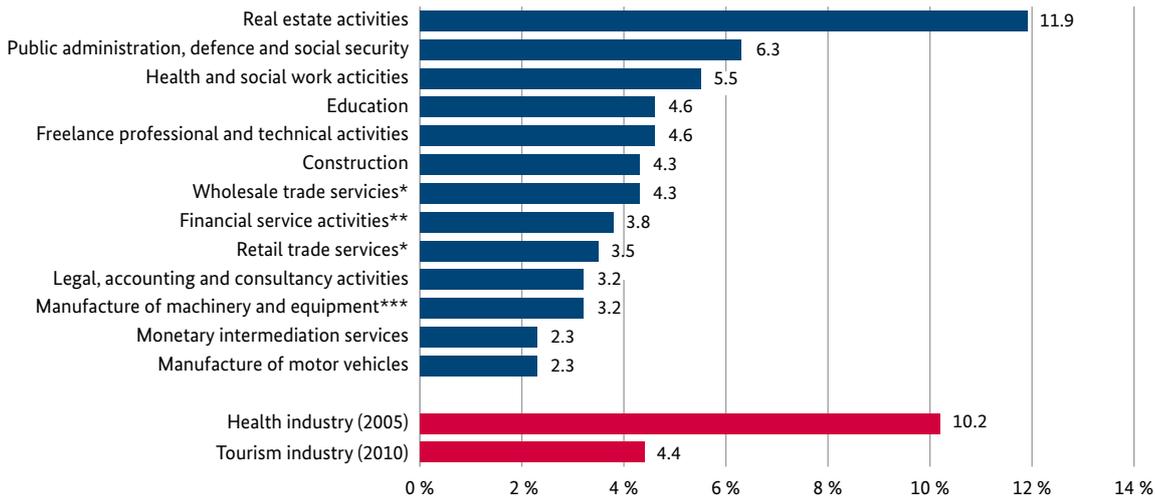
¹² In the case of other services this is because the majority of services, which are typically used for touristic trips (such as transport, accommodation, catering, entertainment, etc.), are already accounted for in other product categories. Moreover, the total supply of all other services entails a 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).

¹³ For the purpose of exposition, the automobile industry has been listed separately.

¹⁴ 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 industry are the results of a cross-sectional analysis based on the value added of different industries.

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 industry¹⁵ (2.3%) and the banking sector¹⁶ (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.

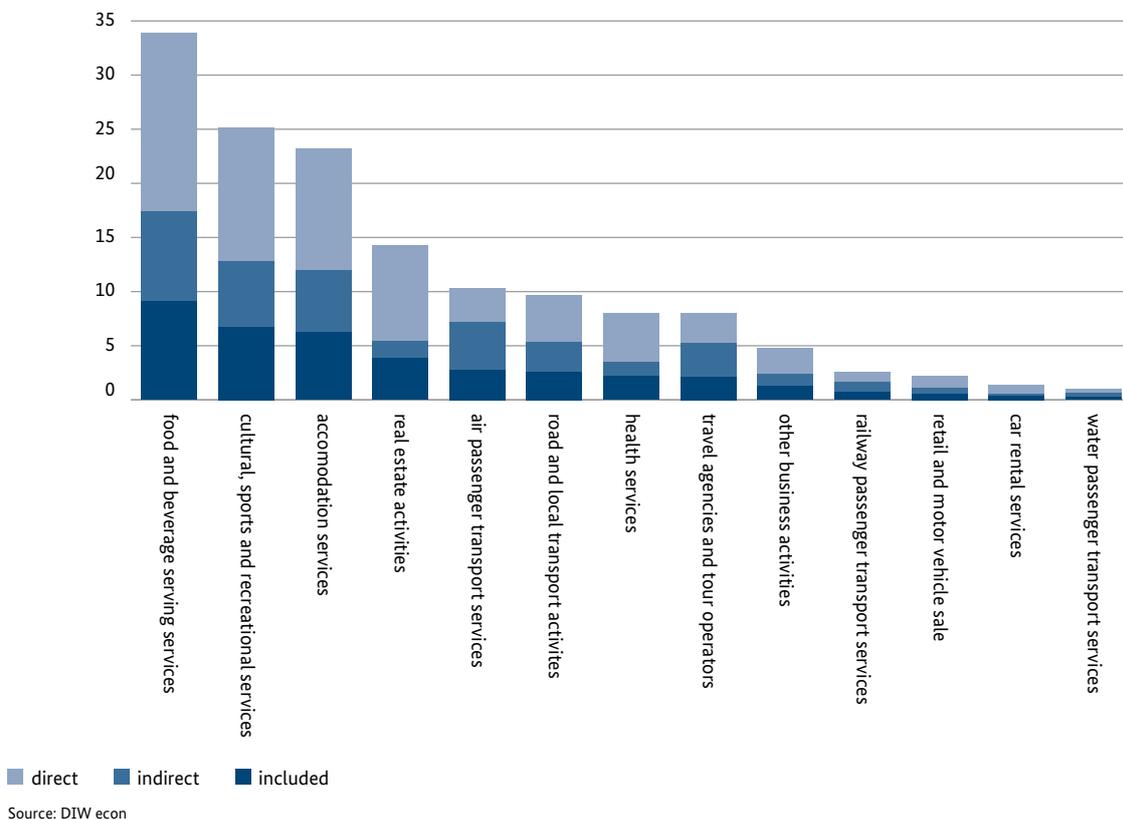
The tourism industry's overall income effect extends over several tourism characteristic industries (Figure 7). Accounting for almost 33.8 billion euros, the food and beverage serving industry contributes most to the overall value added, followed by cultural, sports and recreational service activities (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)¹⁷.

15 Defined as the manufacture of motor vehicles.

16 Defined as monetary intermediation services.

17 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.

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



4.5.2 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.¹⁸ 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.

¹⁸ Total employment amounted to 40.5 million persons in 2010.

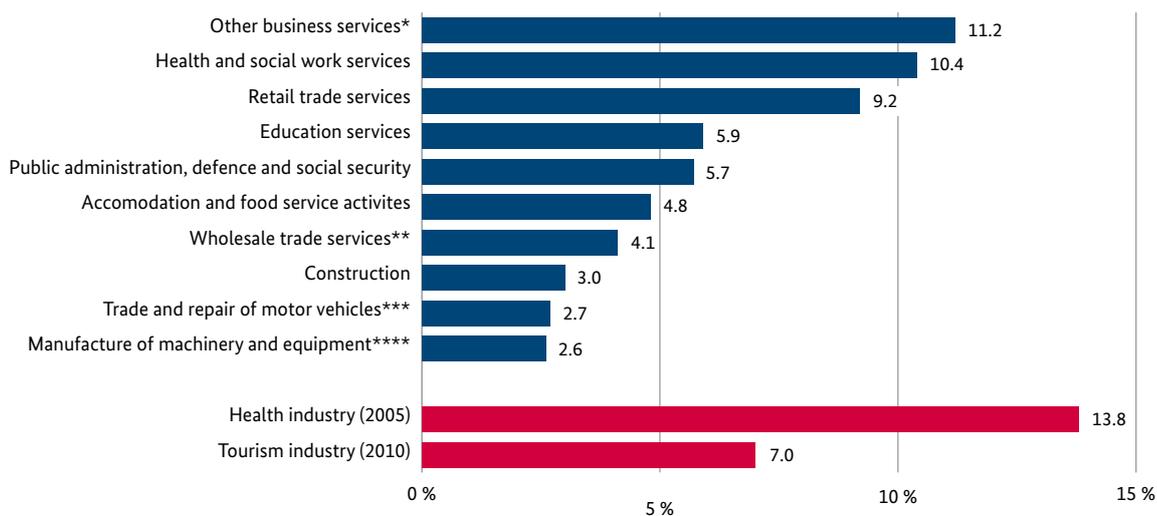
Table 3: Employment effects of the tourism industry in Germany (2010)

	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%
Total	4,873,517	1,173,279	12.0%	2.9%

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

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)

Figure 8 compares the employment share of the tourism industry to the employment shares of the ten largest industries¹⁹ and the health industry as an alternative cross-cutting industry (see below).²⁰ 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 con-

struction (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.

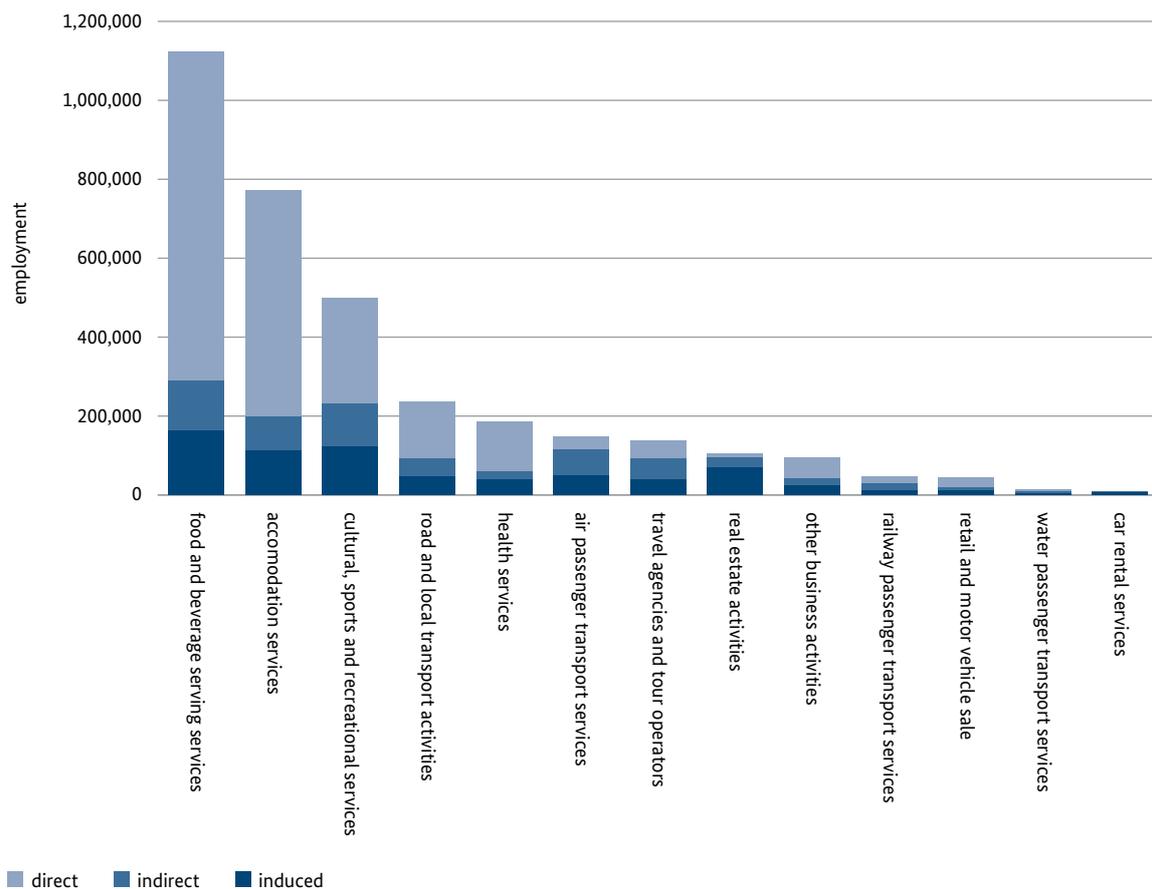
¹⁹ In terms of employment

²⁰ 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.

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.

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

5. 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 1.1	same-day visitors 1.2	overnight visitors 1.3	same-day visitors 1.4	Σ 1.5
I) Internationally defined tourism characteristic products					
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
II) Other tourism characteristic products					
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
III) All other products					
16 – All other goods	2,067	544	1,270	332	4,213
17 – All other services	562	27	472	13	1,075
In total	20,647	1,251	13,516	1,214	36,628

Source: DIW econ

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

in millions of euros	Personal trips		Business trips		Inbound share of outbound trips 2.5	In total Σ 2.6
	overnight visitors 2.1	same-day visitors 2.2	overnight visitors 2.3	same-day visitors 2.4		
I) Internationally defined tourism characteristic products						
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
II) Other tourism characteristic products						
10 – Trade show and convention services	6	108	2,130	88	0	2,332
11 – Rehabilitation clinics	5,553	X	X	X	0	5,553
12 – Groceries	3,544	4,651	157	1,283	0	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	0	535
III) All other products						
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
In total	66,706	95,262	14,566	27,929	16,775	221,236

Source: DIW econ (2012)

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

in millions of euros	Outbound trips		
	overnight visitors 3.1	same-day visitors 3.2	in total 3.1 + 3.2 = 3.3
I) Internationally defined tourism characteristic products			
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
II) Other tourism characteristic products			
11 – Rehabilitation clinics	1,265	X	1,265
12 – Groceries	1,981	427	2,413
14 – Fuels	1,093	1,744	2,836
III) All other products			
16 – All other goods	9,881	2,656	12,537
17 – All other services	1,639	134	1,773
In total	61,522	7,567	69,089

Source: DIW econ (2012)

Appendix 4: Internal tourism consumption in Germany (2010)

in millions of euro	Internal tourism expenditure			Other tourism consumption	Internal tourism consumption
	foreign visitors 1.5	domestic visitors 2.6	in total 1.5 + 2.6 = 4.1		
I) Internationally defined tourism characteristic products					
1 – Accommodation services					
a) Conventional accommodation services	9,519	17,135	26,654	0	26,654
b) Imputed accommodation services	0	0	0	11,233	11,233
2 – Food and beverage serving services	5,629	44,047	49,677	0	49,677
3 – Railway passenger transport services	305	2,265	2,570	0	2,570
4 – Road and local passenger transport services	713	9,757	10,470	0	10,470
5 – Water passenger transport services	212	735	947	0	947
6 – Air passenger transport services	10,112	15,525	25,637	0	25,637
7 – Car rental services	133	1,045	1,178	0	1,178
8 – Travel agencies and tour operators	X	8,200	8,200	0	8,200
9 – Cultural, sports and recreational services	2,068	13,718	15,786	9,221	25,006
II) Other tourism characteristic products					
10 – Trade show and convention services	951	2,332	3,283	0	3,283
11 – Rehabilitation clinics	35	5,553	5,588	0	5,588
12 – Groceries	1,123	9,635	10,758	0	10,758
13 – Caravans and motor homes	X	1,490	1,490	0	1,490
14 – Fuels	539	24,190	24,729	0	24,729
15 – Bicycles	X	535	535	0	535
III) All other products					
16 – All other goods	4,213	58,622	62,835	0	62,835
17 – All other services	1,075	6,452	7,527	0	7,527
In total	36,628	221,236	257,864	20,453	278,317

Source: DIW econ (2012)

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

in millions of euro	Tourism industries						
	55.1 – 55.2	70.2	55.3 – 55.4	60.1	60.2	61.1 – 61.2	
	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	
I) Internationally defined tourism characteristic products							
1 – Accommodation services							
a) Conventional accommodation services	25,787						
b) Imputed accommodation services		234,645					
2 – Food and beverage serving services							
3 – Railway passenger transport services			37,999				
4 – Road and local passenger transport services				8,989			
5 – Water passenger transport services				2	16,370		
6 – Air passenger transport services						1,015	
7 – Car rental services							
8 – Travel agencies and tour operators							
9 – Cultural, sports and recreational services							
II) Other tourism characteristic products							
10 – Trade show and convention services							
11 – Rehabilitation clinics							
12 – Groceries	203		392				
13 – Caravans and motor homes							
14 – Fuels						129	
15 – Bicycles							
III) All other products							
16 – All other goods	11		9	20	537	140	
17 – All other services	523	77,920	723	6,564	36,514	24,128	
I. Total output (at producer prices)	26,524	312,566	39,122	15,575	53,421	25,412	
II. Total intermediate consumption (at purchasers' prices)	13,585	73,948	20,037	8,905	30,544	16,962	
I-II. Total gross value added (at producer prices)^v	12,939	238,618	19,085	6,670	22,877	8,450	
Compensation of employees	8,181	9,904	12,067	5,214	17,883	1,227	
Other taxes less subsidies on production	70	9,596	103	-16	-56	263	
Depreciation	863	87,584	1,273	1,368	4,691	3,718	
Net operating surplus	3,825	131,535	5,642	105	360	3,242	
<i>Ratio of gross value added over output</i>	<i>49 %</i>	<i>76 %</i>	<i>49 %</i>	<i>43 %</i>	<i>43 %</i>	<i>33 %</i>	

Source: DIW econ

Tourism industries									all other industries	Total output of domestic producers
62.1–62.2 air transport 5.6	71.1 car rental 5.7	63.3 travel agencies and tour operators 5.8	92.3-7 o.4, 93.0 cultural, sport and recreational industry 5.9	74.8 other business activities 5.10	85.1 health industry 5.11	50. 52 retail trade activities 5.12	tourism industries 5.13	5.14		5.13 + 5.14 = 5.15
								25,787	98	25,884
								234,645		234,645
	37					190	38,226	10,590		48,816
							8,989			8,989
			81				3	16,456	1,409	17,865
								1,015		1,015
	21,992							21,992		21,992
		26,177				432	26,609			26,609
	517		7,567				8,083			8,083
				38,521				38,521	2,167	40,688
					6,089			6,089	126	6,215
						86,285		86,285		86,285
							120	715	181,706	182,420
									2,328	2,328
								129	30,044	30,173
							37	37	866	903
	40			606		100	500	1,963	1,821,869	1,823,831
	4,822		208	52,384	76,733	94,996	210,369	585,883	1,524,175	2,110,058
	27,407	26,177	7,856	91,511	82,822	181,380	211,650	1,101,423	3,575,377	4,676,800
	23,127	5,522	4,769	33,743	33,172	58,682	93,977	416,972	2,043,018	2,459,990
	4,280	20,655	3,086	57,769	49,650	122,698	117,673	684,451	1,532,359	2,216,810
	2,895	1,254	1,574	18,398	25,152	78,291	85,883	267,923	931,010	1,198,933
	104	222	66	-109	607	-3,299	3,272	10,821	17,565	28,386
	976	17,798	753	8,711	1,648	14,168	8,145	151,696	213,659	365,355
	305	1,380	693	30,768	22,244	33,538	20,373	254,011	370,125	624,136
	16%	79%	39%	63%	60%	68%	56%	62%	43%	47%

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) excluding direct purchase of resi- dents abroad
		output 5.13	output 5.13	5.13 + 5.14 = 5.15	tourism share	amount 6.1
I) Internationally defined tourism characteristic products						
1 – Accommodation services						
a) Conventional accommodation services	...	25,787	98	25,884	21,792	2,859
b) Imputed accommodation services	...	234,645	0	234,645	11,028	2,647
2 – Food and beverage serving services	...	38,226	10,590	48,816	41,725	3,949
3 – Railway passenger transport services	...	8,989	0	8,989	2,577	1,468
4 – Road and local passenger transport services	...	16,456	1,409	17,865	10,136	1,104
5 – Water passenger transport services	...	1,015	0	1,015	815	161
6 – Air passenger transport services	...	21,992	0	21,992	20,542	4,127
7 – Car rental services	...	26,609	0	26,609	1,145	0
8 – Travel agencies and tour operators	...	8,083	0	8,083	8,083	0
9 – Cultural, sports and recreational services	...	38,521	2,167	40,688	21,771	3,623
II) Other tourism characteristic products						
10 – Trade show and convention services	...	6,089	126	6,215	3,093	22
11 – Rehabilitation clinics	...	86,285	0	86,285	5,567	0
12 – Groceries	...	715	181,706	182,420	5,506	70,465
13 – Caravans and motor homes	...	0	2,328	2,328	1,223	294
14 – Fuels	...	129	30,044	30,173	12,774	4,334
15 – Bicycles	...	37	866	903	184	1,104
III) All other products						
16 – All other goods	...	1,963	1,821,869	1,823,831	36,795	826,459
17 – All other services	...	585,883	1,524,175	2,110,058	17,151	101,735
I. Total output (at producer prices)	...	1,101,423	3,575,377	4,676,800	221,905	1,024,350
II. Total intermediate consumption (at purchasers' prices)	...	416,972	2,043,018	2,459,990	124,856	
I-II. Total gross value added (at producer prices)	...	684,451	1,532,359	2,216,810	97,049	
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	
<i>Ratio of gross value added over output</i>	...	62 %	43 %	47 %	44 %	

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

employed persons	Related to tourism consumption	Total	Tourism ratios in %
I) Internationally defined tourism characteristic products			
1 – Accommodation services			
a) Conventional accommodation services	587,977	698,407	84.2 %
b) Imputed accommodation services	0	0	4.7 %
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			
II) Other tourism characteristic products			
10 – Trade show and convention services			
11 – Rehabilitation clinics			
12 – Groceries			
13 – Caravans and motor homes			
14 – Fuels			
15 – Bicycles			
III) All other products			
16 – All other goods			
17 – All other services			
In total	2,858,748	40,553,000	7.0 %

Source: DIW econ (2012)

