



Peter Laimer
Directorate Spatial Statistics

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Measurement of tourism employment

Challenges and methodology considering
TSA-related estimates in Austria



Measuring employment in tourism is confronted with multidimensional challenges ...

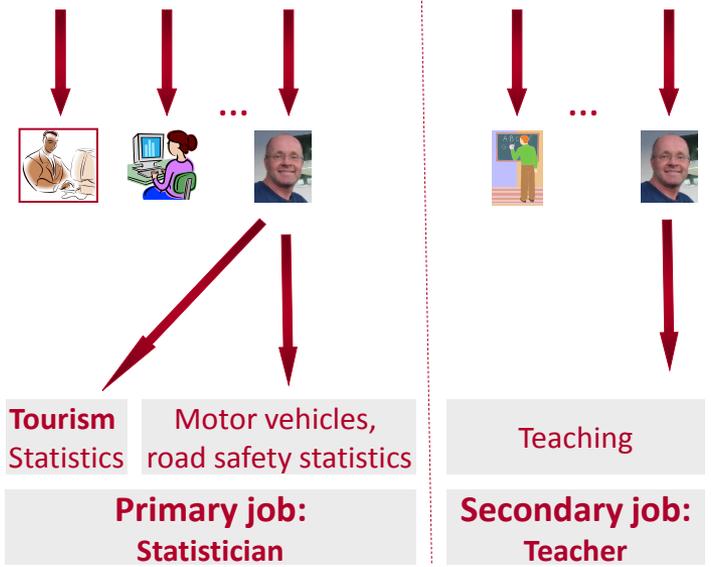


... but there are ways out!

Challenge 1: Tourism characteristicity (1)

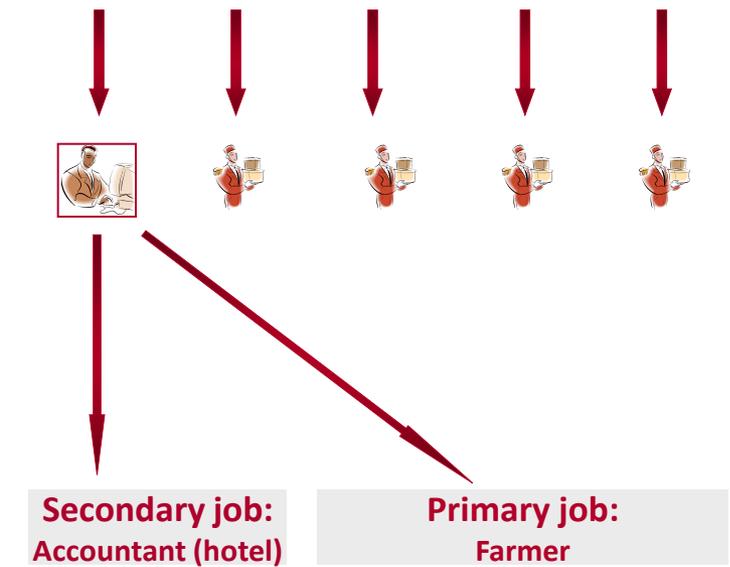


Non-tourism characteristic activity



- Questions might arise:
1. Which part of my work is tourism characteristic?
 2. Am I registered as a tourism employed?
 3. Am I considered as indirect tourism employed?
 4. Is tourism employment underestimated?

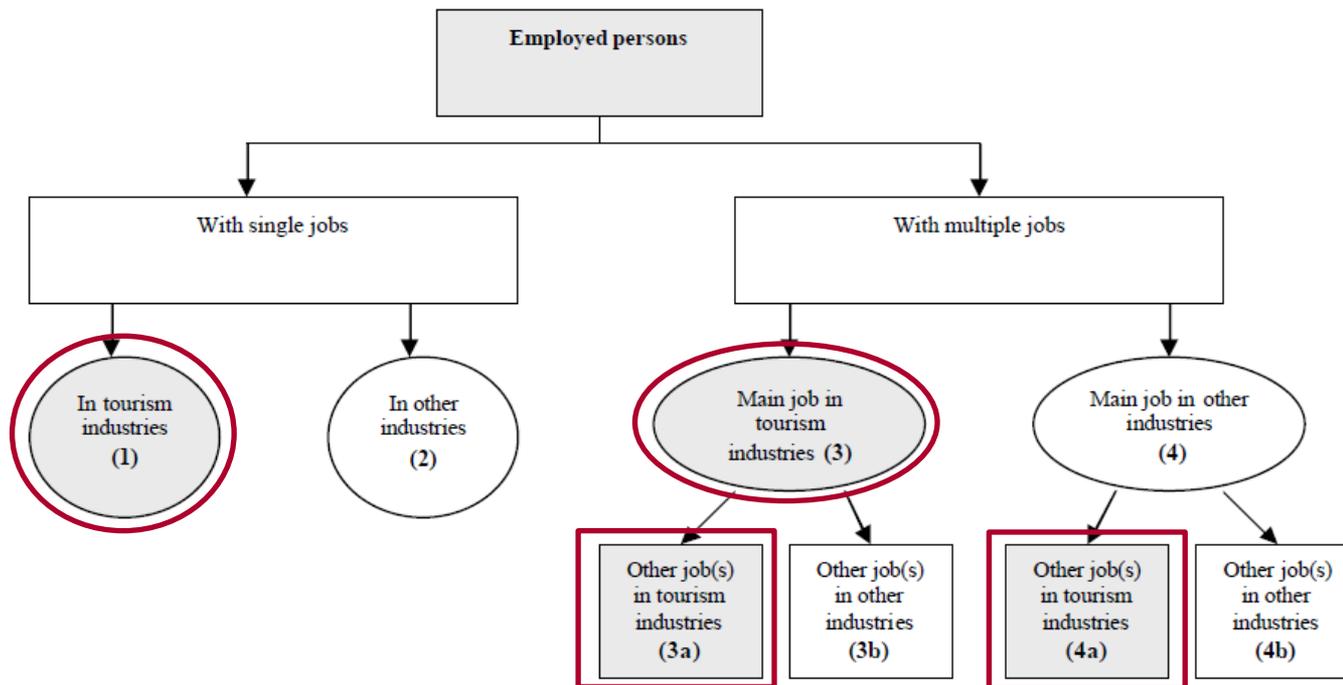
Tourism characteristic activity



- Questions might arise:
1. Which job counts, primary or secondary one?
 2. Are they registered as tourism employed?
 3. Is tourism employment overestimated?

Challenge 1: Tourism characteristicity (2)

Single versus multiple job holders in the tourism industries



Persons employed in the tourism industries (all jobs) = 1, 3, 4a
 Persons employed in the tourism industries (main job) = 1, 3
 Jobs in the tourism industries = 1, 3a, 4a

S: IRTS 2008, p.68

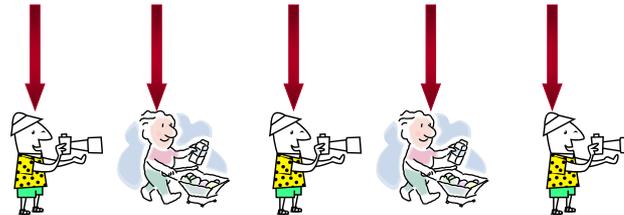


TSA-relevant

Challenge 2: Visitor versus non-visitor (1)



Retail sector



Inbound tourism expenditure of non-resident visitors (“non-usual environment”)

Domestic tourism expenditure of resident visitors (“non-usual environment”)

**Domestic part of outbound tourism expenditure
of resident visitors (“non-usual environment”)**

Final consumption expenditure of resident households (“usual environment”) – non-visitors

Questions might arise:

1. Which part of employment in the retail sector is tourism-characteristic?
2. How do employed persons in the retail sector find out, who is a visitor, who is a non-visitor?

Challenge 2: Visitor versus non-visitor (2)



Labour is a **factor of production** (besides capital and land)...

- ... and as such, related to a **production process, not to a product**, and - even less so - to the consumption of a product by **certain category** of consumers (e.g. a visitor);
- ... and can be associated with the **total output of an establishment**, but **cannot be assigned** to any particular output or **part of output** without the use of specific assumptions and modelling procedures.

Therefore:

- 1) **Employment associated with tourism consumption** can only be estimated via an explicit or an implicit **model** (i.e. via tourism ratios and/or demand based on TSA).
- 2) **Tourism employment** - meaning the employment strictly related to the goods and services acquired by visitors and produced either by tourism industries or other industries - **cannot be directly observed** (e.g. the differentiation of selling of tourism products to visitors and non-visitors).

Challenge 3: Different data sources related to labour



Household Sample surveys	Population census	Surveys of establishments	Administrative sources
↓	↓	↓	↓
Sample	Complete enumeration	Sample or full count	Entire population
Measurement unit: Household	Measurement unit: Individual	Measurement unit: Establishment	Measurement unit: Individual, establishment
Main objective: Data on economically active and inactive persons	Main objective: Complete information on population's size and characteristics	Main objective: Collection of economic variables of establishments	Main objective: Administrative process
CAPI, CATI and WAPI	CAPI, CATI and register	Web-questionnaire, CAPI, CATI, paper-questionnaire	Mainly web- or paper questionnaire
Done on a quarterly, yearly or current basis	Mostly done every 10 years	Mostly done on a yearly basis (samples)	Done on a current basis
... serve as a basis for measuring tourism employment!			

Based on ILO the population is divided into 2 groups:

1. Economically active:

✓ Employed persons

- at least one hour in the reference week, or
- not working due to holiday, illness, etc. but is normally employed,
- e.g. women on parental leave are included in the category of employed persons if they have a formal attachment to the job.

✓ Unemployed persons

- not employed in the above sense,
- taking active steps to look for work,
- and is able to start work at short notice.

2. Economically inactive (neither employed nor unemployed):

- ✓ producing services for the consumption of their households (providers of services for own household consumption),
- ✓ persons who would like to work and are available to do so, but who do not look actively for work for various reasons (discouraged workers).



Challenge 4: Different concepts of labour (2)



Labour Force Concept



Geographical coverage:

- Resident employed persons
- National concept (excl. border workers from abroad)

Coverage differences:

Persons living in institutional or collective households (e.g. conscripts), unpaid apprentices and trainees and/or persons on extended parental leave **are not covered.**

Recording thresholds:

- Persons below 15 years are excluded.
- Persons above 75 years are occasionally excluded.

National Accounts



Geographical coverage:

- Resident and non-resident employed persons in resident production units
- Domestic concept (incl. border workers from abroad)

Coverage differences:

Persons living in institutional or collective households (e.g. conscripts), unpaid apprentices and trainees and/or persons on extended parental leave **are covered.**

Recording thresholds:

Persons are not excluded from employment because of age (the difference is very small in developed economies).

Challenge 5: TSA-Table 7 (1)



- **Tourism Satellite Account recommends** the estimation of employment in 12 tourism industries, only (as presented in TSA-Standard-Table 7).
- **TSA-Table 7** is showing employment by the tourism industries, additionally towards the number of jobs, FTE, hours worked etc.
- For estimating **tourism employment**
 - ✓ **tourism ratios** - based on TSA-Table 6 - might be applied to TSA-Table 7 by tourism industries, and
 - ✓ the respective results are **summed up**.

But: When applying such a modelling procedure it is assumed that the **production function** (relation between physical output of a production process and physical inputs or factors of production as land, capital and labour) of **any part of output** of an industry **consumed by visitors** is the same as that of the **total output** of this industry.



Related to TSA-Table 7 it has to be considered, that ...

- ... measurement of employment is limited to employment in the **tourism industries**, only, and additionally **does not consider indirect effects** on overall employment.
- ... **persons providing tourism-characteristic services** of an establishment belonging to a non-tourism characteristic industry (e.g. establishment whose principal activity is “agriculture” according to KAU-concept) will not be included in “employment in the tourism industries”.
- ... **persons employed** in an establishment belonging to a **tourism characteristic industry** who participate in the establishment’s non-tourism-characteristic activities (e.g. in “information and communication”) will be included in “employment in the tourism industries”.
- ... **seasonality** - marked by visitors’ flows – is often not shown by yearly average employment figures, although in particular in accommodation and food- and beverage-serving sector it is an important phenomenon (measuring employment at least twice a year, at peak and low tourism seasons would be necessary).

Challenge 5: TSA-Table 7 (3)



Table 7
Employment in the tourism industries

Tourism industries	Number of establishments	Number of jobs by status in employment (*)									
		Employees			Self-employed						
		Male	Female	Total	Male	Female	Total				
1. Accommodation for visitors											
1.a. Accommodation services for visitors other than 1.b											
1.b. Accommodation services associated with all types of vacation home ownership											
2. Food- and beverage-serving industry											
3. Railways passenger transport											
4. Road passenger transport											
5. Water passenger transport											
6. Air passenger transport											
7. Transport equipment rental											
8. Travel agencies and other reservation services industry											
9. Cultural industry											
10. Sports and recreational industry											
11. Retail trade of country-specific tourism characteristic goods											
12. Country specific tourism industries											
Total											



Table 7 (continued)
Employment in the tourism industries

Tourism industries	Number of hours worked by status in employment (*)						Number of full-time equivalent jobs by status in employment (*)					
	Employees			Self-employed			Employees			Self-employed		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1. Accommodation for visitors												
1.a. Accommodation services for visitors other than 1.b												
1.b. Accommodation services associated with all types of vacation home ownership												
2. Food- and beverage-serving industry												
3. Railways passenger transport												
4. Road passenger transport												
5. Water passenger transport												
6. Air passenger transport												
7. Transport equipment rental												
8. Travel agencies and other reservation services industry												
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11. Retail trade of country-specific tourism characteristic goods												
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Total												

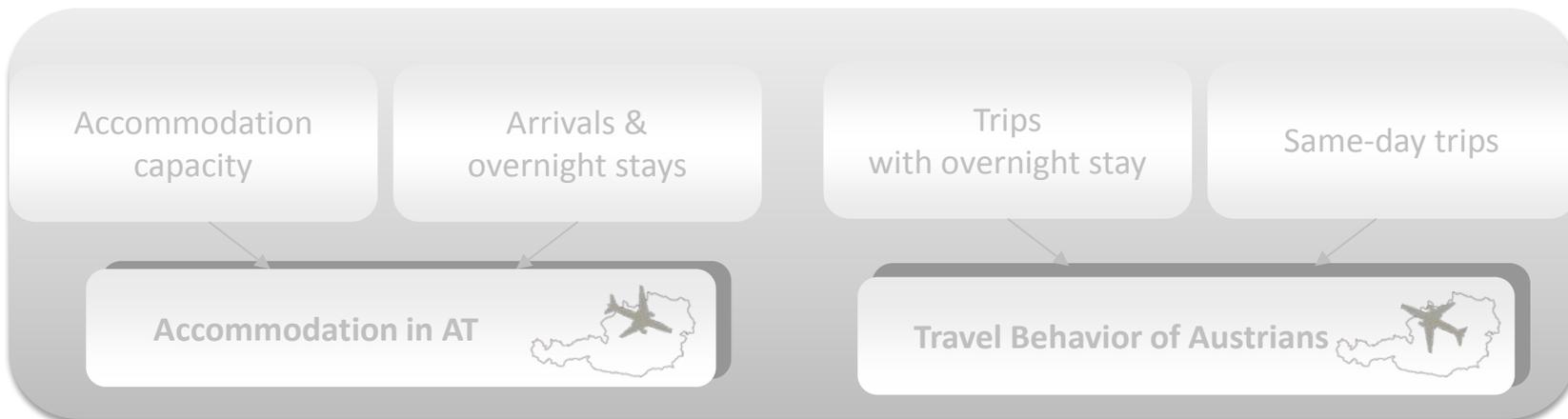
(*) In the reference period.



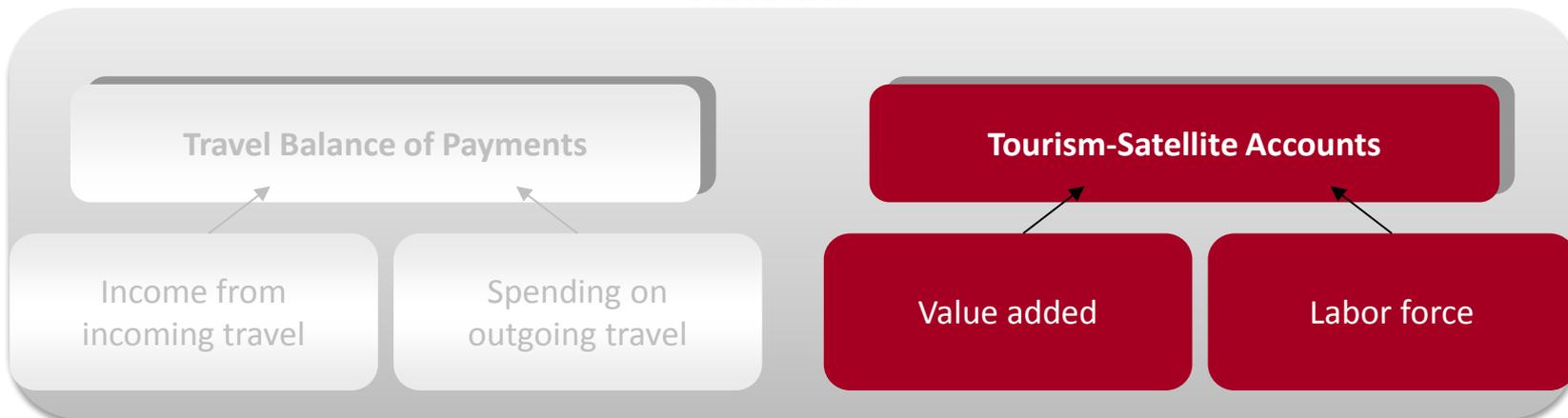
Ways out – TSA-Table 7 (the Austrian case)



Primary Statistics



Accounts





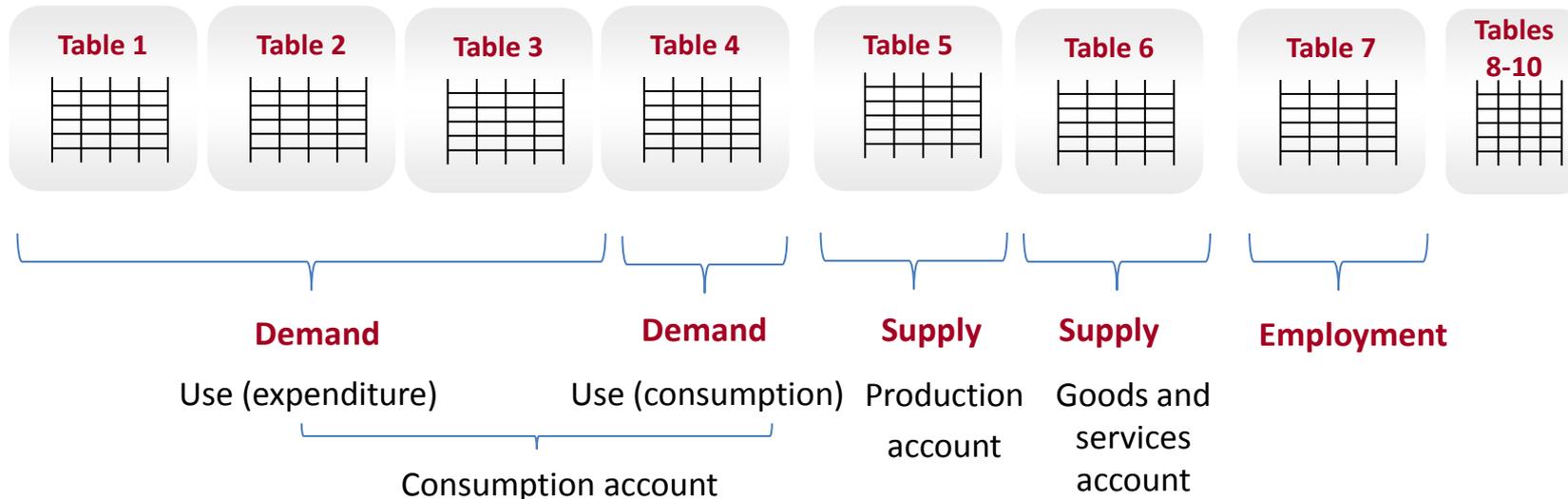
SNA 2008 (besides environmental accounting and health satellite accounts (and unpaid household activity)) and **ESA 2010** are proposing to draw up Tourism Satellite Accounts (SNA 2008, para 29.89-29.101; ESA 2010, para 22.123-22.129, Table 22.1 (para 22.06)), for the analysis of the role of tourism in the national economy, as

SNA 2008 and ESA 2010 do not distinguish between a shoe purchased by a visitor or by a resident.

Therefore:

- Tourism Satellite Account (TSA) **integrates supply and demand side information** figuring out the share of tourism demand related to the total value added by tourism industries.
- TSA links tourism statistics with **macroeconomic analysis**.
- TSA highlights the link between **domestic, inbound and outbound** (domestic part) tourism and the **Balance of Payments (BoP)**.
- The respective commodities produced by tourism suppliers and purchased by visitors are included in the **core accounts/tables of TSA**.

TSA as a system of connected and interrelated Tables



→ **direct** effects (\neq indirect) of **Tourism** (\neq leisure activities of residents within usual environment)

TSA-Manuals:

1. **UNWTO-Manual**: TSA Recommended Methodological Framework 2008 (TSA RMF 2008)
2. **EUROSTAT-Manual**: European Implementation Manual on TSA (EIM TSA)
3. **OECD-Manual**: Measuring the Role of Tourism in OECD Economies (incl. employment)

Ways out – TSA-Table 7 (the Austrian case)



Tourism causes **direct and indirect employment effects** which go beyond “accommodation for visitors” and “food and beverage serving industry”.

However, before 2003 in Austria employment figures related to „**accommodation and food and beverage serving industry**” had been presented, only, which did not reflect overall tourism employment and which had not been in line with TSA concept.

The limited view on tourism employment: Employed persons in accommodation and restaurant sector (yearly average)

	2006	2007	2008**	2009	2010	2011	2012
Accommodation and restaurant	168.038	168.924	177.463	176.788	180.964	184.550	191.607
Difference against previous year	4.691	886		- 675	4.176	3.586	7.057
Change in %	2,87	0,53		- 0,38	2,36	1,98	3,82
Minor employed			35.270	39.376	42.896	46.250	49.618
Average employed in overall economy	3.284.167	3.344.039	3.388.632	3.339.064	3.360.258	3.421.755	3.465.463
Difference against previous year	49.531	59.872	44.593	-49.568	21.194	61.497	43.708
Change in %	1,53	1,82	1,33	- 1,46	0,63	1,83	1,28
Share of employed in „accommodation and restaurant“ related to overall employment (in %)	5,12	5,05	5,24	5,29	5,39	5,39	5,53

S: Austrian Economic Chambers



Therefore:

- The development of a **tool measuring tourism employment** according to TSA-requirements seemed to be necessary which was initiated by Statistics Austria (STAT; http://www.statistik.at/web_en/statistics/tourism/tourism_satellite_accounts/labour_force/index.html) and the Austrian Institute for Economic Research (WIFO; <http://www.wifo.ac.at/jart/prj3/wifo/main.jart?rel=en>) in 2003, commissioned by the Austrian Federal Ministry of Economy, Family and Youth (BMWFJ; <http://www.en.bmwfj.gv.at/Seiten/default.aspx>), since then.
- **TSA-defined tourism industries**, as accommodation, food & beverage service activities, passenger transport, “travel agency and other reservation services” and “culture, entertainment and sport” (retail trade and other country-specific tourism industries are not considered, so far).

Tourism Satellite Accounts (TSA)

- Rather comprehensive coverage – 12 tourism industries
- In line with NA-requirements
- Considering tourism demand & supply
- Full-time equivalents (FTE)

Other Data Sources

- Less coverage – selected tourism industries
- Not in line with NA-requirements
- Considering tourism supply, only
- Mainly employed persons and jobs

Ways out – TSA-Table 7 (the Austrian case)



What is calculated

Aim	Information about tourism labour is provided by using/integrating labour statistics and TSA	
Subject	Tourism's contribution to overall employment in Austria	
Coverage	Direct effects of tourism industries on overall employment, available for Austria from reference year 2003 onwards (indirect effects and effects of leisure industry on overall employment are additionally estimated)	

Why is it calculated

Legal basis	x
Contract	Commissioned by the Federal Ministry for Economy, Family and Youth (BMWFJ) done by Statistics Austria (STAT) and the Austrian Institute for Economic Research (WIFO)

How is it calculated

Type of statistics	Synthetic product: model estimation based on existing labour data and TSA
Method	TSA: Recommended Methodological Framework 2008 (UNWTO, OECD, EUROSTAT)

Ways out – TSA-Table 7 (the Austrian case)

The TSA-view related to tourism employment:
Number of direct jobs and FTE in tourism industries 2011 ¹⁾

Tourism industries	Number of jobs		Full time equivalents (FTE)							
	in 1 000	Share in %	Employees		Self-employed		Total			
			in 1 000	Share in %	in 1 000	Share in %	in 1 000	Share in %		
Accommodation and food and beverage serving industry										
Total	190,5	60,5	120,1	55,5	+	27,5	72,2	=	147,6	58,0
Accommodation for visitors	76,1	24,2	48,6	22,5		10,2	26,8		58,8	23,1
Food and beverage serving industry	114,4	36,3	71,5	33,1		17,3	45,4		88,8	34,9
Passenger transport										
Total	95,8	30,4	79,2	36,6		5,9	15,5		85,2	33,5
Railway passenger transport	8,1	2,6	7,1	3,3		-	-		7,1	2,8
Road passenger transport	45,6	14,5	38,1	17,6		4,0	10,5		42,2	16,6
Water passenger transport	0,0	0,0	0,0	0,0		0,0	0,0		0,0	0,0
Air passenger transport	5,9	1,9	4,3	2,0		0,1	0,3		4,5	1,8
Passenger transport supporting industry	0,7	0,2	0,6	0,3		0,1	0,3		0,7	0,3
Travel agencies and other reservation services industry	35,5	11,3	29,1	13,5		1,7	4,5		30,7	12,1
Culture, entertainment, sport										
Total	28,7	9,1	17,0	7,9		4,7	12,3		21,7	8,5
Cultural industry	18,3	5,8	10,8	5,0		3,0	7,9		13,9	5,5
Sports and recreational industry	10,4	3,3	6,2	2,9		1,7	4,5		7,9	3,1
Total										
TOTAL	315,1	100,0	216,3	100,0		38,1	100,0		254,5	100,0

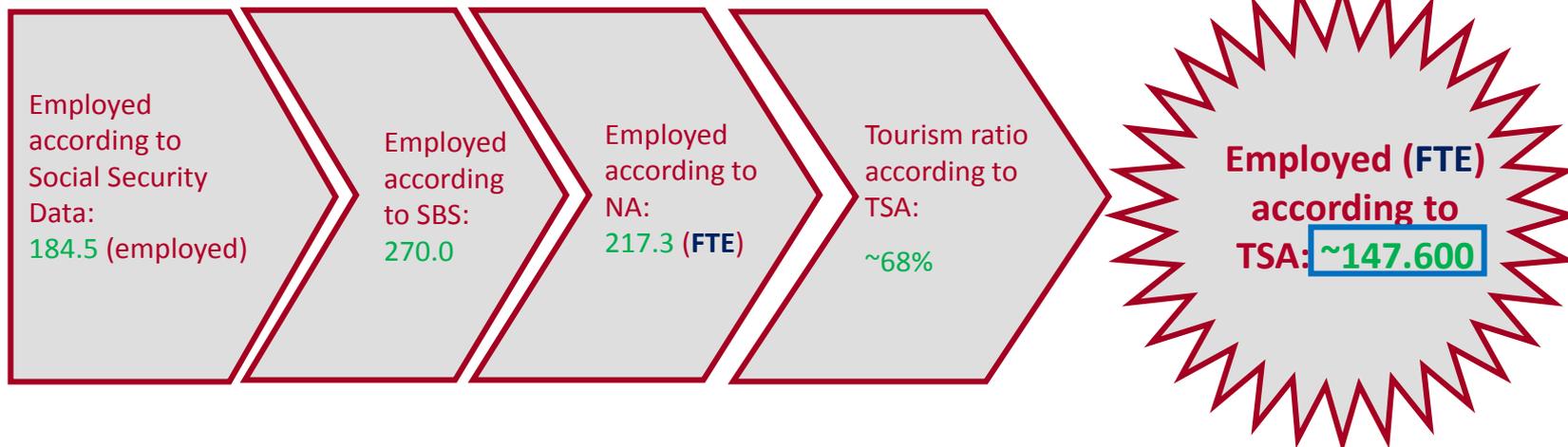
S: STATISTICS AUSTRIA, Tourism Satellite Accounts for Austria; WIFO (Austrian Institute of Economic Research). Compiled February 2013. - 1) Preliminary results.

Ways out – TSA-Table 7 (the Austrian case)



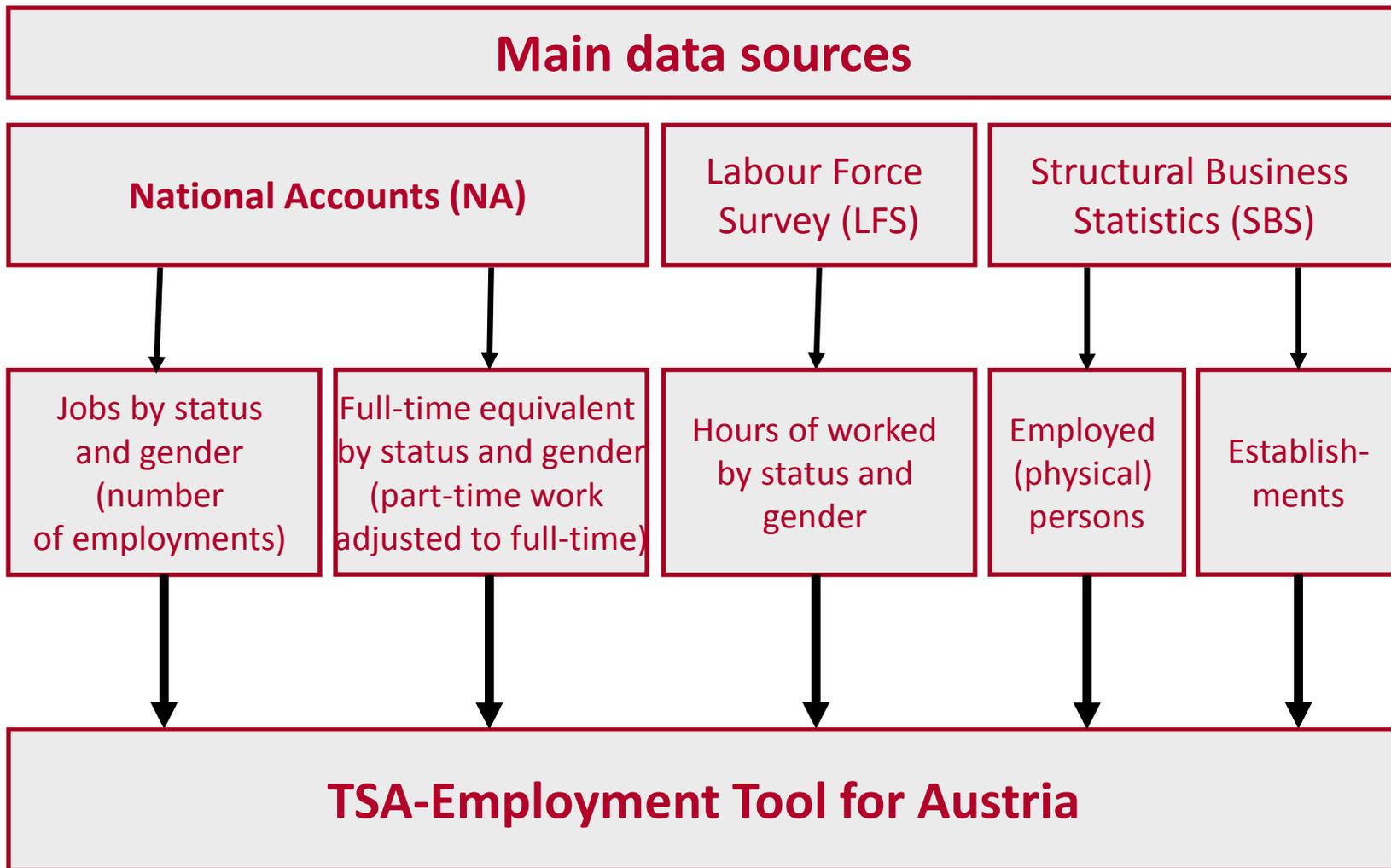
Supply (NACE I 55) *)

Demand



*) Accommodation and restaurants.

Ways out – TSA-Table 7 (the Austrian case)





Sources for measuring employment in the tourism industries:

- From the **demand side** - household surveys (e.g. LFS), **main challenges:**
 - ✓ Level of detail (sampling frame)
 - ✓ Snapshot at a given moment in time
 - ✓ Relationship of this snapshot with supply statistics
 - ✓ Non-permanent activities; seasonality
 - ✓ Individuals with more than one job
- From the **supply side** - surveys of economic activities (e.g. business statistics), **main challenges:**
 - ✓ Level of detail of activities (sampling frame)
 - ✓ Comparability of time series
 - ✓ Geographical coverage (sample surveys); e.g. rural areas or small villages
- Statistics based on **administrative records** (e.g. social security files, tax reports, employment reports), **but shortcomings:**
 - ✓ limited coverage
 - ✓ the exclusion of informal establishments and content
 - ✓ inflexible concepts and definitions
 - ✓ incompleteness, inconsistencies and restricted access due to legal or administrative constraints

Data sources in Austria

National Accounts

National Accounts (general)

National Accounts (employment; FTE)

Business Statistics

Structural Business Statistics

Short Term Statistics

Business Register

Population Statistics

Census

Labor Force Survey

External Data Sources

Social Security Data (employment)

Austrian Economic Chambers

Public Employment Service Austria

Federal Ministry of Economy, Family and Youth

Tourism & Travel Statistics STAT

Accommodation Statistics

Tourism Satellite Accounts

Travel Balance of Payment



Ways out – TSA-Table 7 (the Austrian case)



Number of jobs

5 Full-time-
employed persons
(8 hours/day)

3 Part-time
employed persons
(4 hours/day)

8 Jobs

Full-time equivalents (FTE)

5 Full-time-
employed
persons
(8 hours/day)

40 hours

3 Part-time
employed
persons
(4 hours/day)

12 hours

52/8 hours

6,5 (FTE)
according to
NA and TSA

Ways out – TSA-Table 7 (the Austrian case)



Total Supply and Internal Tourism Consumption by Products

Goods and services	Tourism-industries				Other industries	Total output of domestic producers + Imports + Taxes less Subsidies	Total output of domestic producers	Internal tourism consumption (TSA-Table 4)	Tourism ratio
	1	...	12	Σ					
Tourism characteristic goods and services									
Other consumption products									
Non consumption products									
Output									
Intermediate consumption									
Gross Value Added (GVA)									
Tourism Direct Gross Value Added (TDGVA)									Σ

Basic/producers prices

Purchasers prices



Ways out – TSA-Table 7 (the Austrian case)



Tourism industries	Number of establishment	Number of jobs by status in employment						Number of hours worked by status in employment						Number of FTE jobs by status in employment					
		employees			self employed			employees			self employed			employees			self employed		
		M	F	Σ	M	F	Σ	M	F	Σ	M	F	Σ	M	F	Σ	M	F	Σ
Accommodation for visitors – Accommodation services for visitors other than 1.b – Accommodation services associated with all types of vacation home ownership*)																			
Food and beverage serving industry																			
Passenger transport: - Railway - Road - Water - Air																			
Transport equipment rental*)																			
Travel agencies and other reservation services industry																			
Cultural industry																			
Sports and recreational industry																			
Retail trade of country specific tourism characteristic goods*)																			
Other country-specific tourism industries*)																			
Total																			

... applying tourism ratios (TSA Table 6) to the corresponding industries!



Challenges:

- The Austrian TSA- employment tool does not highlight any information on **black or illegal labour or working family** members because of lacking data sources.
- The Austrian tourism is concentrated in space and time which causes great variation in the labour force demand. Nevertheless, the results based on TSA-Table 7 do not highlight **seasonal nor spatial variations**, since NA does not provide appropriate employment related data.
- The **integration of the tourism demand** side (applying “tourism ratios”) can only be used as indications, at least in terms of levels of employment: If output in an industry increases by 10%, this can, for instance, be the result of a decrease (rather than an increase) in tourism expenditure and a proportionally large increase in non-tourism expenditures in that industry (i.e. retail trade, subnational level).

Ways out – TSA-Table 7 (the Austrian case)

Employment in tourism industries compared to other industries in Austria 2011 ¹⁾

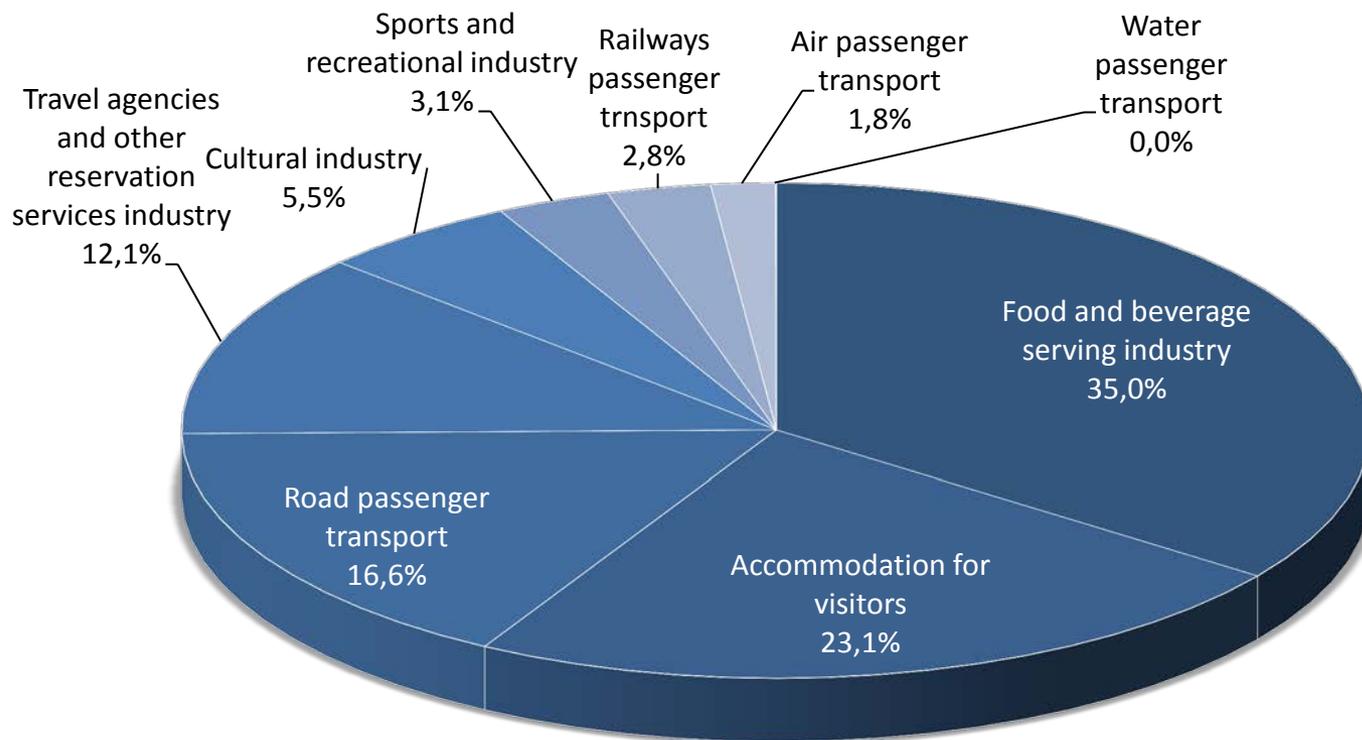
NACE Rev.2	Full time equivalents (FTE)					
	Employees		Self-employed		Total	
	in 1 000	Share in %	in 1 000	Share in %	in 1 000	Share in %
A AGRICULTURE, FORESTRY AND FISHING	23,5	13,0	156,8	87,0	180,3	100,0
B MINING AND QUARRYING	5,3	97,0	0,2	3,0	5,4	100,0
C MANUFACTURING	545,1	96,6	19,4	3,4	564,5	100,0
D ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	25,1	94,9	1,4	5,1	26,5	100,0
E WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	20,0	97,6	0,5	2,4	20,5	100,0
F CONSTRUCTION	254,9	90,7	26,2	9,3	281,1	100,0
G WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	463,1	88,5	60,0	11,5	523,0	100,0
H TRANSPORTATION AND STORAGE	183,2	94,0	11,7	6,0	194,9	100,0
I ACCOMMODATION AND FOOD SERVICE ACTIVITIES	176,9	81,4	40,4	18,6	217,3	100,0
J INFORMATION AND COMMUNICATION	72,8	83,3	14,6	16,7	87,5	100,0
K FINANCIAL AND INSURANCE ACTIVITIES	105,8	93,3	7,5	6,7	113,3	100,0
L REAL ESTATE ACTIVITIES	37,6	79,5	9,7	20,5	47,3	100,0
M PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	128,7	70,0	55,3	30,0	184,0	100,0
N ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	157,9	92,9	12,0	7,1	169,9	100,0
O PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	228,2	100,0	-	-	228,2	100,0
P EDUCATION	208,8	96,6	7,3	3,4	216,1	100,0
Q HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	294,4	91,6	27,0	8,4	321,3	100,0
R ARTS, ENTERTAINMENT AND RECREATION	38,6	77,7	11,1	22,3	49,7	100,0
S OTHER SERVICE ACTIVITIES	76,5	79,0	20,3	21,0	96,9	100,0
T ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; UNDIFFERENTIATED GOODS- AND SERVICES-PRODUCING ACTIVITIES OF HOUSEHOLDS FOR OWN USE	5,7	100,0	-	-	5,7	100,0
U ACTIVITIES OF EXTRATERRITORIAL ORGANISATIONS AND BODIES	-	-	-	-	-	-
A - U Total	3.052,0	86,4	481,2	13,6	3.533,3	100,0
TSA Tourism industries	216,3	85,0	38,1	15,0	254,4	100,0

S: STATISTICS AUSTRIA, National Accounts, Tourism Satellite Accounts; WIFO (Austrian Institute of Economic Research). Compiled February 2013. - 1) Preliminary results.





Tourism employment in Austria (FTE) 2011 by tourism industries



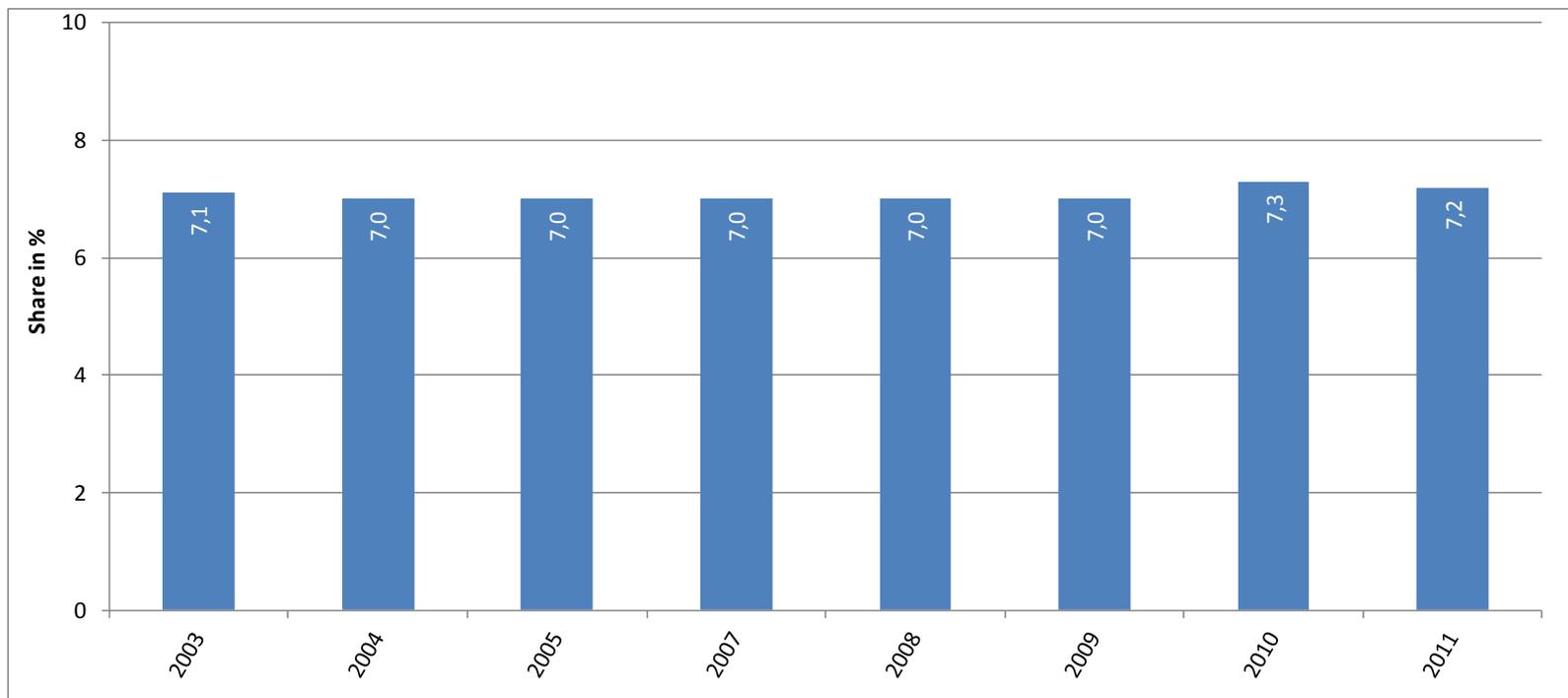
Total: 254 400 FTE

S: Statistics Austria/ Austrian Institute of Economic Research; Tourism Satellite Accounts 2011.

Ways out – TSA-Table 7 (the Austrian case)



Share of tourism employment related to overall employment in Austria 2003 – 2011 (dir.)

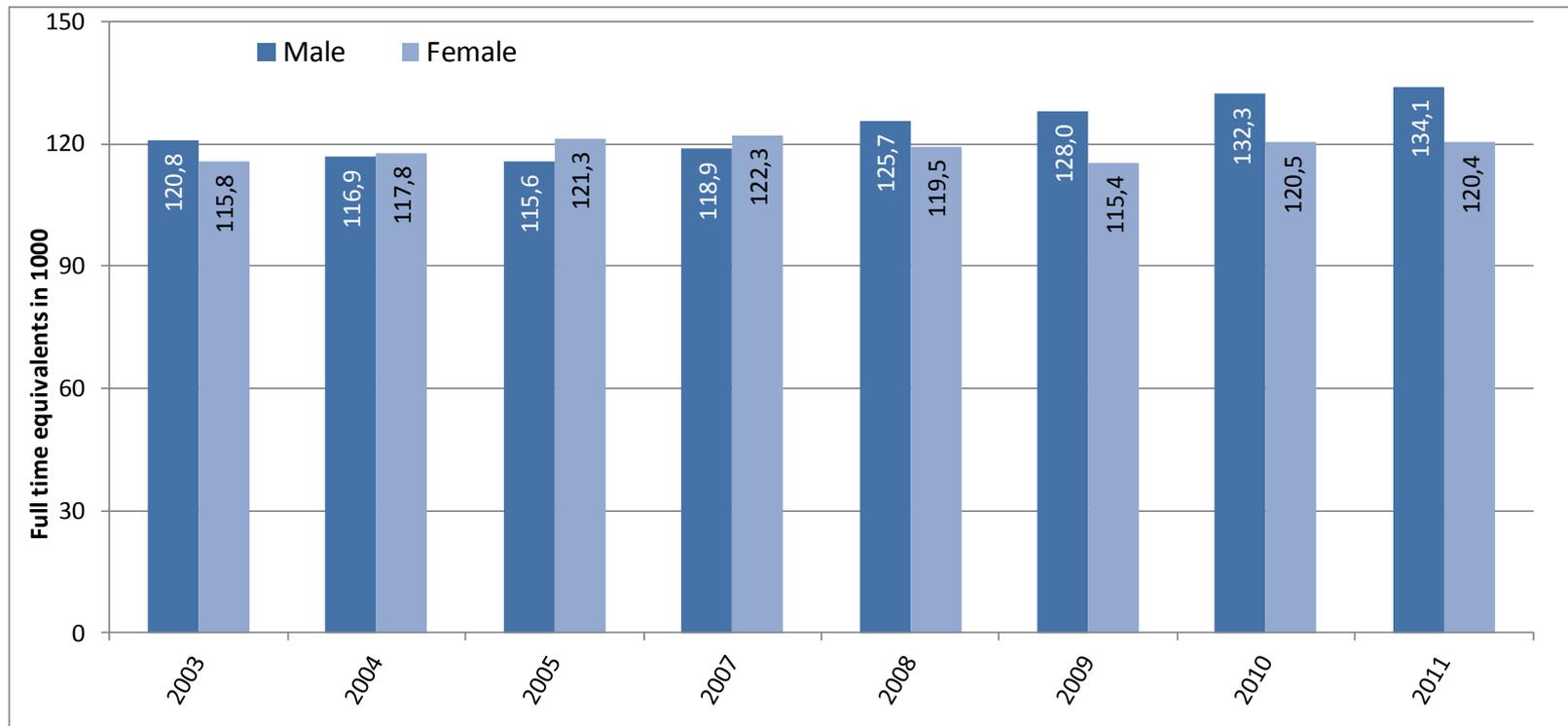


S: Statistics Austria/ Austrian Institute of Economic Research; Tourism Satellite Accounts 2003 - 2011.

Ways out – TSA-Table 7 (the Austrian case)



Employment in tourism industries in Austria 2003 - 2011 by gender

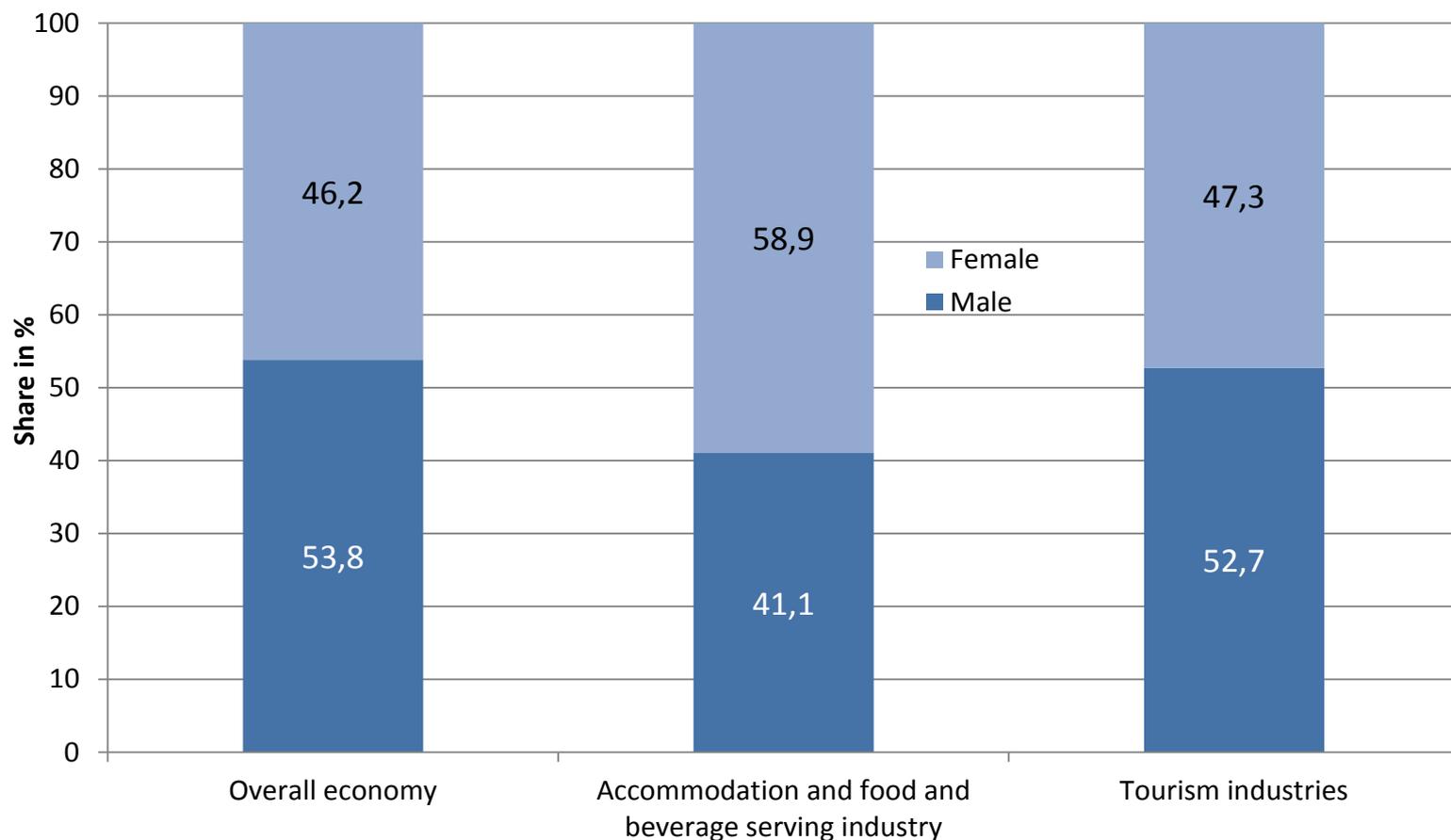


S: Statistics Austria/ Austrian Institute of Economic Research; Tourism Satellite Accounts 2003 - 2011.

Ways out – TSA-Table 7 (the Austrian case)



Employment by gender and sectors in Austria 2011



S: Statistics Austria/ Austrian Institute of Economic Research; Tourism Satellite Accounts 2003 - 2011. Based on FTE.

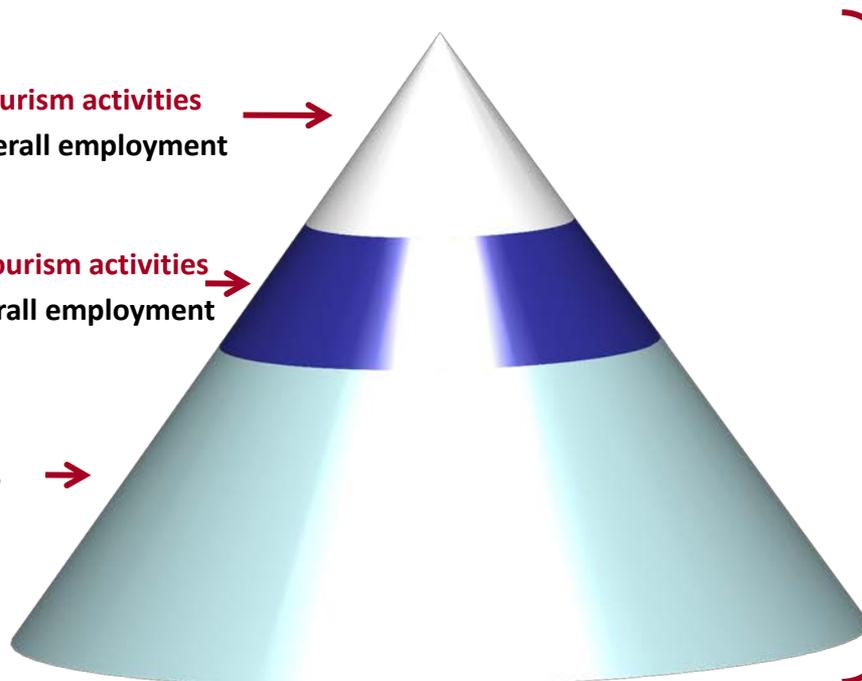
Effects of tourism and leisure activities on the overall employment in Austria 2011



Direct effects according to **tourism activities**
254 500 FTE, 7.2% share on overall employment

Indirect effects according to **tourism activities**
78 900 FTE, 2.2% share on overall employment

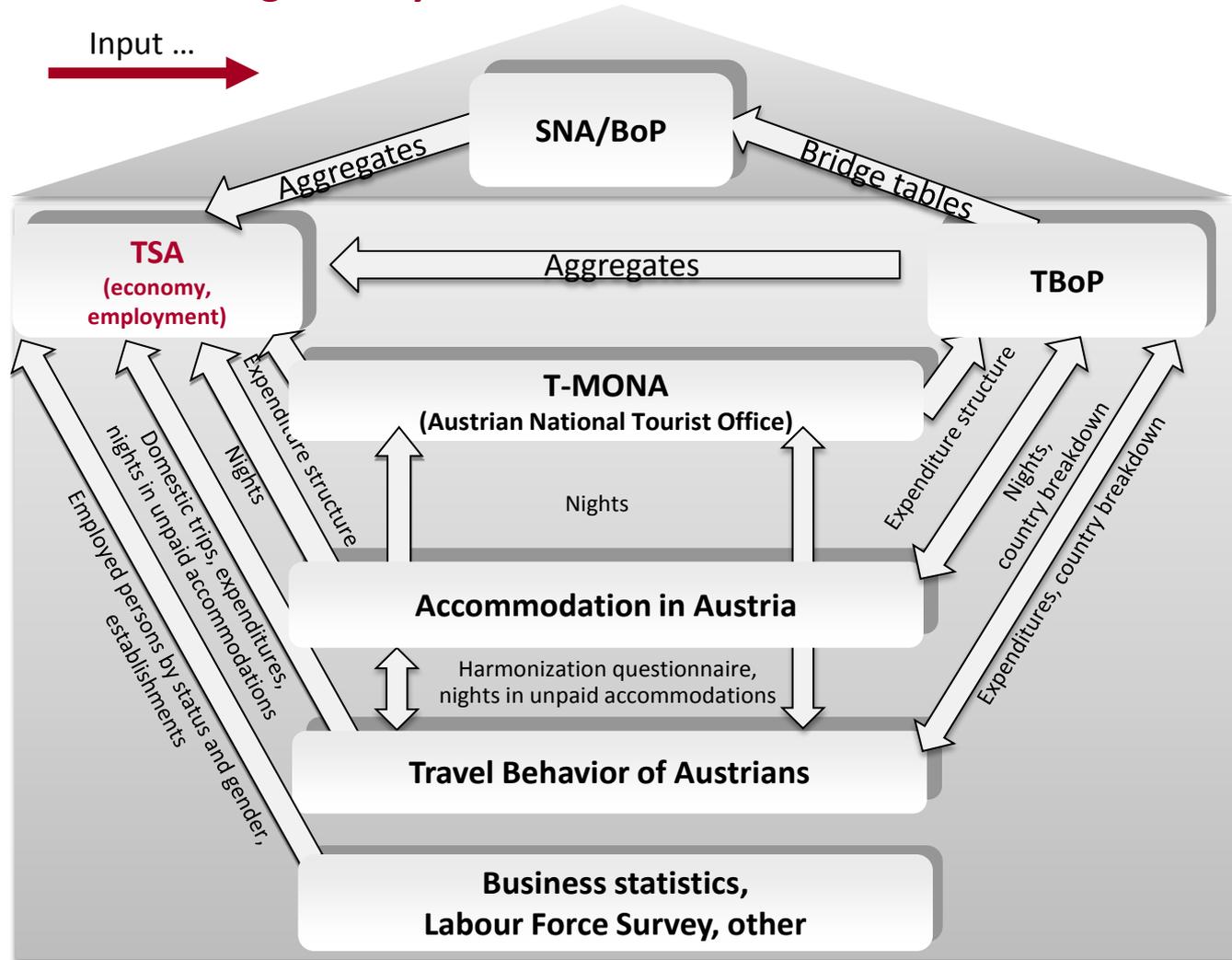
Direct and indirect effects
according to **leisure activities**
291 500 FTE, 8.3% share
on overall employment



Tourism & Leisure:
Total 624 900 FTE,
17.7% share on
overall employment
↓
About one fifth
of the overall Austrian FTE

Ways out – TSA-Table 7 (the Austrian case)

Integrated System of Tourism & Travel Statistics





Measuring employment in tourism shows multidimensional challenges ...

- 
- Data users must be aware of differences related to concepts
 - National Accounts should serve as the basis
 - Considering indirect employment effects might be useful
 - Unemployed persons are not considered
 - Careful investigation related the possible data sources is crucial

... but there are ways out!

- 
- TSA is an appropriate basis for measuring tourism employment
 - Measuring employment in tourism remains an estimate
 - Full- and half-time employment in tourism require FTE-figures
 - TSA-related estimates provide a comprehensive data base for further investigations and analysis in that respect
 - Employment data are improving and strengthening the reliability of the Tourism & Travel Statistics

...and related to tourism employment data



... nothing is perfect!



... too much should not be expected!

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"My family wants a genuine back-to-nature camping experience, but with Wi-Fi, air conditioning, and satellite TV."

... the way should not be lost!

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"I told you we wandered too far from the hotel.
This looks nothing like Waikiki Beach!"

Thank you for your attention!

*Please address queries to:
Peter Laimer*

*Contact information:
Guglgasse 13, 1110 Vienna
phone: +43 (1) 71128-7849
fax: +43 (1) 4934300
peter.laimer@statistik.gv.at*

Measurement of tourism employment

Challenges and methodology considering
TSA-related estimates in Austria

http://www.statistik.at/web_en/statistics/tourism/tourism_satellite_accounts/index.html



Peter Laimer, PhD

Education

- Geography (University Vienna)
- Advanced studies related Tourism- and Export-Industry (University Economics Vienna)

Profession

- Vice Director, Directorate Spatial Statistics, Statistics Austria
- Head of Division "Tourism, Motor vehicles, road safety"

International

- Consultancy (Tourism Statistics, TSA): EUROSTAT (Medstat I/II in Jordan and Lebanon); UNWTO/UNSD (Moldova); furthermore in Croatia, Cyprus, Hungary, Oman, Slovenia, Taiwan and Turkey
- Contributor: TSA Recommended Methodological Framework 2001/2008, International Recommendation on Tourism Statistics 2008, European Implementation Manual on TSA 2001
- Statistical Expert of the OECD Tourism Committee
- Member of the "International Association of Scientific Experts in Tourism" (AIEST)

Teaching

- University courses related Tourism Management in Linz (tourism statistics)
- Tourism Management/ University of Applied Sciences in Vienna (statistics)