PSO/RDF application guidelines and study on regional economic justification of PSO/RDF

Final results (detailed documentation) – Task B

Part-financed by the European Union

Baltic Bird

Baltic Sea Region Programme 2007–2013

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Task B: Final results

Investigation in economic effects and justification of PSO/RDF

Results for Savonlinna Airport

Results for Savonlinna Airport

Socio-economic parameters of the Airport region

Step 1: The Airport region of Savonlinna includes the 5 municipalites of the sub-regional unit Savonlinna

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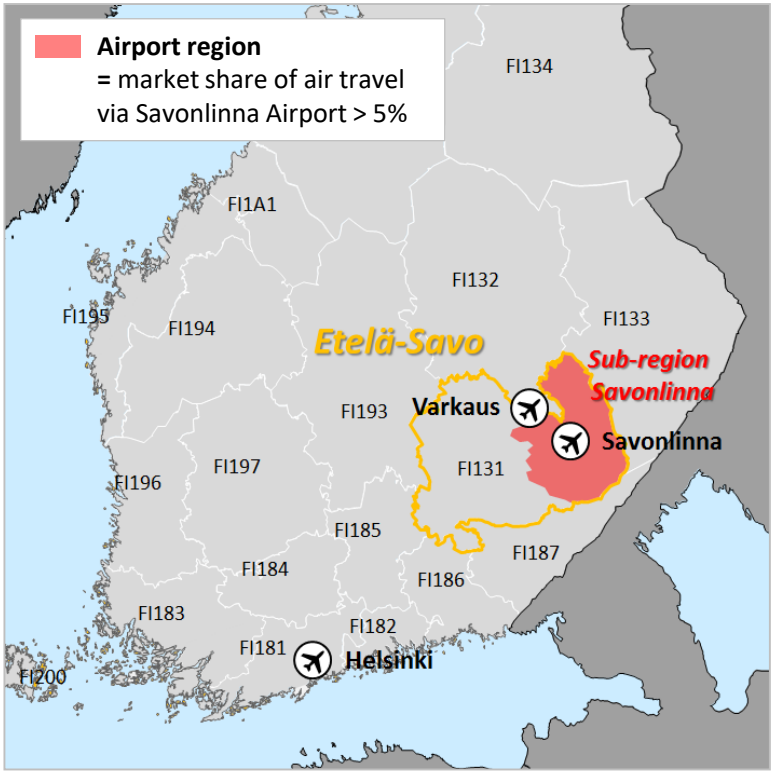
Airport region of Savonlinna (SVL)



FI131 Etelä-Savo (NUTS3 region)

1 **Mikkeli sub-regional unit** (6 municipalities)

2 **Pieksämäki sub-regional unit** (3 municipalities)

3 **Savonlinna sub-regional unit** (5 municipalities)

Source: UNICONSULT 2013

Criteria for selection of regions

- Market share of air travels via SVL Airport is higher than 5%; calculation of catchment area was performed by MKmetric (BALTIC BIRD Work package 3)
- Regional economic data are available for EU-NUTS 3 level (= 19 maakunta/regions in Finland); more detailed data were provided by partners (e.g. local business statistics for sub-regions and municipalites)

Step 1: Almost 50 000 inhabitants live in the Airport region, 37 000 of them in the Municipality of Savonlinna

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Basic figures of the Airport region

	Land area, km²	Population (2011)	Population per km² (2011)	Market share of SVL airport
Finland	**303 892**	**5 375 276**	**17.7**	**< 5%**
FI181 - Uusimaa (Helsinki)	**9 097**	**1 435 811**	**157.8**	**< 5%**
FI131 - Etelä-Savo	**13 980**	**154 668**	**11.1**	**16.6%**
Mikkeli sub-regional unit	5 952	73 506	12.3	n.a.
Pieksämäki sub-regional unit	3 308	31 944	9.7	n.a.
Savonlinna sub-regional unit	**4 719**	**49 072**	**10.4**	**n.a.**
Enonkoski (munic.)	306	1 566	5.1	n.a.
Heinävesi (munic.)	1 030	3 827	3.7	n.a.
Rantasalmi (munic.)	559	3 949	7.1	n.a.
Savonlinna (munic./region) *	2 239	36 854	16.5	n.a.
Sulkava (munic.)	585	2 876	4.9	n.a.

Source: Statistics Finland / EUROSTAT / MKmetric 2013

→ Airport region accounts for 34% of the area and for 32% of the population of Etelä-Savo

→ Municipality of Savonlinna is the demographic and economic ”core“ of the sub-regional unit

→ Approx. 16,6% of air travels in Etelä-Savo is done via SVL Airport (measured in attracted population)

* Savonlinna airport is located in this municipality which includes Savonlinna City and the formerly independent municipalities of Kerimäki and Punkaharju

Step 2: Savonlinna Business Services and UNICONSULT collected all relevant data from several sources

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Data sources (overview)

- data sheet (February – April 2013) ✓
- interviews (May 2013) ✓

Category	Desk research (secundary data)	On-site research (primary data)
A. Local airport data		Savonlinnan seudun kuntayhtymä YRITYS-SUOMI Savonlinnan seutu
B. Data / information about the region	Statistics Finland eurostat	Savonlinnan seudun kuntayhtymä YRITYS-SUOMI Savonlinnan seutu
C. Data about tax income and expenditures on social transfers	Statistics Finland eurostat	
D. Regional and national economic data by branches	Statistics Finland eurostat	

→ Missing data (especially local data):
Interpolation and estimation from Regional and National Accounts data (category D)

Step 3: In 2011, 19 500 employees generated a gross value added of approx. EUR 1.1 billion in the Airport region *

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Profile of the Airport region

2011	Population	Gross value added (million EUR) *	Employees	Gross value added per employee (EUR) *	Number of business units **	Number of tourist accomodation
Finland	**5 375 276**	**163 424**	**2 509 500**	**65 122**	**329 628**	**1 309**
FI181 - Uusimaa (Helsinki)	**1 435 811**	**59 819**	**775 041**	**77 181**	**114 105**	**153**
FI131 - Etelä-Savo (Airport region)	**154 668**	**3 505**	**65 471**	**53 531**	**9 159**	**82**
Mikkeli sub-regional unit	73 506	1 753 *	32 620	53 749 *	4 685	n.a.
Pieksämäki sub-regional unit	31 944	698 *	12 814	54 480 *	1 754	n.a.
Savonlinna sub-regional unit	**49 072**	**1 054 ***	**19 513**	**54 002 ***	**2 720**	**n.a.**
Enonkoski (munic.)	1 566	28 *	533	51 747 *	77	n.a.
Heinävesi (munic.)	3 827	86 *	1 450	59 384 *	215	n.a.
Rantasalmi (munic.)	3 949	90 *	1 355	66 127 *	226	n.a.
Savonlinna (munic./region)	36 854	784 *	15 167	51 662 *	2 025	n.a.
Sulkava (munic.)	2 876	67 *	1 008	66 369 *	177	n.a.

Source: Statistics Finland 2013 / Local business statistics of Savonlinna

- **Economy & business activities:** Approx. 30% of gross value added of Etelä-Savo is generated in the Airport region by 2 700 local business units
- **Tourism:** Etelä-Savo accounts for 6.9% of all tourist accomodations in Finland and tourist accomodation density (per million inhabitants) is higher than the finish average

* Estimate of GVA for sub-regional units based on number of employees; estimate for municipalities based on available number of business locations

** Data for Finland, Helsinki and Etelä-Savo from 2010 and w/o agriculture sector; data for sub-regional units estimated with local business statistics

While the number of inhabitants and employees remains almost constant in the region, economy grew by 1.4% p.a.

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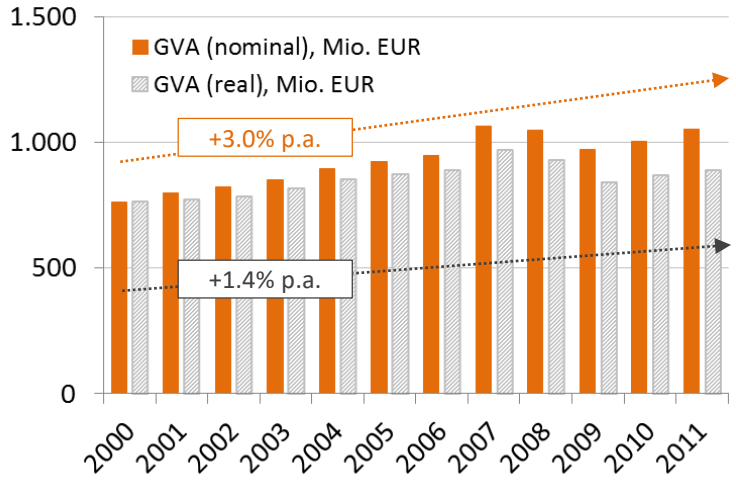
Socio-economic development: Basic parameters of the aiport region, 2000-2011

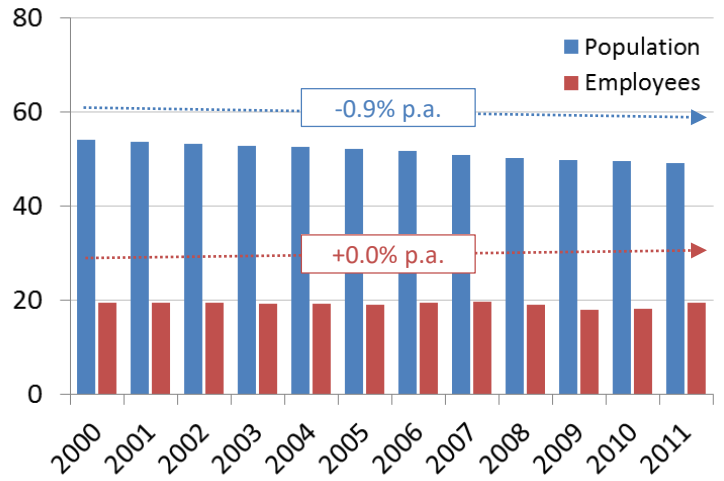
Economy
Gross value added



- With exception of 2009, the economy in Etelä-Savo grew steadily, both at current prices (nominal) and at basic prices (real)

Note: Regional Accounts data do not include real values of GVA, thus regional GVA was calculated with national "deflator" (= ratio between real/nominal values)

Socio-demographics
Population and employees (1 000 persons)



- Despite a shrinking number of inhabitants the number of employees increased slighty by +0.5% p.a.
- Thus, employment rate grew up to 42.3% and is few lower than in the whole country where 46.7% of the population is employed

Source: Statistics Finland / EUROSTAT 2013

Due to relatively constant employment, labour productivity grew to the same extent as gross value added

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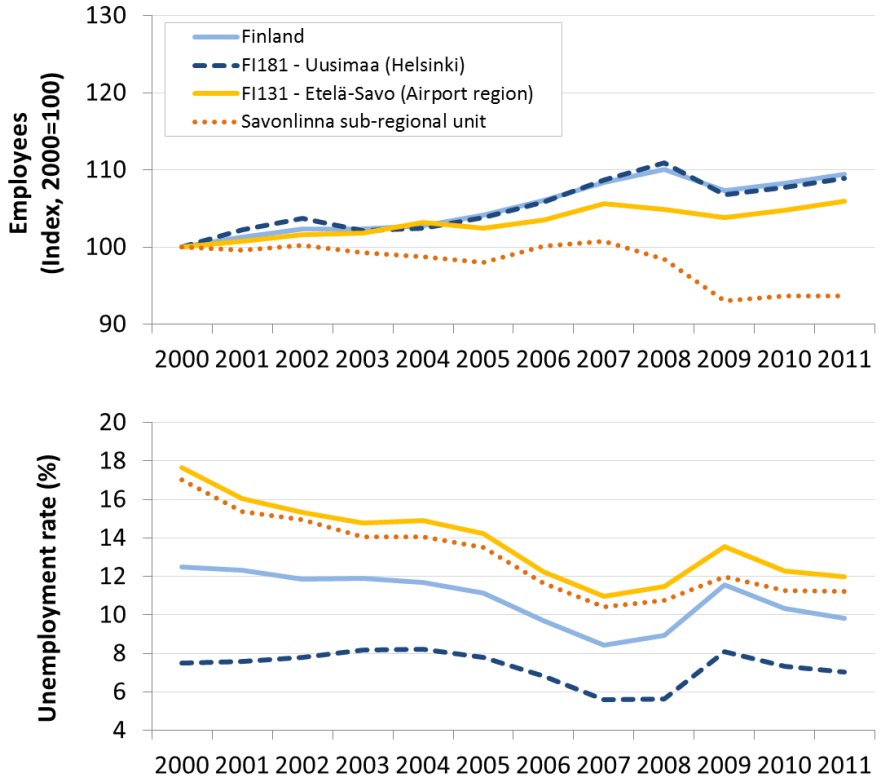
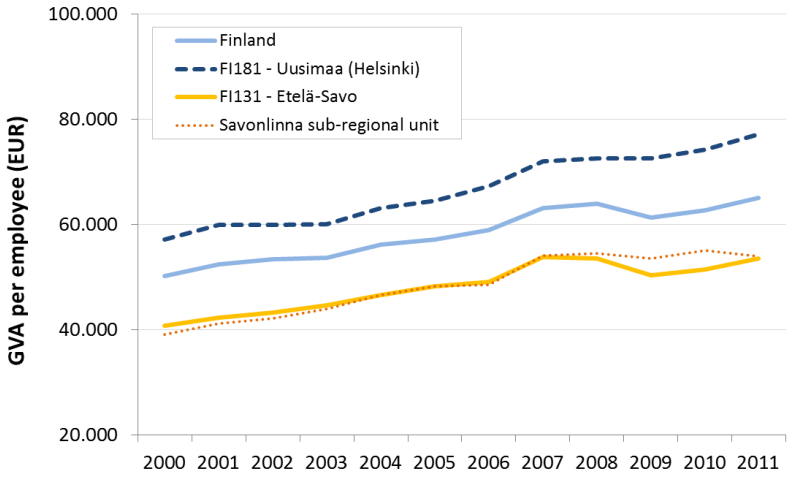
Socio-economic development: Employment and labour productivities

Employment



- Number of employees is slightly increasing in Finland and the Aiport region
- Unemployment rate has decreasd in the Airport region from almost 18% to 12%

Labour productivity



- With the exception of 2008/2009 labour productivity has grown every year in all regions
- Labour productivity in the Airport region has risen up to EUR 53 000 per employee which is lower than the national average of EUR 65 000 per employee

Source: Statistics Finland / EUROSTAT 2013

With a high proportion of agriculture and forestry, the Airport region shows a balanced mix of sector activities

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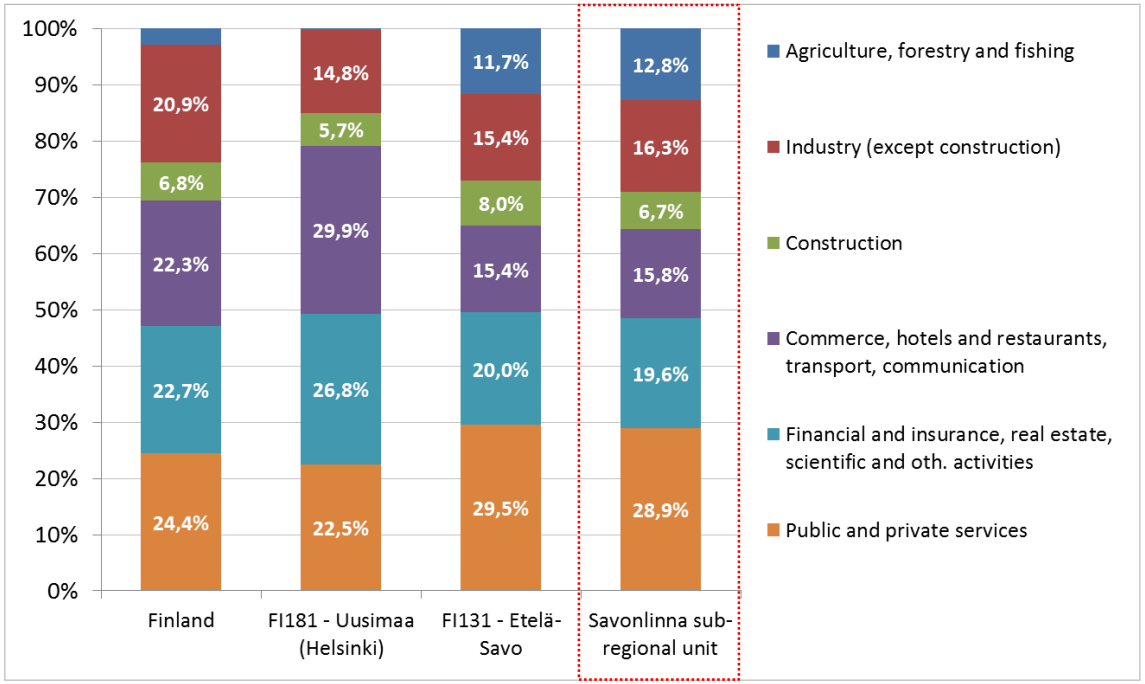
Socio-economic structure: Gross value added by sector (2011) *



Source: Statistics Finland / EUROSTAT 2013

GVA structure (% of Mio. EUR):

- Almost 13% of gross value added in the Airport Region is realized in the agriculture and forestry sector – which is a much higher proportion than in Finland or the capital region
- Financial and scientific services, industry and commerce, transport and tourism sectors contribute to gross value added by similar shares between 16% and 20%

→ Main economic "pillars" in the Savonlinna region

- Forestry and lumber industry (e.g. Metsä Group, UPM-Kymmene Oy)
- Associated metal and machinery industry (e.g. Andritz Oy, Savonlinna Works Oy)
- Services (e.g. I&C technology companies like Blue Lake Communication Oy)
- Tourism (e.g. Savonlinna Opera Festival, Charms of Saimaa/boat trips)

* Main industry branches according to NACE classification Rev. 2 (EU) / TOL 2008 (Finland)

Regional labour productivity is high in agriculture and forestry, but low in commerce, transport and tourism sector

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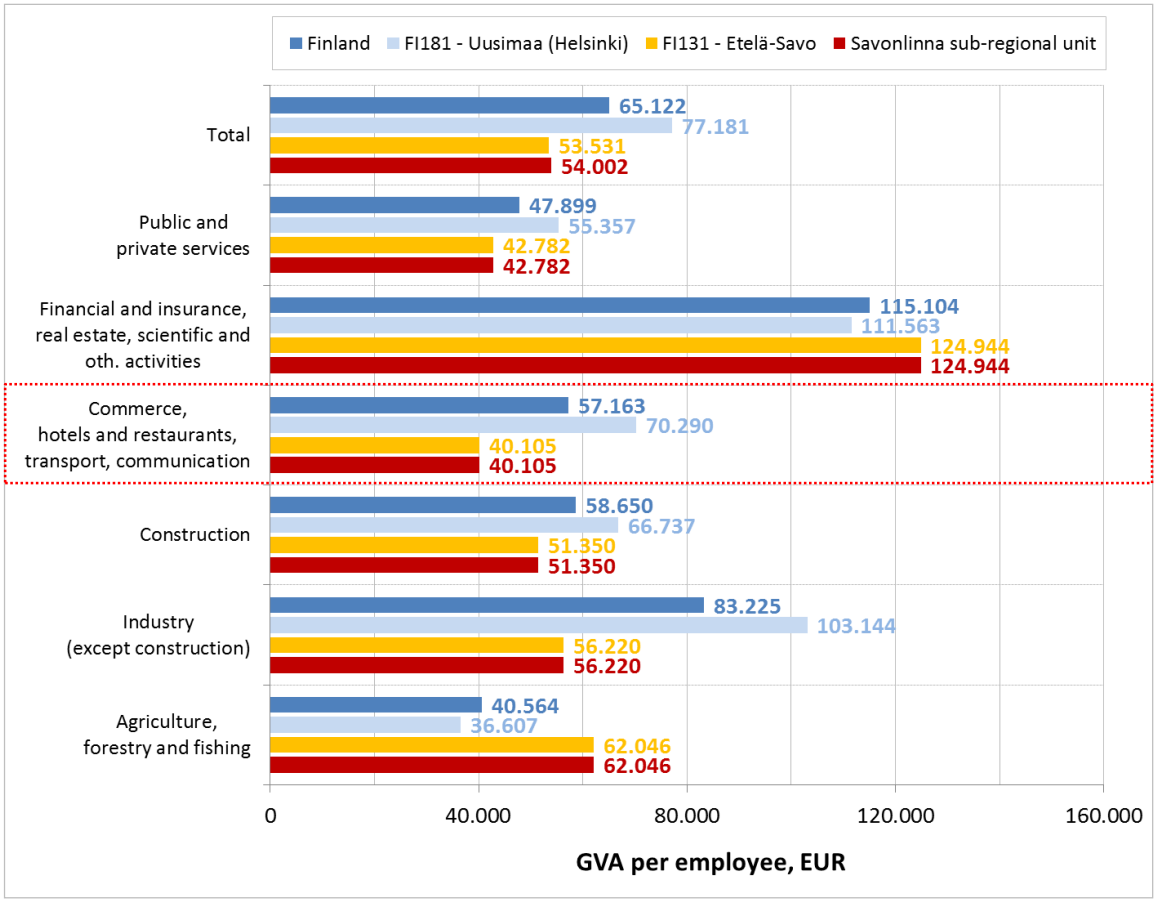
Socio-economic structure: Labour productivity by sector (2011)



Source: Statistics Finland / EUROSTAT 2013

Labour productivity (GVA per employee, EUR):

- The Airport region shows high labour productivity in agriculture and forestry sector – in this sector, labour productivity is 1.53 times higher than the national average
- In the commerce, transport and tourism sector labour productivity is lower than in Finland (factor 0.70) and even lower than in the capital region (factor 0.57) – this is relevant for the calculation of economic effects arising from the production of air transport services

→ All "regional factors" of labour productivity per **sector are applied for calibration of the Input-Output model** in working step 4

Domestic tourism is still dominant but decreasing in Savonlinna Region – number of foreign tourists increased steadily

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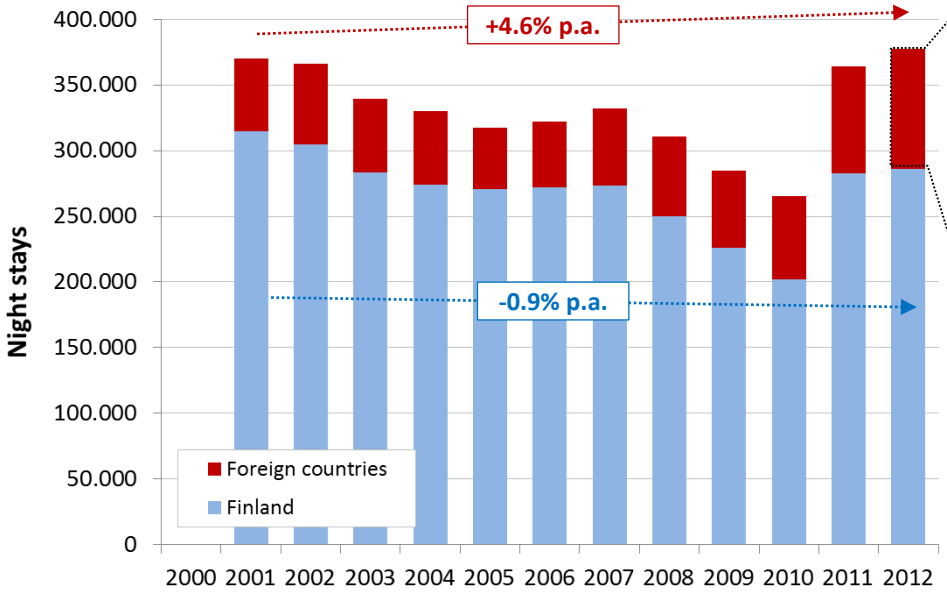
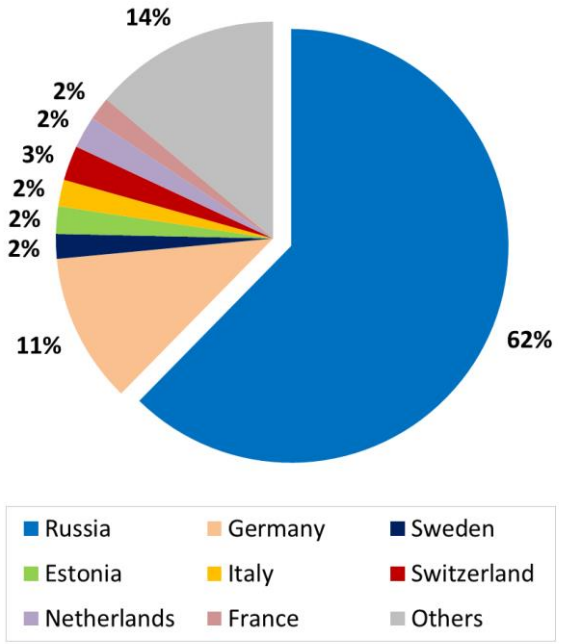
Socio-economic structure: Tourism

Tourist night stays in the Airport Region at registered accomodation facilities (2000-2011)



Night stays by tourists from foreign countries (2012):

90 855



- Growth of tourist night stays in Savonlinna Region (+0.2% p.a.) was mainly driven by foreign tourists (+4.6% p.a.) – thus, share of inbound tourists has risen up from 15% in 2000 to 24% in 2012
- In 2012, approx. 200 000 tourists arrived and spent 393 000 nights – most of inbound tourists came from Russia (62%), Germany (11%) and Sweden (2%)

Source: Savonlinna Business Services 2013

Arriving tourists stay for 2.8 nights on average in Savonlinna Region, inbound tourists from abroad stay for 3.7 nights

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Socio-economic structure: Tourism

Total nights spent and average nights per tourist (2011)

		Total (domestic + inbound)				Foreign tourist (inbound)			
		Registered accommodation facilities		Total arrivals (survey/estimate)		Registered accommodation facilities		Total arrivals (survey/estimate)	
		nights spent (1.000)	Ø nights per tourist	nights spent (1.000)	Ø nights per tourist	nights spent (1.000)	Ø nights per tourist	nights spent (1.000)	Ø nights per tourist
Finland	**Total**	**19 988**	**1.9**	**125 690**	**2.9**	**5 507**	**2.1**	**34 632**	**4.2**
	Business	n.a.	n.a.	13 642	2.3	v	-	5 323	2.7
	Non-business	n.a.	n.a.	112 047	3.0	-	-	29 309	5.1
Savonlinna Region	**Total**	**364**	**1.8**	**1 204**	**2.8**	**81**	**2.3**	**293**	**3.7**
	Business	96	1.4	134	2.0	21	1.8	21	2.7
	Non-business	268	2.0	1 070	3.0	61	2.5	272	5.1

Source: Statistics Finland 2013 / Savonlinna Business Services 2013 / University of Eastern Finland 2010 (survey) / UNICONSULT 2013 (estimate)

- In 2011, 364 000 tourist nights were registered by different accomodation facilities in Savonlinna Region (hotels, camping sites, registered cottages) – average length of stay was 1.8 nights per registered tourist
- Based on the survey of University of Eastern Finland in 2010 it can be assumed that in total more than 1.2 million nights were spent in Savonlinna Region including stays at relatives or friends, stays in own cottages, stays on boats etc. – all tourists arriving in the region stayed approx. 2.8 nights on average
- Inbound tourist from abroad stayed longer time than total average, both at registered accomodations (2.3 nights per tourist) and in total (3.7 nights per tourist)

Tourists staying at registered accomodations spend EUR 109 per day – most of it for restaurants and food

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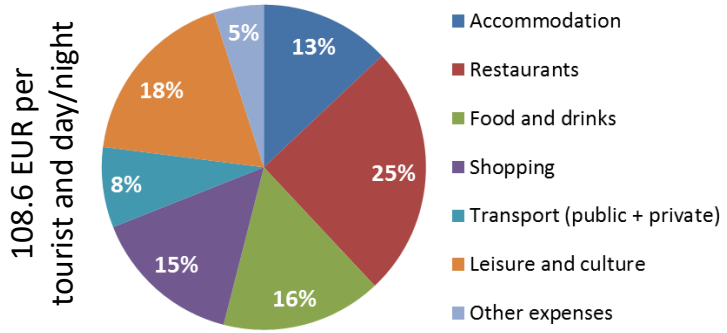
Socio-economic structure: Tourism

Tourists' expenditures by category in Savonlinna Region (2010)



Source: Own Calculation based on survey data of University of Eastern Finland 2010 (only tourists in registered accomodation facilities)

- In 2010, total income from tourists' expenditures amounted to EUR 97 million in Savonlinna Region
- Thereof, EUR 36 million were spent by tourists who stayed at registered accomodation facilities where they spent approx. 334 000 nights

Attribution of expenditure type to addressed branches of industry (NACE Rev. 2)

Category	Share	NACE Rev. 2	Branch
Accommodation	100%	I	Accommodation and food service activities
Restaurants	100%	I	Accommodation and food service activities
Food and drinks	100%	G47	Retail trade, except of motor vehicles and motorcycles
Shopping	100%	G47	Retail trade, except of motor vehicles and motorcycles
Transport	100%	H49	Land transport and transport via pipelines
Leisure and culture	90%	R90-R92	Creative, arts and entertainment activities; libraries, archives, museums etc.
	10%	R93	Sports activities and amusement and recreation activities
Other expenses	100%	O	Public administration and defence; compulsory social security

Source: UNICONSULT 2013

→ **Average expenditure of tourists staying at registered accomodations is EUR 36 mln / 334 000 nights = EUR 108.6**

→ **Tourists' expenditures generate *output* and *value added* in the addressed branches of tourism industry**

→ **Most addressed branches are accommodation and food service activities, retail trade and creative, arts and entertainment activities (incl. museums)**

Results for Savonlinna Airport

SVL Airport as economic and location factor

In 2012, approx. 10 000 passengers were handled at SVL Airport

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Savonlinna Airport: Basic figures (2012)

IATA code	SVL
Runway	2300 × 45 m, asphalt
Distance to Savonlinna City	13 km
Passenger volume	13 206 (incl. charter flights)
Destinations of scheduled flights	Helsinki
Employees	17
Airport company (Finavia)	13
Other companies located at the airport	4
Output (= revenue), in EUR	1.70 mln *
Airport company / Finavia	1.35 mln
Other companies located at the airport	0.35 mln

Source: Savonlinna Airport (Finavia) / UNICONSULT 2013

* Estimate by Savonlinna Airport/Finavia; share of airport company and other companies has been estimated through multiplication of employees by regional labour productivities 2011 (= average output per employee for each corresponding secotor of indstry to which the employees are assigned, e.g. “air transport” or “land transport”)

Owing to currently low PAX volume and low capacity utilization, employment intensity of SVL Airport is very high

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Savonlinna Airport: Employment intensitites

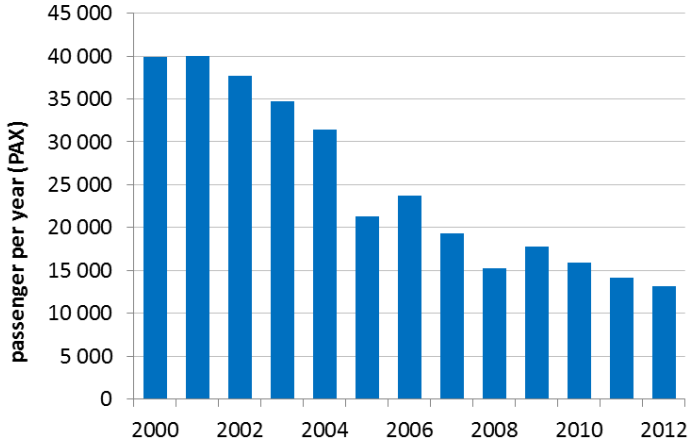
Employment intensity

$$= \frac{17\ employees}{0.013206\ million\ passengers\ per\ annum\ (mppa)}$$

$$= 1\ 287\ employees/mppa$$

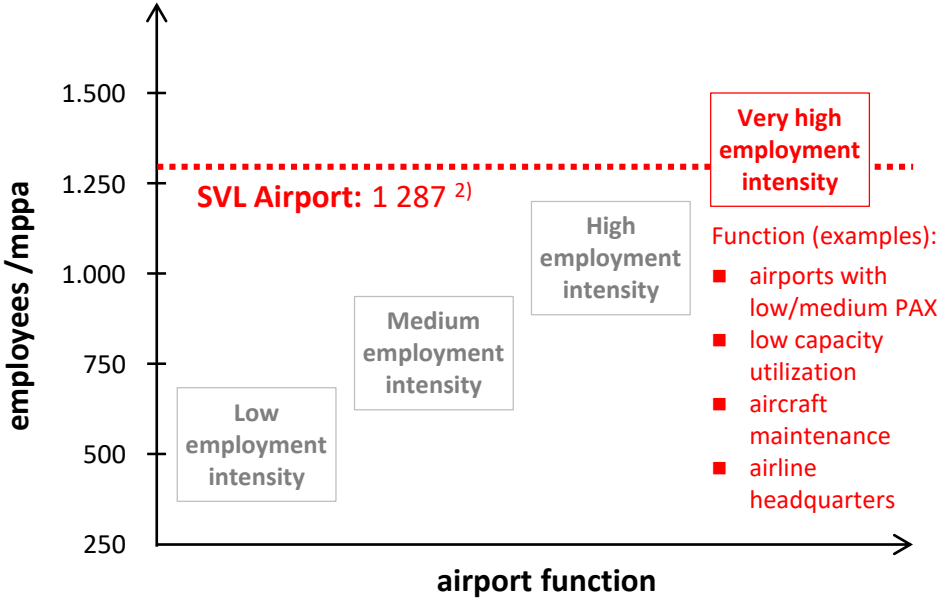
Employees

Passenger volume (2012): 13 206



Source: Savonlinna Airport (Finavia) 2013

Typology of on-site employment intensity at european airports [1)]



1) Simplified classification of possible airport functions according to their on-site employment intensitites – Source: UNICONSULT 2013 based on ACI/York Aviation 1998 and 2004.

2) Note: Employment intensity can vary a lot at very small-sized airports. Savonlinna Airport (Finavia) assumes that the 17 employees could theoretically handle up to 100 000 PAX per year (Example: 4 flights per day/Mon-Fri with one ATR72/42, avg. 50 PAX per flight). Consequently, employment intensity would drop below 200 employees/mppa.

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Economic effects of air transport: Direct, indirect, induced and tax effects

AIR TRANSPORT

STEP 4: Airport as “economic factor”

Airport companies
Produce air transport services at the airport

(employment, output, value added, income)

Supplier companies
Produce and provide interme-diate inputs and capital goods

(employment, output, value added, income)

I. Direct effects

II. Indirect effects

Expenditures of direct and indirect employed people

III. Induced effects

IV. Taxes / Public revenue

STEP 5: Airport as “location factor”

I. Local business
“supply-side” channel

II. Tourism and trade
“demand-side” channel

Increase of productivity

Industrial location and investment effects

Innovation impacts

Employment effects

Impact on structural change

For the provision of all transport and auxiliary services 17 persons are employed at Savonlinna Airport

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Savonlinna Airport: Employees and financial data *(direct effects)*

→ Employees of **all companies located at the airport** which are relevant for air transport services or have access to the airfield

Company	Employees
Administration (Finavia)	2
Operations (Finavia)	9
Maintenance/Fireman etc. (Finavia)	
ATC (Finavia)	2
Ground Handling (Airpro)	3
Restaurants (Bar Avion)	1
Other	0
Total	**17**

Source: Savonlinna Airport/Finavia 2013

→ Attribution to **branches of industry** according to the system of National Accounting (ESA 95 / NACE Rev. 2)

NACE Rev. 2	Sectors and branch of industry	Em-ployees	Revenue (EUR) *
Commerce, hotels and restaurants, transport, communication		**17**	**1 700 000**
H52	Warehousing and support activities for transportation (incl. air transport)	16	1 663 928
I	Accommodation and food service activities	1	36 072
Total		**17**	**1 700 000**

→ Input for I/O model (direct effects)

* Missing financial data (revenue, investments, salaries and wages etc.) of airport companies were estimated through *national and regional average productivities* and *a qualified estimation by Savonlinna Airport (Finavia).*

In 2012, the total output of the airport companies led to a regional gross value added of approx. EUR 540 000

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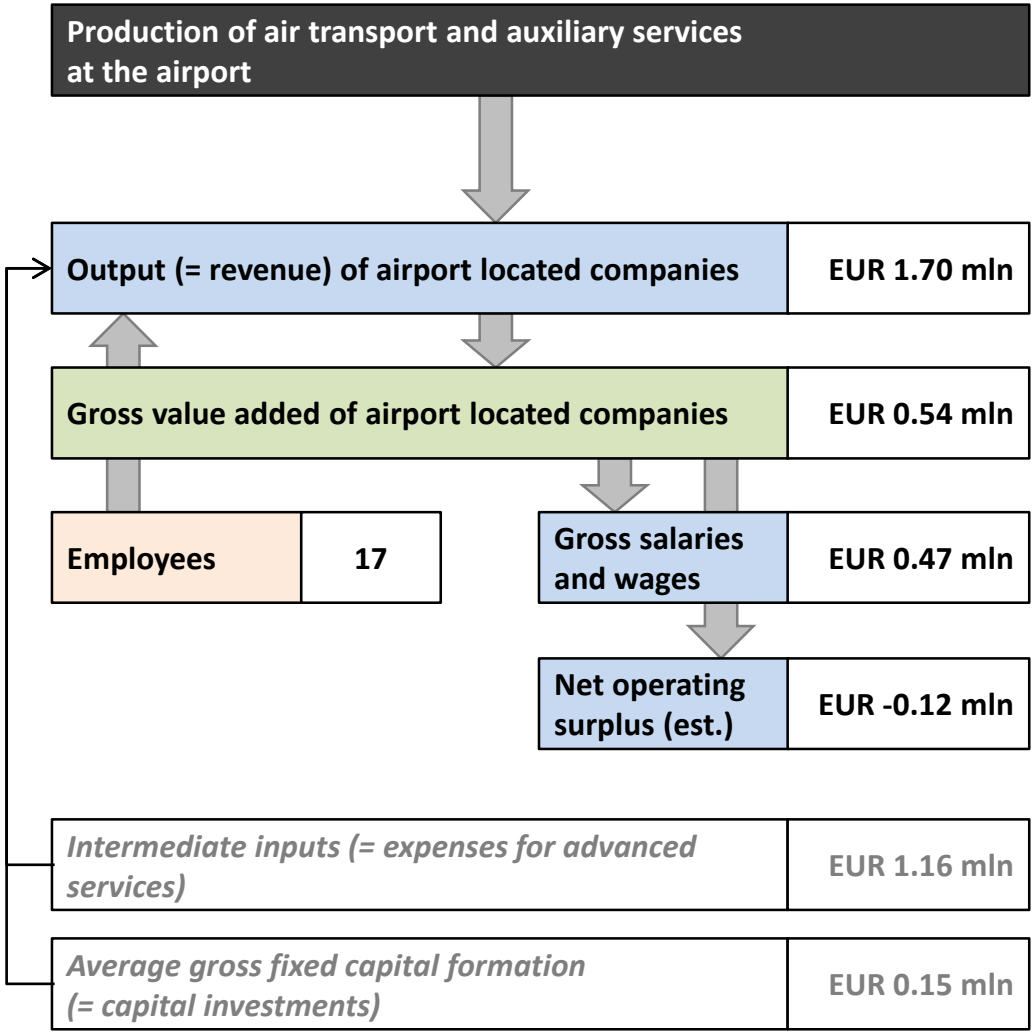
Economic effects of the airport (status quo):

I. Direct effects on employment and income



- In 2012, all companies located at the airport **employed 17 people** and contributed to a **regional gross value added in the amount of EUR 0.54 million.**
- The airport located companies **expended EUR 0.47 million for wages and salaries**, which equals EUR 27 820 per employee
- The companies needed **intermediate inputs of EUR 1.16 million** and **average investments in machinery, buildings etc. of EUR 0.15 million**

→ Both **intermediate inputs** and **investments** are produced by supplier companies outside the airport which in turn leads to **further value-added processes in the region and the whole country**

All suppliers and suppliers‘ supplier of the airport companies generated a national gross value added of EUR 890 000

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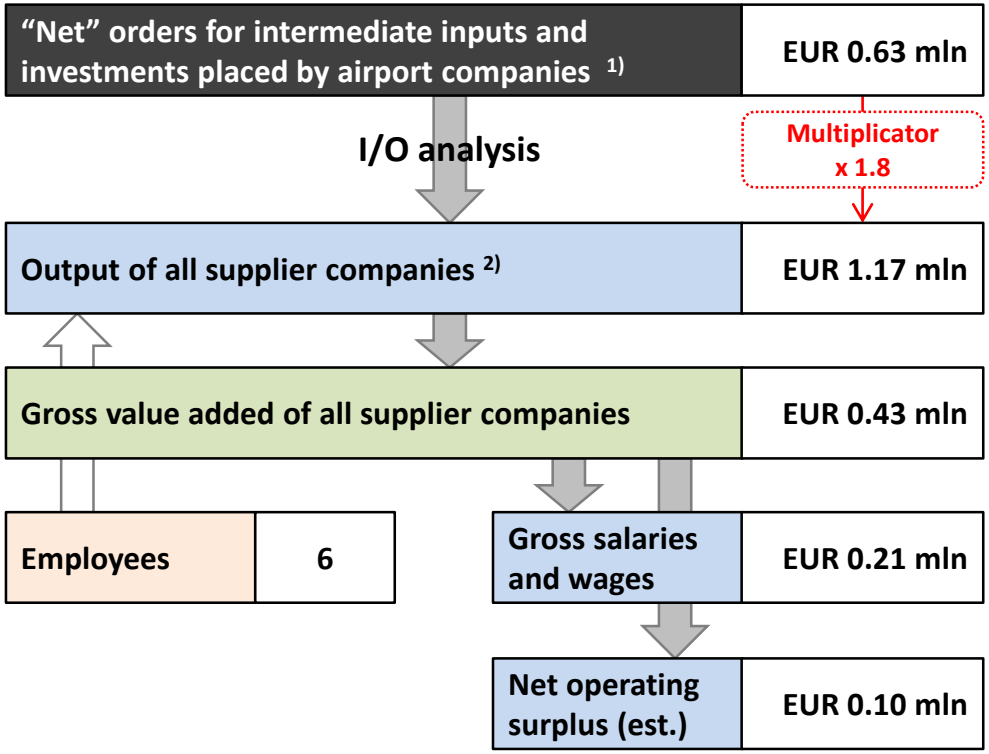
Economic effects of the airport (status quo):

II. Indirect effects on employment and income



- Orders from companies located at the airport led to a total output of EUR 2.41 million realized by all suppliers and suppliers‘ suppliers
- This led to a **national gross value added (GVA) of EUR 0.43 million** of which approx. 38% remained in the airport region 3)
- **6 employees** were needed as a factor of production; **salaries and wages** accounted for 49% of gross value added or **EUR 0.21 million**

1) The total volume of orders equals the sum of intermediate consumption and gross fixed capital consumption needed by all airport located companies less the output value of administration and operation activities (Finavia). The reason for this is that the main part of the output generated by the operating company is at the same time the intermediate input of other airport located companies. These companies purchase services provided by the operating company (e.g. rents for rooms, landing fees). If these services were not subtracted, this would lead to double counting of the "true" output values.

2) The domestic I/O table is used, which means that the effects refer only to the economy of Finland and do not include imported goods.

3) The regional share of economic effects is estimated for the main indutry branches (6 sectors) and applied in the I/O analysis.

Through expenditure of direct and indirect employees' salaries further value added of EUR 320 000 was generated

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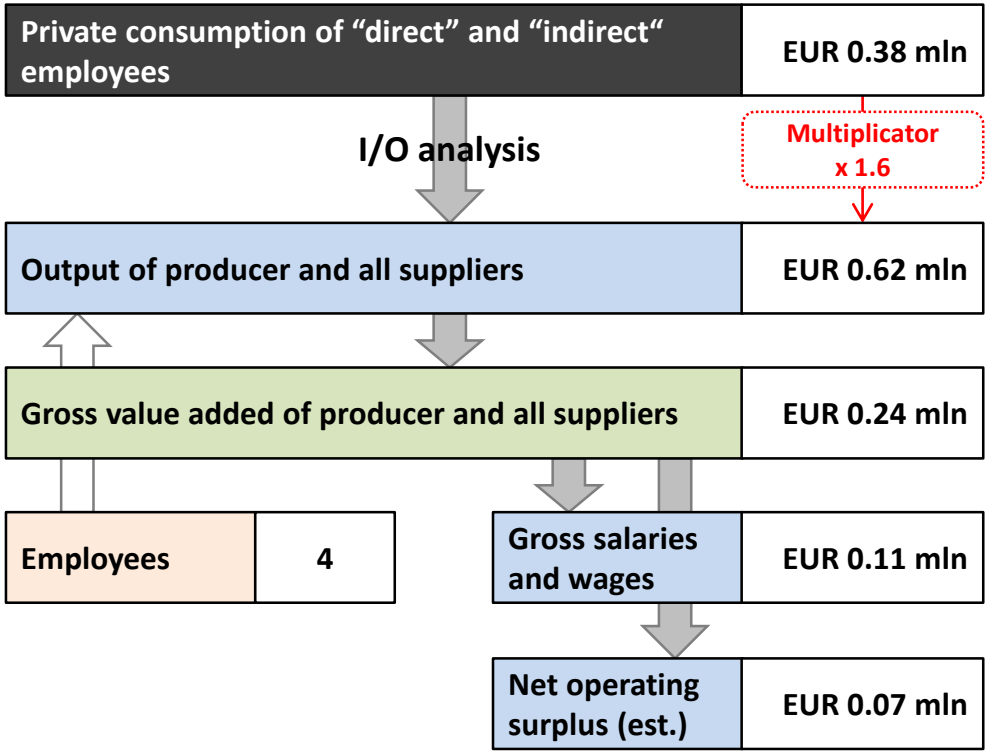
Economic effects of the airport (status quo):

III. Induced effects on employment and income



- A part of the gross salaries and wages earned by the employees at the airport located companies and their suppliers are spent for private consumption (e.g. food, rents, mobility) [1)]
- For the supply of these goods and services all producers, suppliers and suppliers' supplier generate an output of EUR 0.62 million – **EUR 0.24 million of it remained as national gross value added** [2)]
- For this, **4 employees** are needed as production factor; **salaries and wages come up to EUR 0.11 million**

1) The amount of private consumption equals the sum of the direct and indirect gross salaries and wages multiplied with a consumption rate of 56%. In 2011, the consumption rate in Finland (= consumption of all private households divided by GDP) was 55.4%. Assuming that the consumption rate of employed people is slightly higher than of self-employed people, the consumption rate was rounded up to 56%.

2) Approximately 40% of gross value added remained in the airport region.

All economic activities together generated a total tax revenue of approx. EUR 660 000

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Economic effects of the airport (status quo):

IV. Tax revenues and saved expenditures on unemployment benefits

Tax type	Tax base (direct + indirect + induced effects)		% of tax base	Tax revenue	Total tax revenue 2011 (Finland)
- Personal income tax	Gross wages and salaries	EUR 0.79 mln	30,9%	EUR 0.25 mln	*EUR 24 181 mln*
- Value added tax (VAT)	Gross value added	EUR 1.12 mln	10,2%	EUR 0.12 mln	*EUR 16 654 mln*
- Corporate income tax	Net operating surplus	EUR 0.05 mln	13,1%	EUR 0.01 mln	*EUR 5 153 mln*
- Other taxes	*(calculated from residual share of total tax revenue)*			EUR 0.10 mln	*EUR 12 080 mln*
Total				**EUR 0.47 mln**	***EUR 58 068 mln***

Source: Statistics Finland / EUROSTAT 2013

Expenditure type	Employed people (direct + indirect + induced effects)	Expenditures per unemployed person per year	Saved expenditures (in case of unemployment)	Unemployed people 2010 (Finland)	Total expenditures for unemployment benefits 2010 (Finland)
Social protection benefits for unemployment	**27**	**EUR 19 517**	**EUR 0.53 mln**	***224 000***	***EUR 4 372 mln***

Source: ESSPROS / EUROSTAT 2013

- Tax revenue for Finish Treasury arising from direct, indirect and induced income (salaries and wages, gross value added, net operating surplus) is approx. **EUR 470 000**
- If all 35 persons who are needed as production factor for the generated output would be unemployed, public expenditures on social protection benefits would be approx. **EUR 530 000**

All effects added up to a national gross value added of EUR 1.21 million and a public revenue of EUR 1.00 million

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Economic effects of the airport (status quo):

Summary

Effect / Dimension	Direct	Indirect	Induced	Total (Finland)	*therof in the Airport Region*
Employees	17	6	4	**27**	**77.0%**
Gross wages and salaries, EUR mln	0.47	0.21	0.11	**0.79**	**75.3%**
Output (= revenue), EUR mln	1.70	1.17	0.62	**3.49**	**67.4%**
Gross value added, EUR mln	0.54	0.43	0.24	**1.21**	**65.4%**
Tax revenue (total), EUR mln	-	-	-	**0.47**	**-**
Saved unemployment benefits, EUR mln	-	-	-	**0.53**	**-**

- In 2012, across all value added stages **27 persons** were employed due to the direct and indirect production of the air transport services and due to the induced production of goods and services for private consumption; approx. 77% of the persons were employed in the Airport region
- The production of air transport and all indirect services generated a total national gross value added of almost EUR 1 million. Adding the induced value added, the total benefits added up to **EUR 1.21 million**, whereas approx. 65% remained in the Airport region.
- Moreover, tax revenues of **EUR 470 000** were generated, with the main part arising from value added taxes (50%), personal income taxes (27%) and corporate income taxes (3%)

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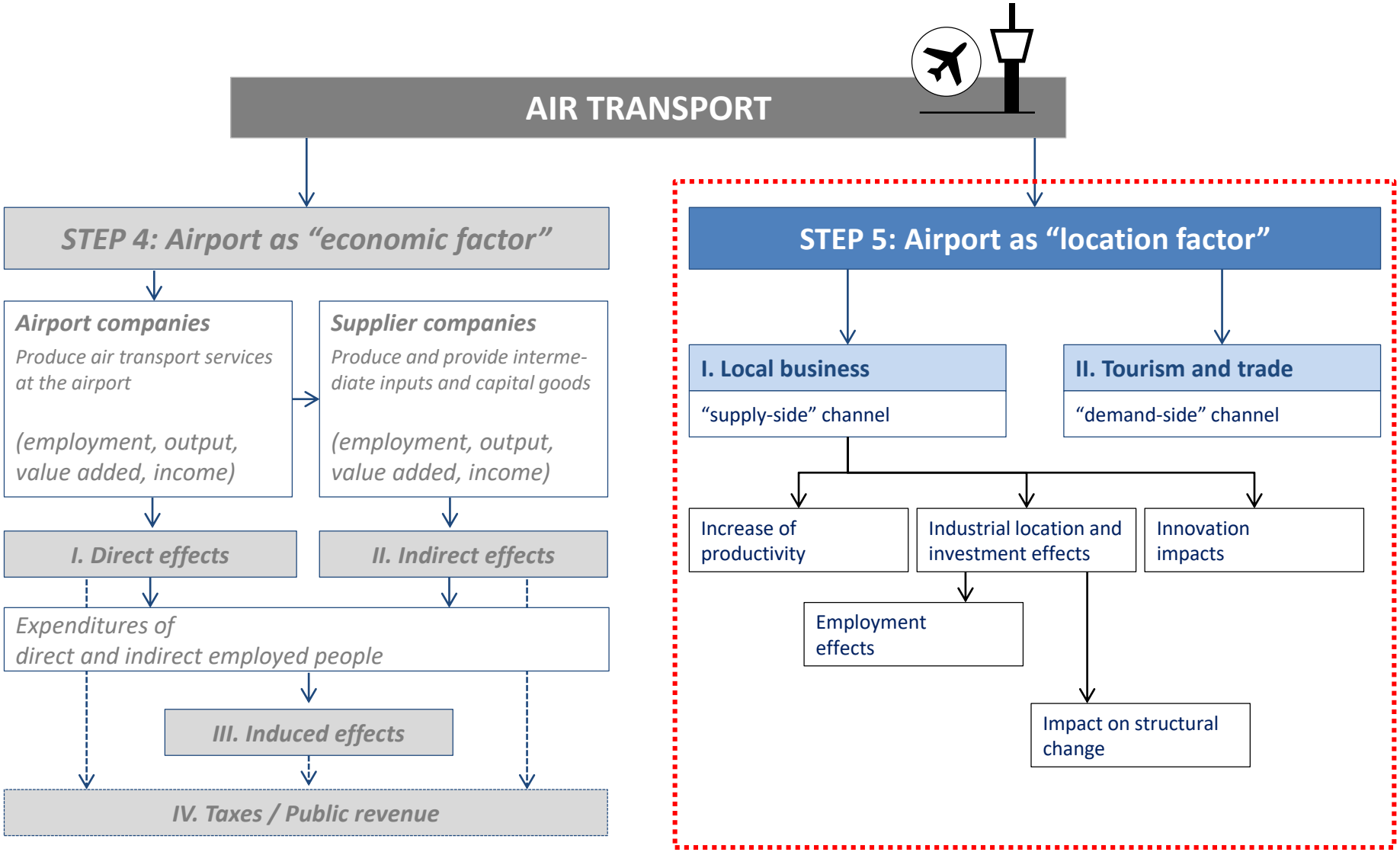
Economic effects of air transport: Catalytic effects



In Finland, some of the "major" branches of industry show a high use of air transport services

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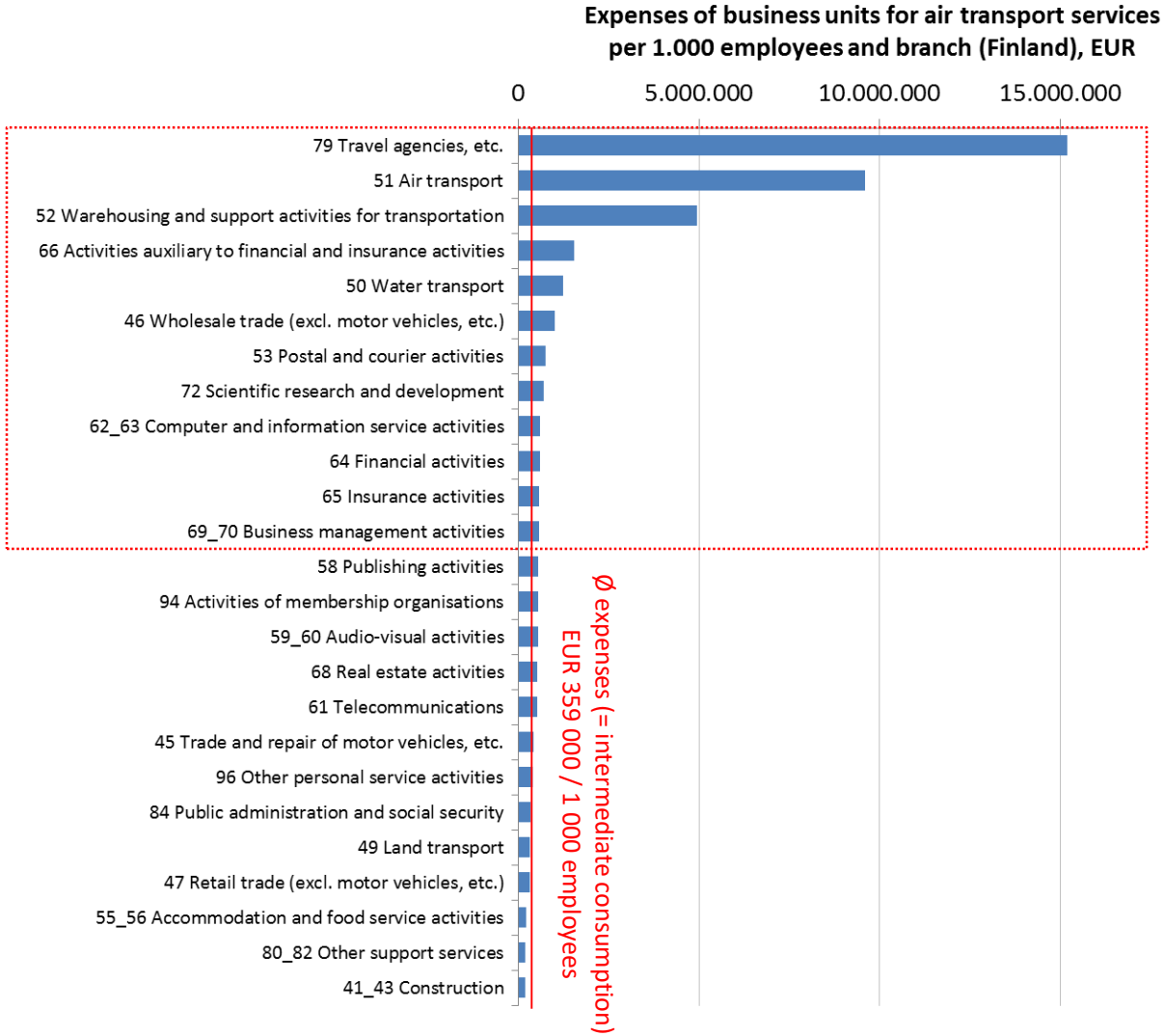
I. Business & innovation indicators: Companies/branches with high affinity to air transport

→ Analysis of the input-output structure of the 64 branches of industry in Finland (I/O table)

- In 2011, all branches of industry together employed 2.51 million people and needed EUR 900 bn. of **air transport services** as input (= intermediate consumption) for the production of their specific goods and services
- This equals average expenses for air transport services of EUR 359 000 per 1 000 employees – wheras **travel agencies** and **the air transport sector** itself show a very high value, followed by auxiliary transport services, auxiliary finance and insurance services, water transport, postal and courier services, scientific and computer services, financial and insurance activities



Source: Statistics Finland / EUROSTAT 2013

Average expenses of branches for air transport varies a lot across the branches to which "TOP" companies belong

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I. Business & innovation indicators: Selected TOP-companies in the Airport region

Company	Number of employees	Branch	Nace Rev. 2 classification	Avg. expenses of branch for air transport services per 1.000 employees, EUR	Avg. affinity of branch to air transport (expenses per employee at national average)
METSÄLIITTO OSUUSKUNTA/METSÄLIITTO COOPERATIVE SOCIETY/Punkaharju Plywood factory	250-499 employees	Manufacture of plywood and laminboard	C16	12.129	
UPM-KYMMENE WOOD OY, Savonlinna plywood factory	250-499 employees	Manufacture of plywood and laminboard	C16	12.129	
ANDRITZ OY	100-249 employees	Manufacture of machinery for paper and paperboard production	C17	21.826	
KRUUNUPUISTO OY	100-249 employees	Rehabilitation centres and nursing homes	Q86	158.873	
METSÄLIITTO OSUUSKUNTA, Finnforest Punkaharju, laminated veneer lumber factory	100-249 employees	Manufacture of builders' carpentry and joinery n.e.c.	C16	12.129	
NORELCO OY	100-249 employees	Manufacture of electricity distribution and control apparatus	C27	40.824	
OSUUSKAUPPA SUUR-SAVO, Prisma	100-249 employees	Retail sale in self-service department stores (over 2,500 m²)	G47	305.245	
SAVONLINNA WORKS OY	100-249 employees	Manufacture of machinery for paper and paperboard production	C28	31.994	
BLUE LAKE COMMUNICATIONS OY	50-99 employees	Wired telecommunications activities	J61	522.426	
CARLSON-SAVONLINNA OY	50-99 employees	Non-specialized retail sale of hardware, plumbing and building materials	G47	305.245	
KIINTEISTÖPALVELU SAVOTEK OY	50-99 employees	Combined facilities support activities	N80-N82	191.677	
MIKKELIN AMMATTIKORKEAKOULU OY, Mikkeli Polytechnic of Applied Sciences	50-99 employees	Tertiary education	P	170.377	
PESTI HENKILÖSTÖPALVELU OY	50-99 employees	Temporary employment agency activities	N78	121.234	
RUDUS RAKENNUSTUOTTEET OY	50-99 employees	Manufacture of concrete products for construction purposes	C23	27.142	
SAVONLINNAN OOPPERAJUHLIEN KANNATUSYHDISTYS RY/Savonlinna Opera Festival Patron's Association	50-99 employees	Performing arts	R90-R92	301.919	
SAVONLINNAN SEURAKUNTA/Savonlinna Lutheran congregation	50-99 employees	Activities of religious organisations	S94	557.341	
SOL PALVELUT OY	50-99 employees	General cleaning of buildings	N80-N82	191.677	
SUUR-SAVON OSUUSPANKKI/OP-Pohjola Group, Savonlinna office	50-99 employees	Other monetary intermediation	K64	593.509	

National average affinity of branches to air transport services

- Very high affinity
- High affinity
- Medium affinity
- Low affinity
- Very low affinity

Source: Business Region Savonlinna / UNICONSULT 2013

“Crucial“ need for air accessibility is often higher in remote regions and depends on specific company characteristics

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I. Business & innovation indicators: Importance of air connections for TOP companies (1/2)

- Some “TOP” companies in the Airport region of Savonlinna belong to **branches with high affinity to air transport services**
- However, average expenses of companies for air transport services can be **one indicator for the importance, but might <u>not</u> be sufficient for explaining the specific needs and situation** of a single company in the region
- Expenses and “dependency” on air traffic varies a lot in each branch depending on **specific characteristics** such as
  - Location and transport connections (e.g. road, rail)
  - Company size, type of business unit (e.g. headquarter, branch plant)
  - International relations and networks
  - Geographical distribution of procurement and sales markets
  - Fields of activity and specialisation (e.g. sales/distribution/marketing, purchasing, production, services/assembling, research and development)

Company polls and interviews in Savonlinna Region have brought out importance of air connections at SVL Airport

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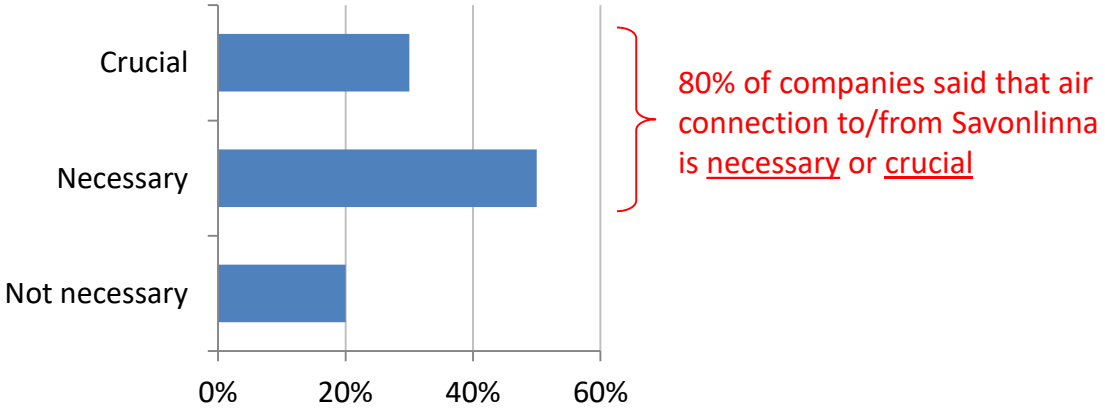
I. Business & innovation indicators: Importance of air connections for TOP companies (2/2)

- Several company polls carried out by local authorities or Chamber of Commerce of Etelä-Savo have shown that e.g. **air traffic is a important location factor for major industrial clusters in Savonlinna such as wood and paper manufacturing** although the national average expenses per employee for air transport services are quite low in this branch
- In April 2013, the City of Savonlinna has surveyed again the 20 "TOP" companies in the region and asked about the importance of air connection for their business activities; the main finding was that air connections to/from SVL Airport are **necessary or even crucial for 80% of the surveyed companies**

Importance of air connection for local companies (N=14)



Source: City of Savonlinna 2013

→ Survey results correspond with other European surveys where air accessibility ranks among the "TOP" location factors for business companies (80-90%)

See: Chapter "Methodology and general conclusions" (Step 5)

Estimated share of air travellers to all arriving tourists is quite small

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II. Tourism indicators: Importance of SVL Airport for tourism industry (1/2)

- Main number of inbound passengers is **related to the only scheduled destination (Helsinki), some charter flights** during summer time (e.g. for Savonlinna Opera Festival)
- Share of tourists arriving by air **is currently quite low** and has been falling steadily since 2000; estimate for 2011:
  - Total passengers (incl. charter flights):
    14 175 PAX / 2 ≈ 7 100 persons (in = out)
  - Therof inbound passenger (not resident in the region):
    7 100 x 50% = 3 550 persons
  - Share of total tourist arrivals:
    3 550 / 437 000 tourist arrivals in the region = **0.8%**

In 2012, 3 300 inbound tourists used SVL Airport and generated "direct" gross value added of EUR 329 000

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II. Tourism indicators: Importance of SVL Airport for tourism industry (2/2)

→ Assumption for calculation of economic effects on income and employment for tourism industry generated by each inbound passenger:

- Although share of air travellers is quite low it can be assumed that **average duration of stay is similar to the overall average in the region:**
  - Total (Domestic + Inbound): 1 204 000 / 437 000 = **2.8 nights**
  - Foreign tourists (Inbound): 262 000 / 72 000 = **3.7 nights**
- Moreover, it is assumed that air travellers have a **relatively high purchasing power** and thus, spend **at least the same amount per day as the average tourists arriving and staying at registered accomodations (EUR 109)**

→ Overall estimate of "direct" economic effects on local tourism industry (status quo):

	"Direct" effects on tourism industry
Employees	8
Gross wages and salaries, EUR	0.18 mln
Output (= gross revenue incl. VAT), EUR	0.79 mln
Gross value added, EUR	0.33 mln
Tax revenue (VAT), EUR	0.11 mln

- In 2012, approx. **3 300 inbound tourists** came by plane into the region using SVL Airport
- They spent **EUR 792 000** in different branches of tourism industry (e.g. accomodation, retail trade, land and water transport) for which **8 people had to be "fully" employed**
- Approx. **EUR 329 000 of gross value added** and **EUR 111 000 of VAT** remained as "net" economic benefit in the region or rather in the state treasury

Results for Savonlinna Airport

Economic benefits of selected PSO/RDF routes

Economic benefits of two selected routes with specific passenger potentials and flight patterns will be identified

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Working steps for calculation of economic benefits for selected PSO/RDF routes

Selection of two "most promising" routes according to maximum PAX potential per year

- Scenario 1: Helsinki "optimized" **+ 58 880 PAX** (18 flights per week / 12 months per year)
- Scenario 2: Close down **0 PAX** **no flights**

2 x

2 x

Economic factor

- Direct effects (per year)
  - Handling of additional PAX and aircrafts will increase revenue of airport companies (aviation + non-aviation sector)
  - Additional gross value added will be generated in the region, more inputs and investments are needed, possibly more persons will be employed
- Indirect and induced effects (per year)
  - Increase of intermediate consumption and investments made by airport companies will lead to further output and value added which will be generated by supplier companies in the upstream stages of the value chain
  - Increase of salaries and wages will rise purchasing power and private consumption

Location factor

- Economic effects on local tourism industry generated by purchasing power of inbound tourists on each route
  - Expenditures of tourists will induce direct output (= gross revenue) in different branches of industry
  - Calculation is broken down into purpose of travel and type of expenditure
  - Directly "induced" gross value added, employement and salaries and wages are derived from net revenue (= gross revenue less VAT)
- Long-term improvement of business environment, increase of productivity (e.g. through reduction of travel times), stimulation of business activities and foreign investment, attraction of highly skilled workforces etc.

Handling and serving opitmal passenger demand increases “economic acitivities” within the Airport region and beyond

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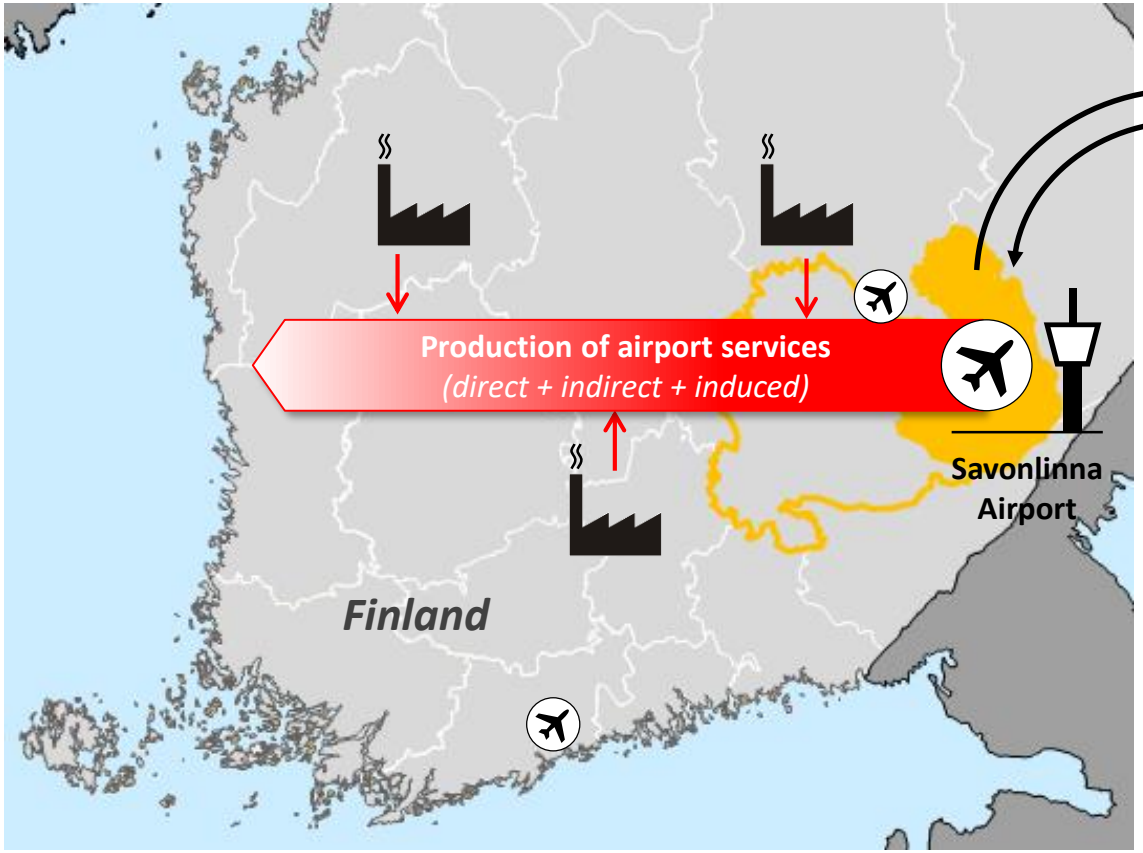
Scenario 1: Helsinki “optimized” / HEL

Effects on airport and supplier companies *(economic factor)*



Source: UNICONSULT 2013

PAX potential to be handled and served with all kind of services:

- Total: 58 880
- *thereof* inbound: 30%
- *thereof* transfer at HEL: 79%

Aircrafts to be handled:
18 flights per week / 12 months

Increase of “direct“ output and employment of airport companies

Estimated revenue effects:

- Total: EUR 3.72 mln
- *thereof* aviation: EUR 3.37 mln
- *thereof* non-aviation: EUR 0.16 mln

Estimated employment effects: No extra employees needed (assumption of increasing labour productivity)

Increase of “indirect” and “induced” effects

→ Total employment = 27 *(Status Quo)* + 11 = 38
→ Total output/revenue = EUR 7.61 mln
→ Total gross value added = EUR 2.64 mln

Provision of services including supplier and consumption effects would generate gross value added of EUR 2.64 mln

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Scenario 1: Helsinki "optimized" / HEL

Direct, indirect and induced effects *(economic factor)*

Effect / Dimension	Direct	Indirect	Induced	Total (Finland)	*therof in the Airport region*
Employees	≥ 0	17	4	**21**	**46.6%**
Gross wages and salaries, EUR mln	≥ 0	0.61	0.09	**0.70**	**46.4%**
Output (= revenue), EUR mln	3.72	3.35	0.54	**7.61**	**71.0%**
Gross value added, EUR mln	1.19	1.24	0.21	**2.64**	**69.4%**
Tax revenue (total), EUR mln	-	-	-	**0.84**	**-**
Saved unemployment benefits, EUR mln	-	-	-	**0.41**	**-**

- The increase of "direct" production of the aviation sector (e.g. landing fee, handling fee, administration costs) and non-aviation sector (e.g. revenue of restaurants, local transport provider) would **lead to further economic effects along the value chain**
- Due to stimulated demand for upstream products, capital goods and private consumption, the total demand of goods and services would add up to EUR 7.61 mln – this equals a **national gross value added of EUR 2.64 mln**, of which EUR 1.83 mln would be generated in the Aiport region
- The yearly **tax revenue for the Finish Treasury would be around EUR 840 000,** the sum of saved unemployment benefits would be EUR 410 000

20 608 inbound passengers from Helsinki would spend EUR 3.00 mln and lead to gross value added of EUR 1.25 mln

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Scenario 1: Helsinki "optimized" / HEL

Direct effects on tourism industry *(location factor)*

Pax potential	Total	*thereof:* inbound passengers	*thereof:* O&D passengers	*thereof:* persons	Ø nights per tourist	Total nights spent
Total	**58 880**	**20 608**	**20 608**	**10 304**		**27 673**
- business	18 380	6 433	6 433	3 217	*x 2.0*	6 471
- tourists	40 500	14 175	14 175	7 088	*x 3.0*	21 202

x EUR 108,5 per tourist and day/night

	G47 Retail trade, except of motor vehicles and motorcycles	I Accommodation and food service activities	H49 Land transport and transport via pipelines	O Public administration and defence; compulsory social security	R90-R92 Creative, arts and entertain-ment activities; libraries, archives, museums and other cultural acti-vities etc.	R93 Sports activities and amusement and recreation activities	Total
Employees	11	12	2	1	5	1	**31**
Gross wages and salaries, EUR	237 736	245 729	48 550	40 017	112 280	14 012	**698 325**
Output (= gross revenue incl. VAT), EUR	931 700	1 142 083	240 439	150 274	486 888	54 099	**3 005 483**
Gross value added, EUR	430 943	407 954	100 412	67 116	220 191	24 965	**1 251 581**
Taxe revenue (VAT), EUR	34 357	42 115	8 866	5 541	17 954	1 995	**420 768**

Results for Savonlinna Airport

Scenario 2 - "Close-Down" Scenario

"Close-Down" scenario: Short-term and long-term effects

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Working steps for calculation of economic loss in case of close down of SVL Airport

Negative short-term effects

I. Loss of **all "economic values" referable to the production of air transport services at SVL Airport** (Finavia, Groundhandling, Bar & Restaurants), including indirect and induced effects arising from production of up-stream products along the value chain and production of consumer goods

II. Additional **time costs** due to substitution of air connection by surface transport means, differentiated between purpose of travel (business / leisure)

Negative long-term effects

III. Loss of **jobs and economic activities of regional businesses**; loss of **purchasing power** and demand for consumer goods

- *Employees*
- *Revenue + Gross value added*
- *Loss of taxes*
- *Payment of unemployment benefits*

} *Public revenue*

"Close-Down" scenario: Negative short-term effects

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I. Loss of all economic values referable to the production of air transport services at SVL Airport

Dimension \ Effect	Direct	Indirect	Induced	Total (Finland)	*therof in the Airport Region*
Employees	-17	-6	-4	**-27**	**77.0%**
Gross wages and salaries, EUR mln	-0.47	-0.21	-0.11	**-0.79**	**75.3%**
Output (= revenue), EUR mln	-1.70	-1.17	-0.62	**-3.49**	**67.4%**
Gross value added, EUR mln	-0.54	-0.43	-0.24	**-1.21**	**65.4%**
Tax revenue (total), EUR mln	-	-	-	**-0.47**	-
Unemployment benefits, EUR mln	-	-	-	**-0.53**	-

→ Closure of SVL Airport would **put at risk 27 jobs in Finland** which are directly or indirectly connected to the production of the air transport services provided by the airport located companies and the supplier companies along the value added chain; 21 of the job losses would be in the Airport region itself

→ Loss of yearly net revenue would be EUR 3.5 mln, leading to a loss of **national gross value added of EUR 1.21 mln p.a.** and a net loss of **public revenue (tax revenue + payment of unemployment benefits) of EUR 1.00 mln p.a.**

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II. Additional time costs through decline of regional accessibility of Savonlinna

Assumptions for one way ride

"Savonlinna Centre" → "Helsinki Airport"

Mode		Modal share	Frequency	Travel costs (range)	Travel costs (average)	Net travel time	Gross travel time	Comments
Air		**100%**	**2**	**100-300 EUR**	**200.00 €**	**01:10**	**02:30**	**Car/bus drive from Savonlinna Centre to Airport: 00:20 h / Time for Check-in: 01:00 h**
Total: Land transport *or*		**100%**			**160.75 €**	**03:44**	**04:39**	
Car	Own car / Rented car	85%	flexible	150-200 EUR	175.00 €	03:35	04:35	Time buffer, parking, car return and footway to terminal at HEL: 01:00 h
Train + Bus	Regional Train + InterCity Train + Bus	15%	5	60-100 EUR	80.00 €	04:35	05:05	Access to train station: 00:15 h/ Footway to terminal at HEL: 00:15 h
Difference: Land transport / air						**+ 02:34**	**+ 02:09**	

→ **Additional gross travel time due to replacement of air connection by car and train/bus is 2:09 hours**

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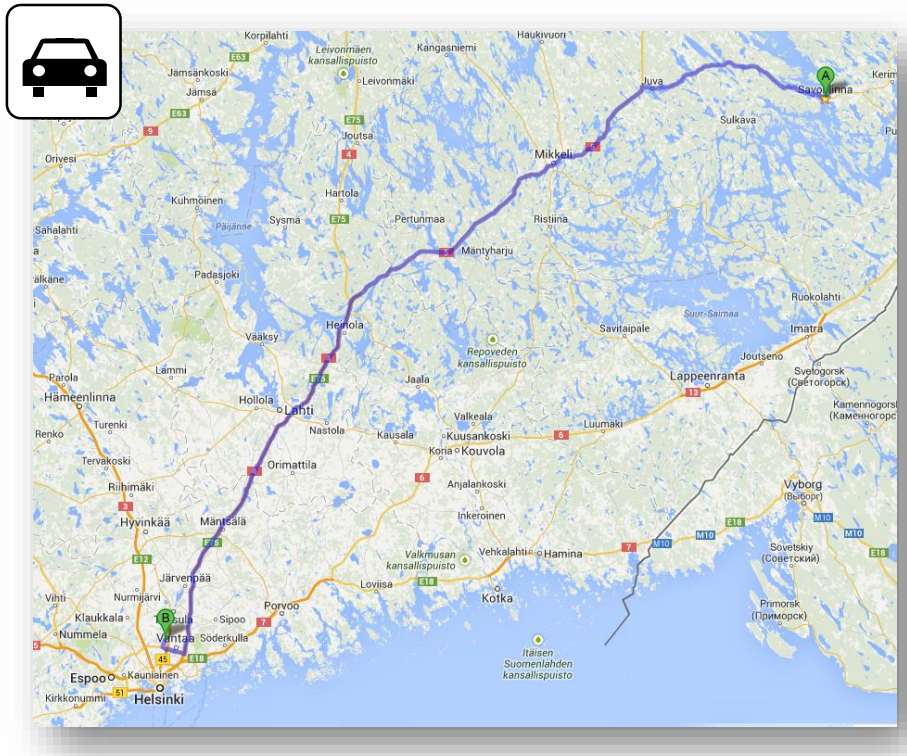
II. Additional time costs through decline of regional accessibility of Savonlinna

Land transport "Savonlinna Centre" → "Helsinki Airport"



→ GoogleMaps

- Distance: 326 km
- Net travel time: 03:35 h

→ VR Group

- Products: Regional + InterCity + Bus
- Net travel time: 04:35 h

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II. Additional time costs through decline of regional accessibility of Savonlinna

	PAX (status quo)	Time value, per hour	Additional time costs per PAX (weighted)	Additional/ Saved time hours	Addtitional time costs (total)
Total	**13 206**	**-**	**33.42 €**	**28 393 €**	**441 352 €**
business	5 336	28.00 €	60.43 €	11 471 €	322 442 €
tourism + other	7 871	7.00 €	15.11 €	16 922 €	118 910 €

$$Time\ value\ (business) = \frac{Gross\ salaries\ and\ wages + net\ operating\ surplus}{hours\ worked} = \frac{78.3\ bn\ EUR + 39.2\ bn\ EUR}{4.23\ bn\ h} = 28\ EUR/h$$

$$Time\ value\ (leisure) = Time\ value\ (business) \cdot \frac{hours\ worked}{leisure\ time\ hours\ (12h\ per\ day)} = \frac{28\ EUR}{h} \cdot \frac{4.23\ bn\ h}{365 \cdot 12 - 4.23\ bn\ h} = 7\ EUR/h$$

→ Time costs are equivalent to the minimum loss of potential gross value added (opportunity costs); **additional time costs for 13 000 passengers presently using flights mainly from/to Helsinki would be approx. EUR 440 000**; accordingly, the total loss of potential tax revenue would be approx. EUR 157 000 (= 35% of lost gross value added) *

→ Assuming that outbound passenger mostly represent the local population and employees (= approx. 50% of total), **additional time costs for regional employees would be EUR 220 000** which equals a loss of potential value added for the regional economy <u>at least</u> at the same level of the time costs

* Tax revenue is comlpetely considered as income for Finish Treasury even though some foreign air travellers use the air connection to/from Savonlinna

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III. Loss of jobs and economic activities of regional businesses; loss of purchasing power and demand for consumer goods

- Air traffic is a **important location factor** for major industrial clusters in Savonlinna such as
  - wood and paper manufacturing (e.g. plywood and laminate production)
  - engineering works (e.g. production and maintenance of machinery for wood and paper manufactering)
  - manufacture of electronic products
  - tourism, culture activites (e.g. Savonlinna Opera Festival)
- Many companies are **dependent on global market** access due to international customer relations; especially "high value" activities provided by local business units in Savonlinna (e.g. worldwide technical services and consultancy) come along with a "crucial" need for high regional accessibility
- According company surveys carried out by City of Savonlinna, Savonlinna Region and Chamber of Commerce, a total cut off from commercial air traffic would imply a **relocation of jobs out of the region;** current estimate of job losses in different branches of industry is:

Surveyd companies (aggregated by branches)		Sector of industry according NACE Rev. 2 classification (Finland: TOL 2008)		No. of jobs losses
Forest industry including wood processing	→	Manufacture of wood and of products of wood	C16	20
Electronics	→	Manufacture of computer, electronic and optical products	C26	25
Engineering works	→	Manufacture of machinery and equipment n.e.c.	C28	325
Creative industry	→	Creative, entertainment and other cultural/leisure activities	R90-R92	50
		TOTAL		**420**

→ Assignment of companies to sectors of industry according to their major field of activity

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III. Loss of jobs and economic activities of regional businesses; loss of purchasing power and demand for consumer goods

Loss of jobs at local business units
(direct + indirect effects)

Sector of industry		Direct loss of economic values at local business units				
		Employees	Output (Regional)	Gross value added (Regional)	Net operating surplus (Regional)	Gross salaries and wages (Regional)
Total		**-420**	**-113 356 027**	**-33 167 493**	**-10 572 257**	**-16 369 913**
Manufacture of wood and of products of wood	C16	-20	-4 279 401	-873 408	-32 210	-552 809
Manufacture of computer, electronic and optical products	C26	-25	-10 043 103	-1 716 954	326 149	-1 376 437
Manufacture of machinery and equipment n.e.c.	C28	-325	-94 694 940	-28 295 635	-10 381 944	-13 277 282
Creative, entertainment and other cultural/leisure activities	R90-R92	-50	-4 338 583	-2 281 496	-484 252	-1 163 386

Loss of purchasing power
(induced effects)

		Loss of private consumption and domestic demand through loss of purchasing power of employees		
Regional producer of consumer goods: Employees	Regional producer of consumer goods: Output	Regional producer of consumer goods: Gross value added	Regional producer of consumer goods: Net operating surplus	Regional producer of consumer goods: Gross salaries and wages
-29.6	**-4 171 054**	**-1 696 633**	**-450 867**	**-776 148**

Output of consumer good producers
= Gross salaries and wages
x consumptions rate (56%)
x regional consumption quota (35%)
x multiplier for supplier effects (1.3)

"Close-Down" scenario: Negative-long term effects

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III. Loss of jobs and economic activities of regional businesses; loss of purchasing power and demand for consumer goods

Total loss of economic effects
(direct + indirect + induced effects)

Total loss of
public revenues

Regional economic effects (direct + indirect + induced)			
Employees	Gross value added	Net operating surplus	Gross salaries and wages
-450	-34 864 126	-11 023 123	-17 146 061

Taxes				
Personal income tax	Corporate income tax	VAT	Other	Total
-5 296 756	-1 447 447	-3 552 888	-2 704 811	-13 001 902

Unemployment benefits
Total
-8 774 707

Summary: Total losses of

- Employees -450
- Gross value added EUR -34.9 mln p.a.
- Public revenue EUR -21.8 mln p.a.

"Close-Down"-Scenario: Negative effect due to a close-down will be even higher than positive effects in the status quo

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Summary

	Short-term effects				Long-term effects
	Production of airport transport services (direct + indirect + induced)	**Additional time costs** (opportunity costs in terms of lost value added)	**TOTAL**	***thereof:* in the region**	**Job losses in regional industry** (direct + induced)
Employees	-27	-	-27	-21	-450
Gross value added, EUR mln p.a.	-1.21	-0.44	-1.65	-1.02	-34.9
Public revenue, EUR mln p.a.	-1.00	-0.16	-1.16	-1.08	-21.8

→ In the short-term, negative effects on regional economy would be **over one million EUR per year both in terms of gross value added and of public revenue;** 21 jobs would be at risk in the region, 27 in total

→ 420 "direct" job losses in regional industry would lead in the long-term to an enormous loss of regional economic values; taking into account the induced effects arising from a decrease of regional purchasing power, further 30 jobs would be at risk; **the total loss of regional gross value added would be EUR 35 mln p.a.,** whereas **public revenue would decrease by EUR 22 mln p.a.**

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