

# HOW 'SMART' ARE RURAL AREAS?

## A CASE STUDY APPROACH

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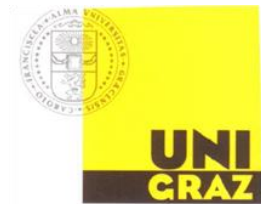
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## ○ Aim and outline of the paper

- Give a short introduction of the still young “smart” debate
- Point out the rural relevance in the “smart” development strategy
- Deduce first tentative answers for “smart” rural development on the basis of two Austrian case studies
- The paper is based on the work within the first stage of the TASTE project – Towards A SmarT rural Europe – as part of the RURAGRI ERA-NET within the 7<sup>th</sup> European Framework Programme



- **Where do we stand in the (still young) smart debate?**
  - European Commission stresses importance of **smart specialisation strategies** in the EU 2020 innovation plan in order to
    - concentrate resources on few key priorities,
    - take account of differing capacities of regional economies to innovate and
    - exploit regional diversity, stimulate cooperation across national and regional borders.
  - Concept originates in literature analysing productivity gap between U.S. and EU that has become evident since 1995 (e.g. Ortega-Argilés, 2012)
    - Consensus: critical role of technological linkages and spillovers between sectors and regions in explaining the productivity gap
  - Concept adopted and refined by *Knowledge for Growth* (K4G) expert group (Foray, David, Hall 2009) advising the former EU Commissioner for Research, Janez Potočnik

- **Main considerations in the smart debate**
  - Differentiated policies for core and periphery regions are advocated (Foray et al. 2009)
  - “Potential evolutionary pathways depend on inherited structures and existing dynamics within regions“ (McCann and Ortega-Argilés, 2013)
  - Different regions tend to specialise in different knowledge-related sectors reflecting their capabilities
  - Identification of relevant specialisation strategies by means of bottom-up planning process (e.g. entrepreneurial discovery process)
    - Smart specialisation strategies

## ○ **Achievements of the smart approach**

Camagni and Capello, 2012

- Unappropriateness of one-size-fits-all innovation policy approach
- Main ideas – specialisation, embeddedness, connectedness as well as relatedness – important
- Connected with and based on a territorial approach with emphasis on collective learning and importance of local milieu

## ○ **Limits of the smart approach**

Camagni and Capello, 2012; Boschma 2014

- Formal knowledge as only source of innovation
- Ignores large variability even between same regional types
- Smart specialisation concept might be blind to emerging trends in technologically unrelated sectors in a region
- What is the core of the smart approach?
  - Smart specialisation: concentration on regional strengths
  - Smart growth: based on knowledge, learning, R&D
  - Smart innovation: differentiated pattern of innovation for regional types
  - Smart development: combination of all three (?)
- Smart: a weasel word?

- **Smart development: rural relevance**
  - 58% of the EU-27 population lived in intermediate or predominantly rural regions in 2011 according to Eurostat
  - Smart specialisation strategies in rural and intermediate areas of particular interest (McCann and Ortega-Argilés, 2013):
    - In large and highly diversified urban regions the smart specialization argument is less relevant as almost all sectors and technological fields will be present
    - Regions with both rural and urban areas with a sufficiently large population base to generate agglomeration effects are the ideal target because of their growth potential and their concentration possibilities
    - Yet for very isolated regions these strategies might not fit because of their lack of scale might reduce effectiveness of the policy approach

## ○ Smart as a compensation strategy for rural areas?

- OECD definition of predominantly rural and intermediate regions
  - Rural communities: population density less than 150 inhabitants/km<sup>2</sup>
  - Predominantly rural regions: more than 50% of the population lives in rural communities
  - Intermediate regions: share of population living in rural communities is between 15% and 50%

<b>Stylized characteristics of rural regions:</b>	<b>As opposed to urban regions:</b>
Lower income, lower qualification, concentration on few sectors, greater distance to knowledge centres, lower firm foundation, lower income, sinking numbers of inhabitants, lower entrepreneurship and innovation, brain-drain	Higher income, higher qualification of workforce, proximity of higher education institutions, industrial diversity, growing numbers of inhabitants, benefits from knowledge spillovers, higher entrepreneurship and innovation, brain-gain

- Basic concepts of regional development more or less based on aggregation and urbanisation economics
- Most innovation oriented policies are to a large extent neglecting rural areas



## ○ Some new (irritating?) facts

Dijkstra et al., 2012

- Usual picture: move from rural areas to cities, urban centres, metropolitan regions
  - Cities as ‚magnets‘ drawing people, human capital, from rural areas
  - “Myth“? Ever increasing concentration of people and economic growth in (large) cities compared to the rest of the country
- Yet new trends after 2000 for (western) Europe
  - After 2000/EU-15, rural areas have outperformed intermediate regions, these in turn have outperformed peri-urban regions
  - Since 2000 intermediate and predominantly rural regions are now playing a much more important role for EU economic growth compared to the 1990s
- The pattern of population and economic growth in (northwestern) Europe does not follow a linear pattern of large city logic
  - Regional size as a poor predictor of economic growth
  - Development policies should not focus exclusively on large urban areas as these would likely miss their target in terms of maximising aggregate growth

## ○ Case study approach

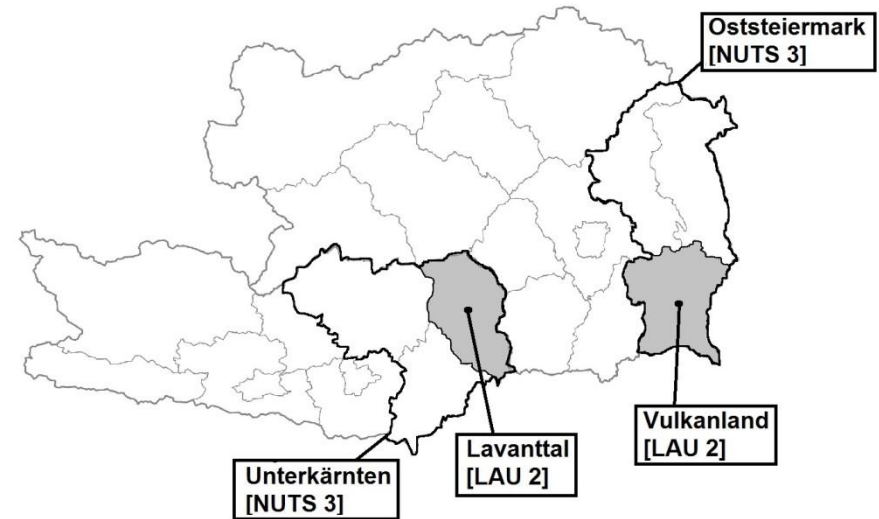
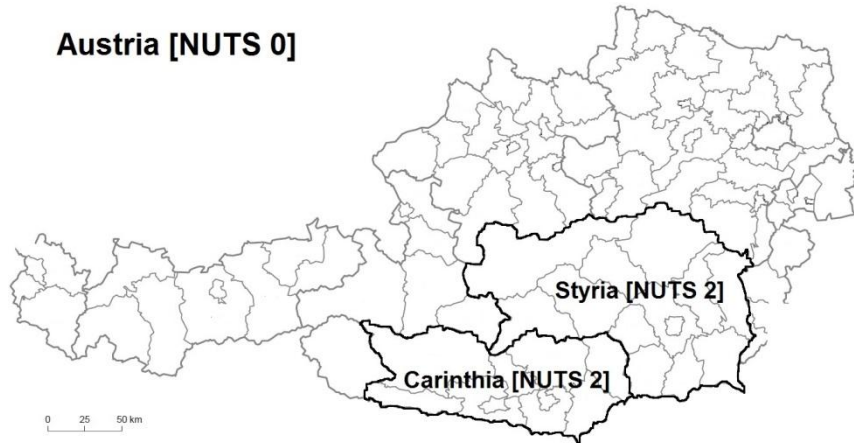
### • Aim

- How do two Austrian case study regions correspond to the stylized facts?
- What do they have in common, what makes them different?
- Can first indication for a (compensatory?) smart development strategy be formed?

### • Methods

- Regional secondary meso-data of the two case study regions
- Firm-oriented micro-data to analyse firm behaviour within the two case study regions
- Preliminary results of a survey

# Regional profiles of the case study regions

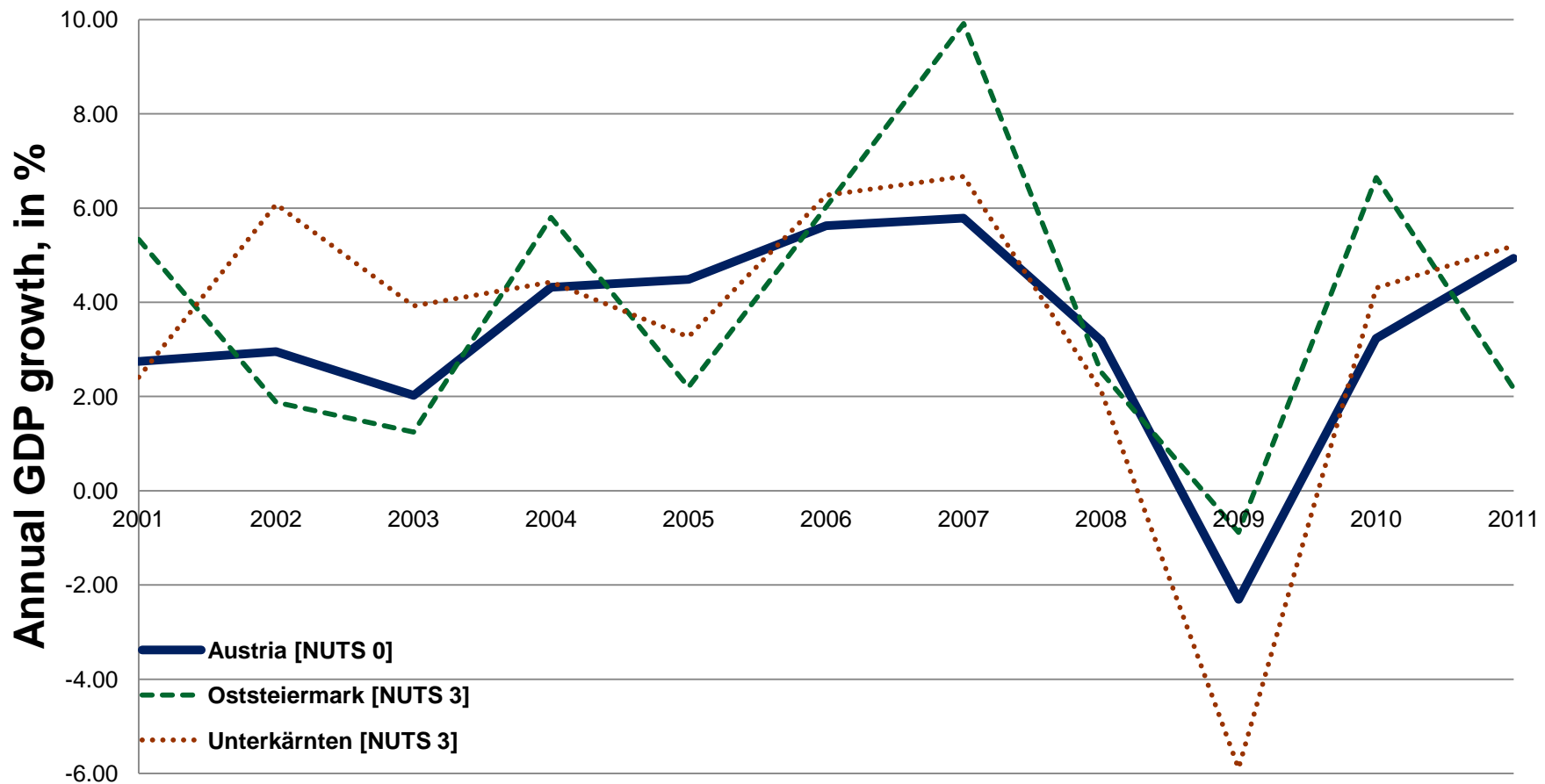


(Source: Statistik Austria)

	<b>Styrian Vulkanland 2013</b> (Source: WIBIS Steiermark)
Administrative units	79 municipalities located in Oststeiermark [NUTS 3: AT224]
Inhabitants	88,843
Population density	83 inhabitants per km <sup>2</sup>
OECD typology	AT224: Predominantly rural
Core competence	Services, handcraft and foodstuff
Economic structure (% of employees)	Primary sector 2,1% Secondary sector 31,6% Tertiary sector 66,3%

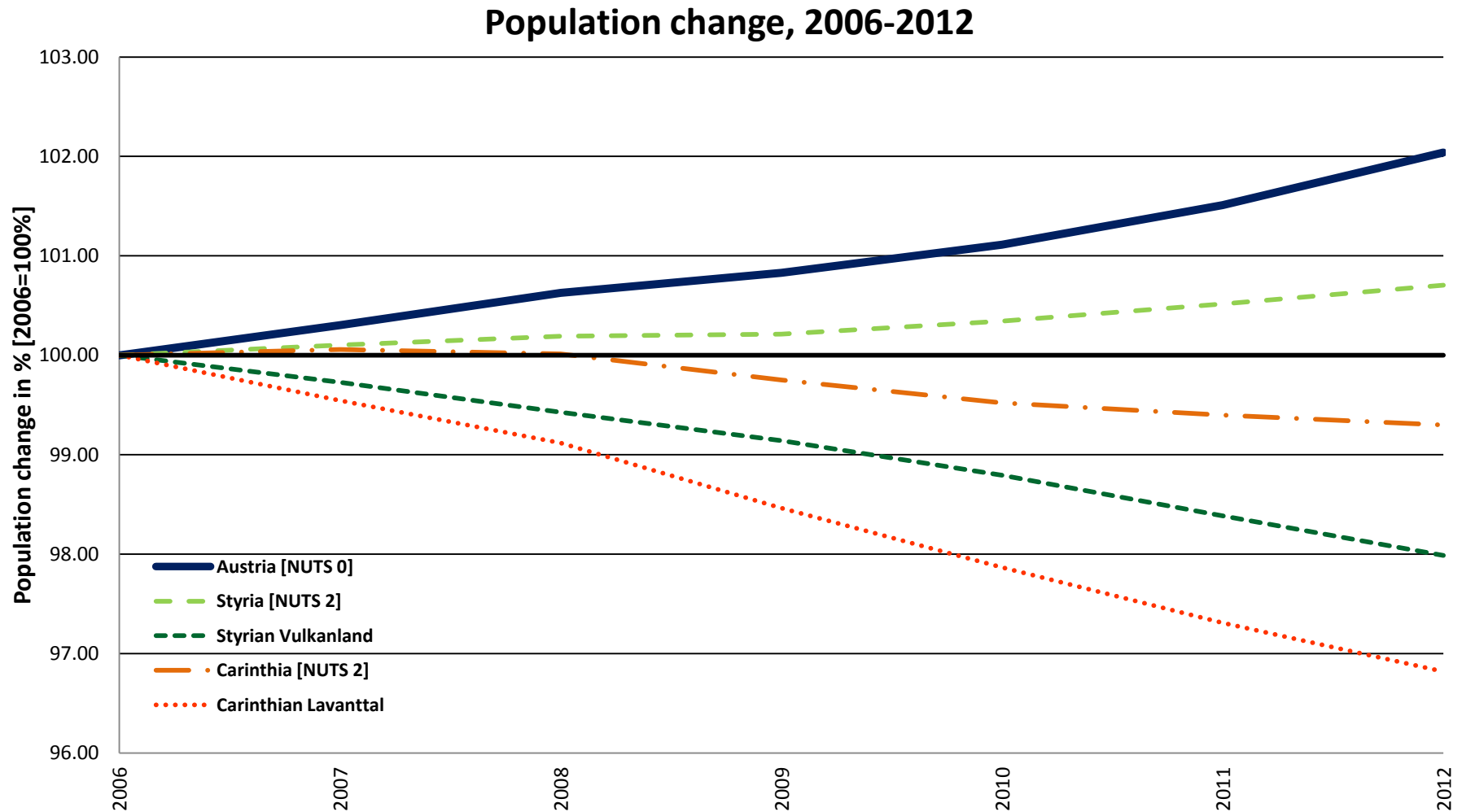
	<b>Carinthian Lavanttal 2013</b> (Source: WIBIS Kärnten)
Administrative units	8 municipalities located in Unterkärnten [NUTS 3: AT213]
Inhabitants	53,707
Population density	55 inhabitants per km <sup>2</sup>
OECD typology	AT213: Predominantly rural
Core competence	Building industry, metal production
Economic structure (% of employees)	Primary sector 1,8% Secondary sector 44,6% Tertiary sector 53,6%

# ○ Annual GDP growth in corresponding NUTS 3 regions



(Source: Eurostat)

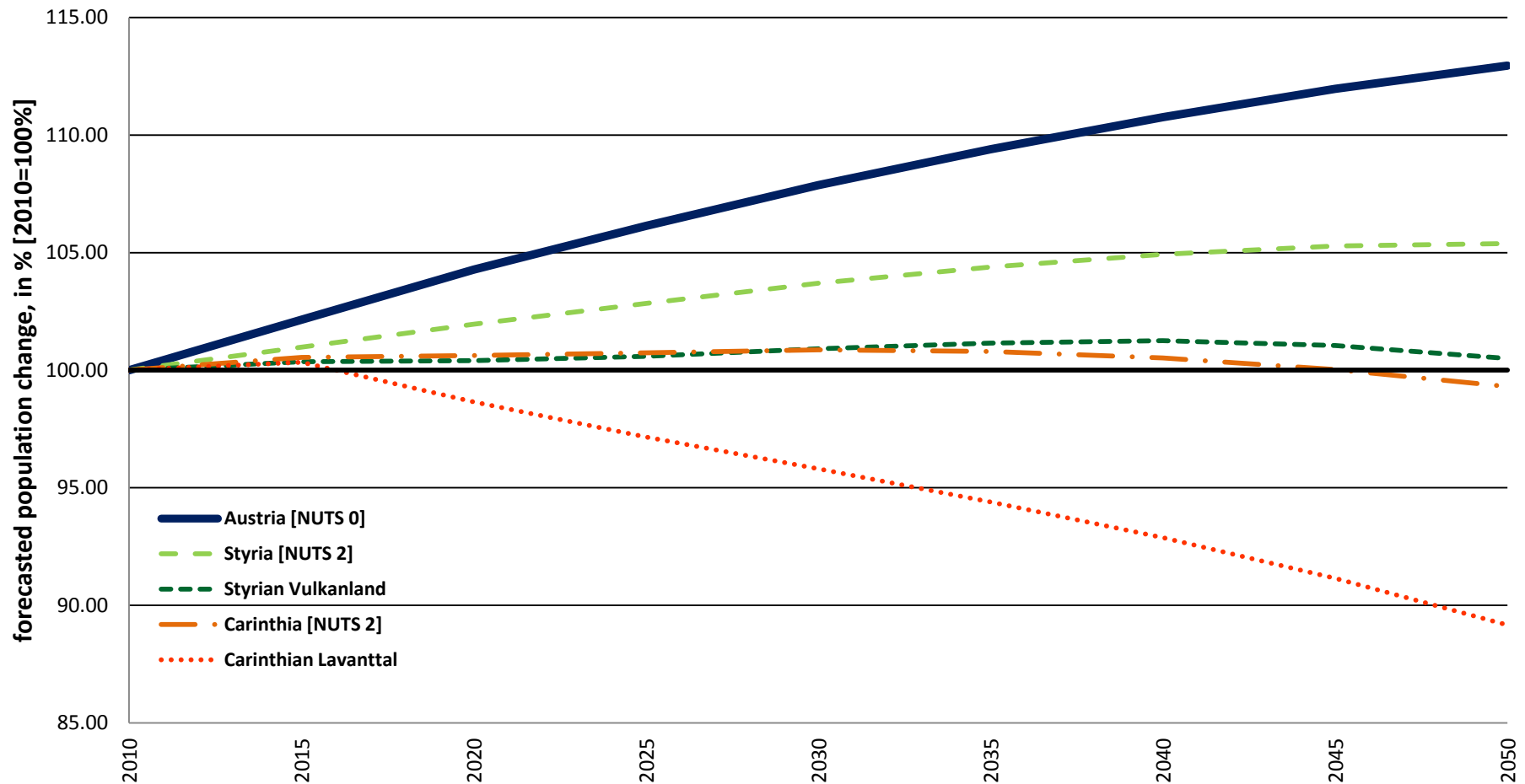
# ○ Population development, 2006-2012



(Source: WIBIS Kärnten, Steiermark)

# ○ Population forecast, 2015-2050

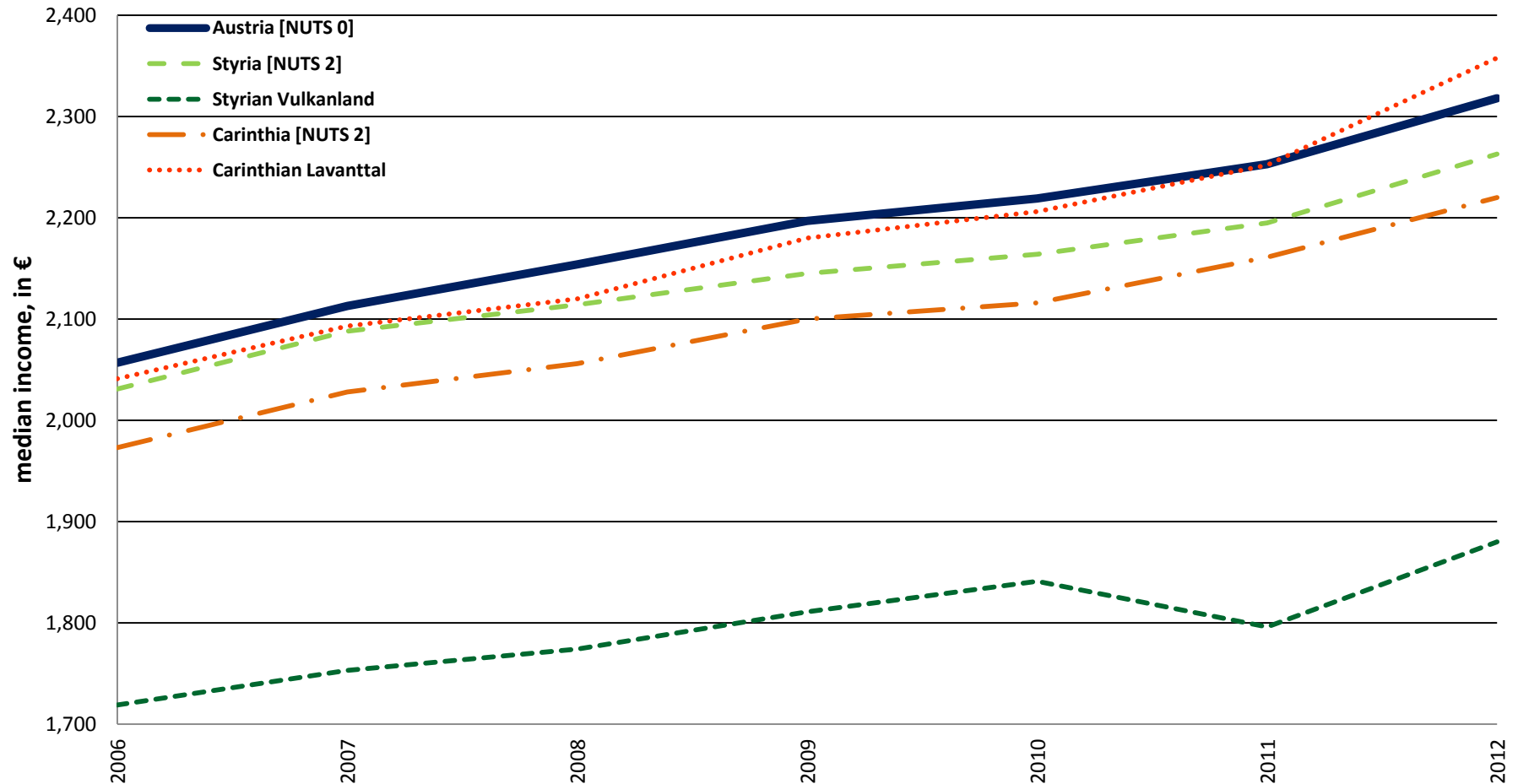
## Forecasted population change, 2015-2050



(Source: ÖROK forecast, Statistik Austria)

# ○ Gross median income

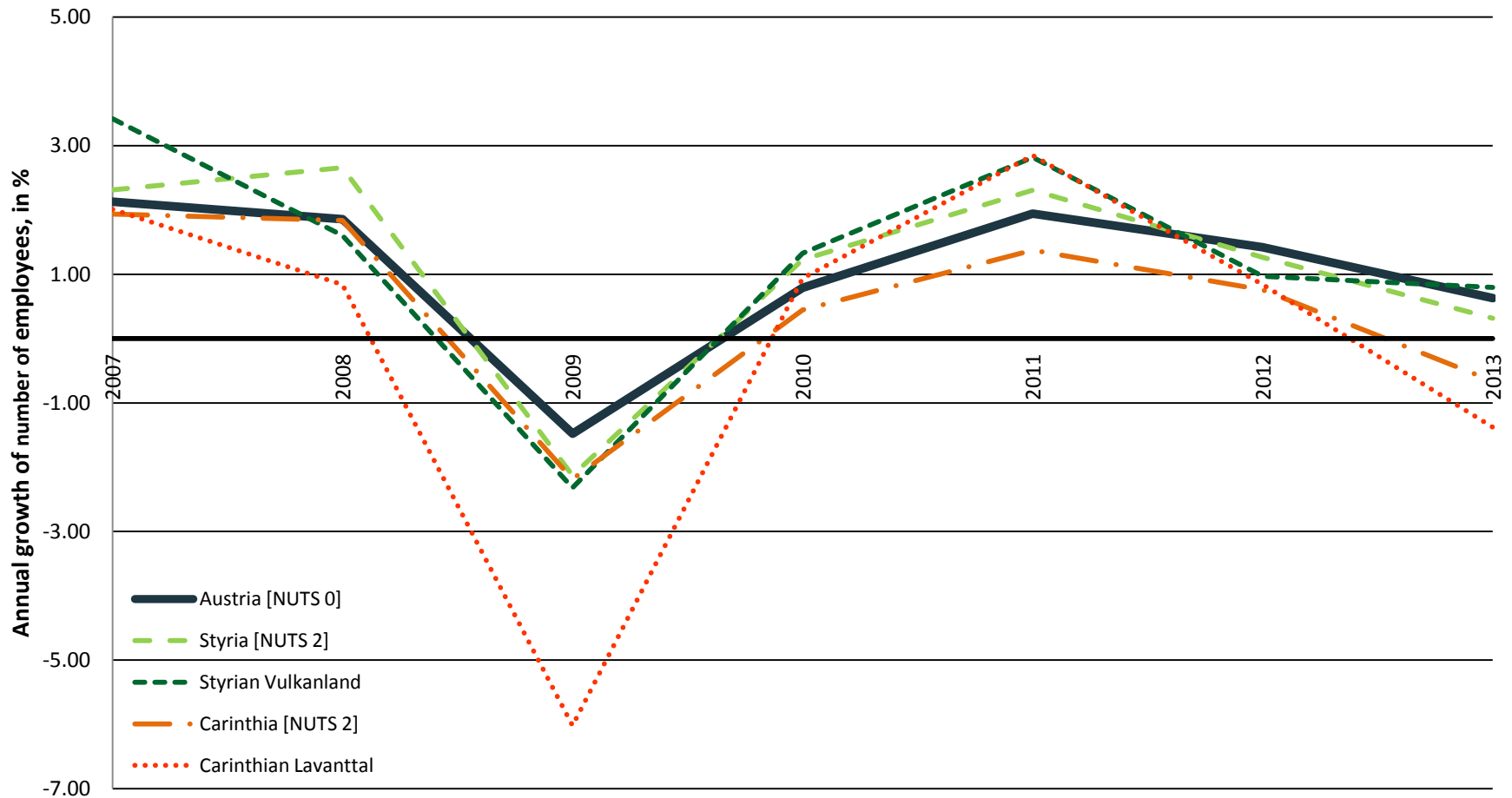
## Median income, 2006-2012



(Source: WIBIS Kärnten, Steiermark)

# ○ Annual increase in number of employees

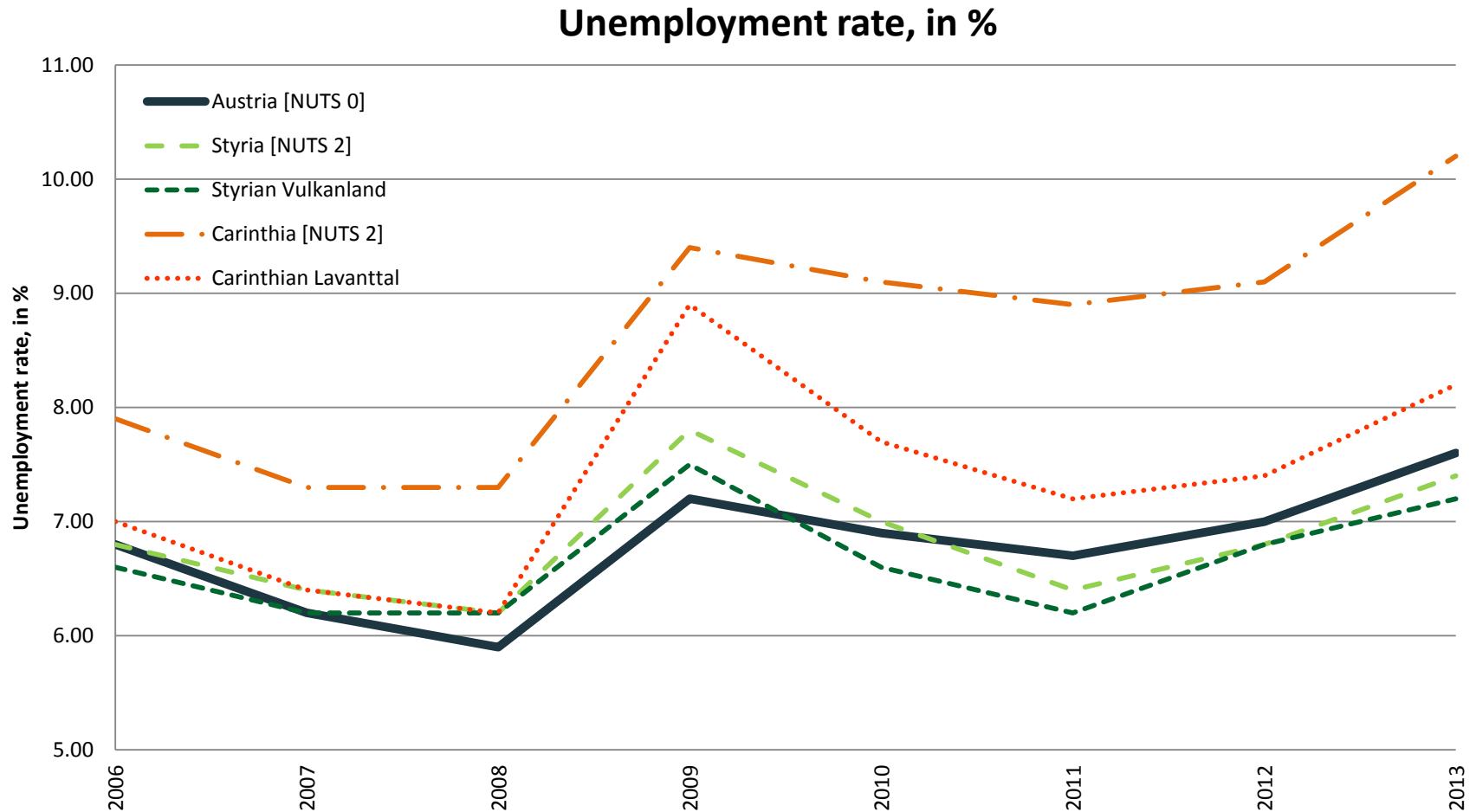
Annual increase in number of employees, in %



(Source: WIBIS Kärnten, Steiermark)

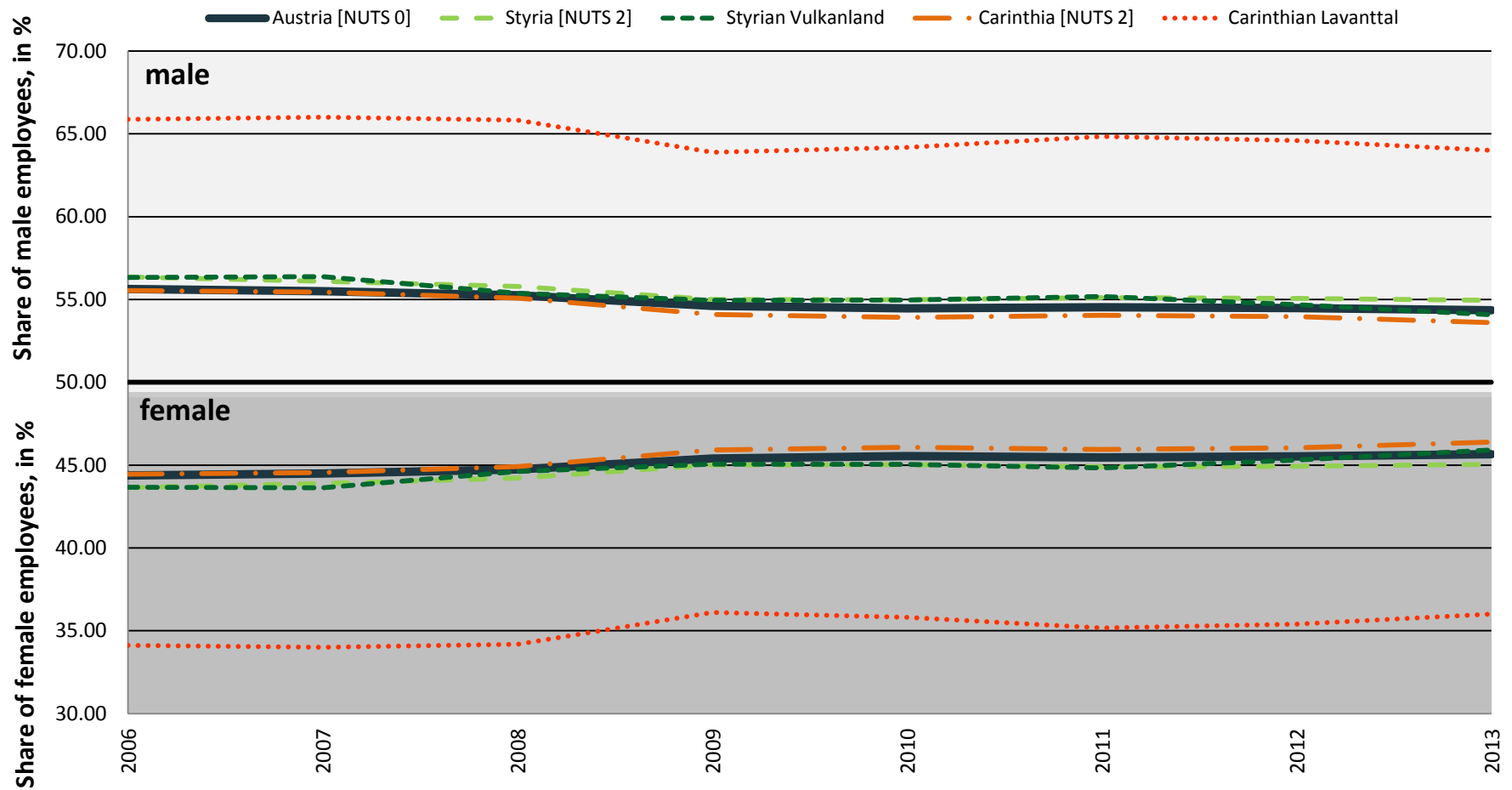


# ○ Unemployment rates



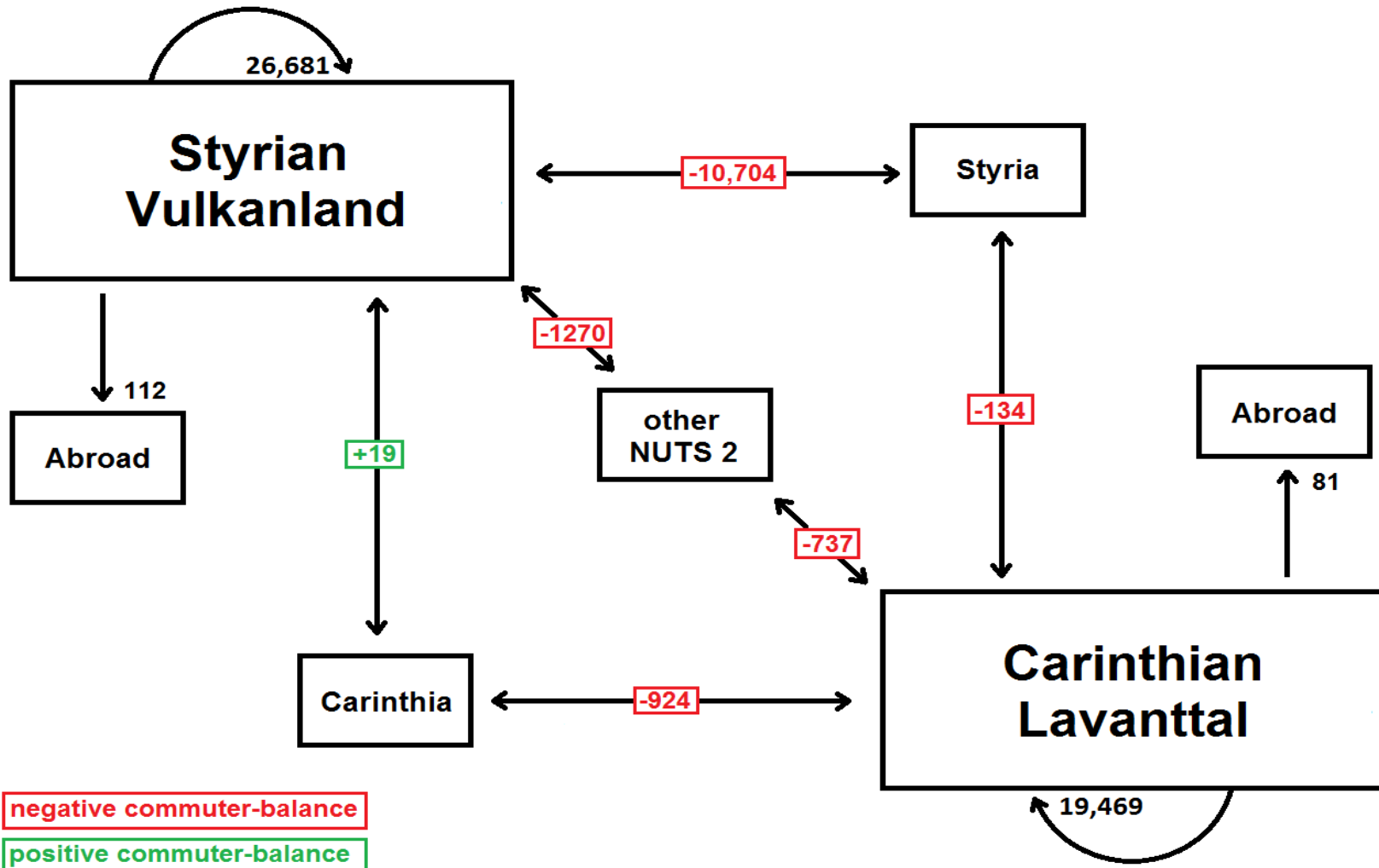
(Source: WIBIS Kärnten, Steiermark)

# ○ Share of male and female employees



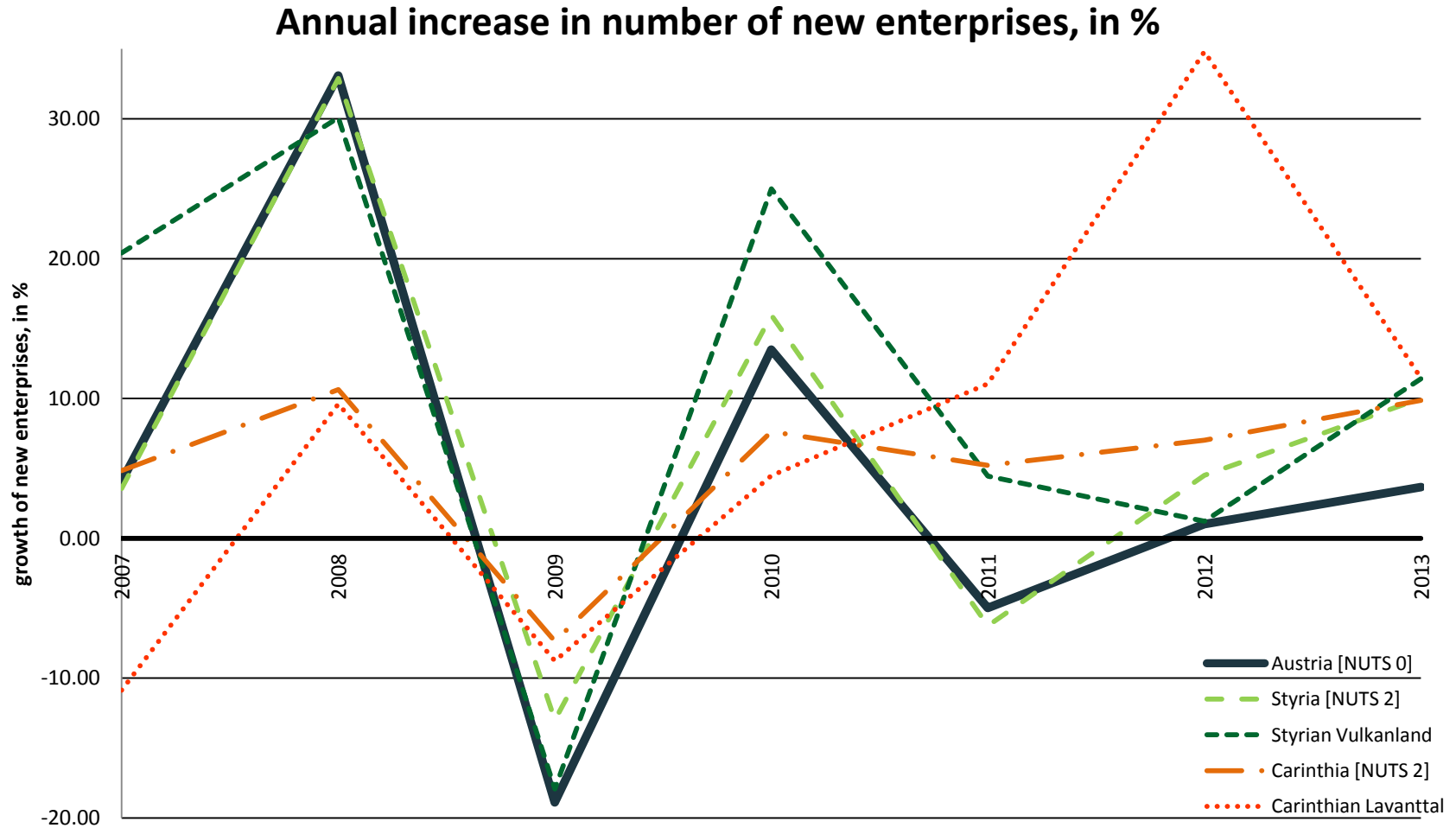
(Source: WIBIS Kärnten, Steiermark)

# ○ Commuter statistics, 2011



(Source: Statistik Austria)

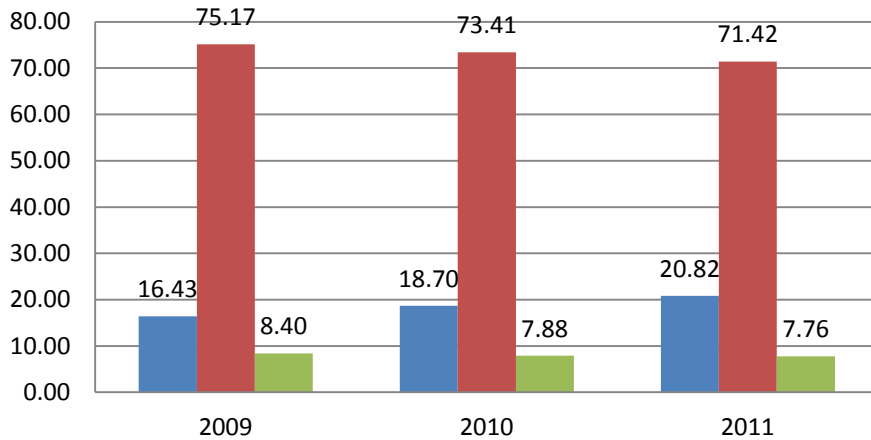
# ○ Forming of new enterprises



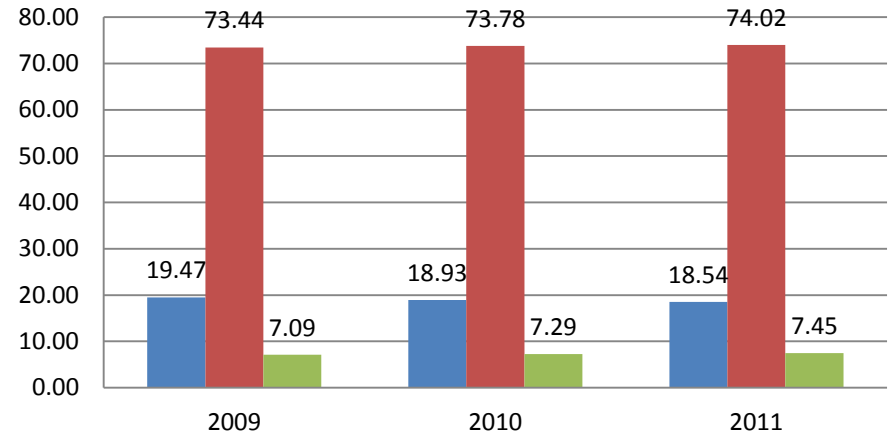
(Source: WIBIS Kärnten, Steiermark)

# ○ Educational attainment of employees

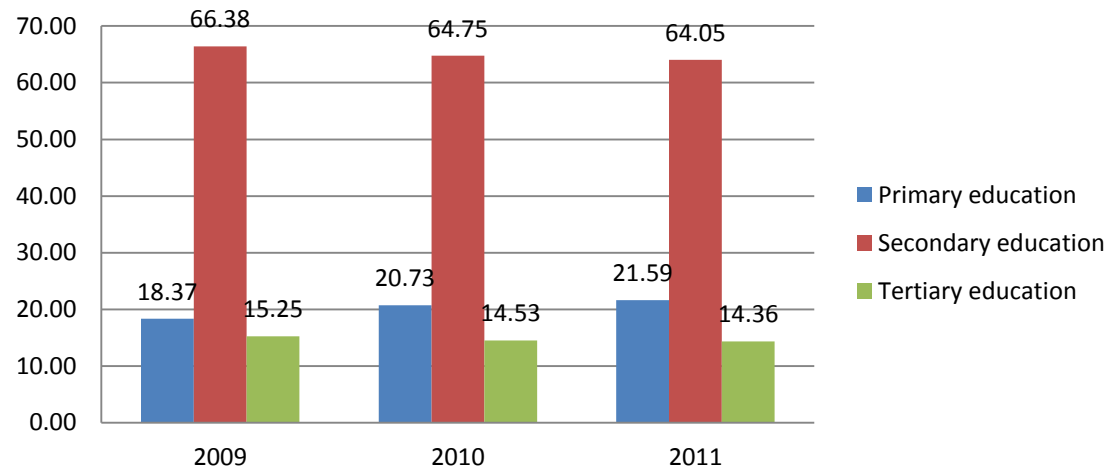
## Carinthian Lavanttal, in %



## Styrian Vulkanland, in %



## Austria, in %



(Source: WIBIS Kärnten)

# ○ Summary of the empirical findings from official statistical databases

	<b>Styrian Vulkanland 2006-2013</b>	<b>Carinthian Lavanttal 2006-2013</b>
<b>Population growth / forecast</b>	<i>decline / little change</i>	<i>decline / decline</i>
<b>Median income</b>	significantly <i>lower</i> than Austrian median income	<i>circa</i> Austrian median income
<b>Employment growth</b>	<i>circa</i> Austrian rate, yet more volatile	<i>circa</i> Austrian rate, yet more volatile
<b>Share of male (female) employees</b>	<i>circa</i> Austrian share	<i>Higher (lower)</i> share of male (female) employees than Austrian distribution
<b>Unemployment rate</b>	<i>circa</i> Austrian rate	<i>higher</i> than Austrian rate
<b>Commuter balance</b>	overall <i>negative</i>	overall <i>negative</i>
<b>Qualification of workforce</b>	Primary education: <i>below</i> Austrian share Secondary education: <i>above</i> Austrian share Tertiary education: <i>below</i> Austrian share	Primary education: <i>below</i> Austrian share Secondary education: <i>above</i> Austrian share Tertiary education: <i>below</i> Austrian share
<b>Firm foundation rate</b>	<i>circa</i> Austrian rate, yet more volatile	Significantly <i>higher</i> rate than Austria from 2010 onwards

# ○ Preliminary exploration of firm level data from the ORBIS database

		Styrian Vulkanland		Styria [NUTS 2]		Carinthian Lavanttal		Carinthia [NUTS 2]		Austria [NUTS 0]	
		Orbis database	Official statistics	Orbis database	Official statistics	Orbis database	Official statistics	Orbis database	Official statistics	Orbis database	Official statistics
Number of firms, 2012		296	2,608	5,567	41,487	277	1,477	2,964	20,477	29,306	303,691
Size of firms, 2012 (number of employees)	S < 10	51.69 %	85.24 %	56.03 %	84.42 %	51.99%	81.79 %	60.59 %	85.00 %	51.85 %	84.54 %
	10 ≤ S < 50	35.14 %	12.42%	33.23 %	12.63 %	34.66 %	14.22 %	31.75 %	12.37 %	34.68 %	12.54 %
	50 ≤ S < 250	11.82 %	2.22%	8.66 %	2.37 %	11.19 %	3.45 %	6.58 %	2.17 %	10.76 %	2.41 %
	S ≥ 250	1.35 %	0.12%	2.08 %	0.59 %	2.16 %	0.54%	1.08 %	0.46 %	2.71 %	0.52 %
		Orbis database		Orbis database		Orbis database		Orbis database		Orbis database	
Mean number of employees, 2012		29.65		33.55		29.33		22.87		49.74	
Mean turnover 2011, million €		€ 7.6		€ 14.3		€ 9.5		€ 9.3		€ 27	
Average number of patents per firm, 2011		0.03		0.51		0.13		0.27		0.79	
Sum of R&D expenses 2011, million €		€ 0.00		€ 90.2		€ 0.00		€ 0.68		€ 626.84	

(Source: ORBIS, Bureau van Dijk; WIBIS Steiermark, Kärnten)

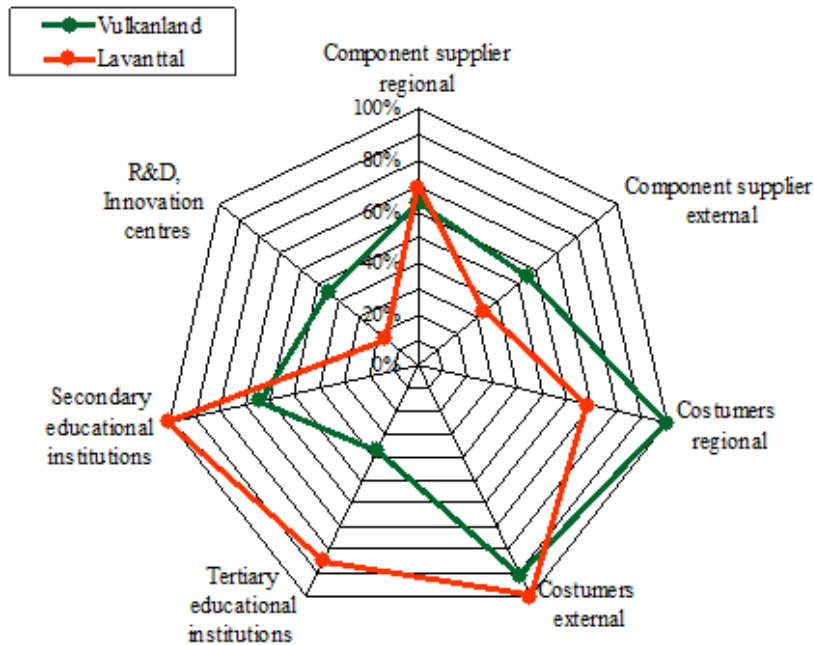
# ○ Summary of the empirical findings from the ORBIS database

- Low representativity (10%-20%) – careful interpretation required
- Deviation in size class from official statistics
- Additional insights for turnover, patents, R&D:

	<b>Styrian Vulkanland</b>	<b>Carinthian Lavanttal</b>
<b>Size classes (number of employees)</b>	<i>Underrepresentation</i> of smallest size class (below 10 employees); <i>overrepresentation</i> of larger size classes	<i>Underrepresentation</i> of smallest size class (below 10 employees); <i>overrepresentation</i> of larger size classes
<b>Mean number of employees</b>	<i>below</i> Austrian mean / <i>below</i> corresponding NUTS 2 mean	<i>below</i> Austrian mean / <i>above</i> corresponding NUTS 2 mean
<b>Mean turnover</b>	<i>below</i> Austrian mean / <i>below</i> corresponding NUTS 2 mean	<i>below</i> Austrian mean / <i>above</i> corresponding NUTS 2 mean
<b>Average number of patents per firm</b>	<i>below</i> Austrian / NUTS 2 average (even <i>lower</i> than Carinthian Lavanttal average)	<i>below</i> Austrian / NUTS 2 average
<b>R&amp;D expenses</b>	<i>none</i>	<i>none</i>



# ○ Potentials for co-operation



(Source: own calculation based on firm survey)

## Suppliers:

- Most of the enterprises cooperate with regional component suppliers
- To a lesser degree resources are often not able to meet the demand of regional producers

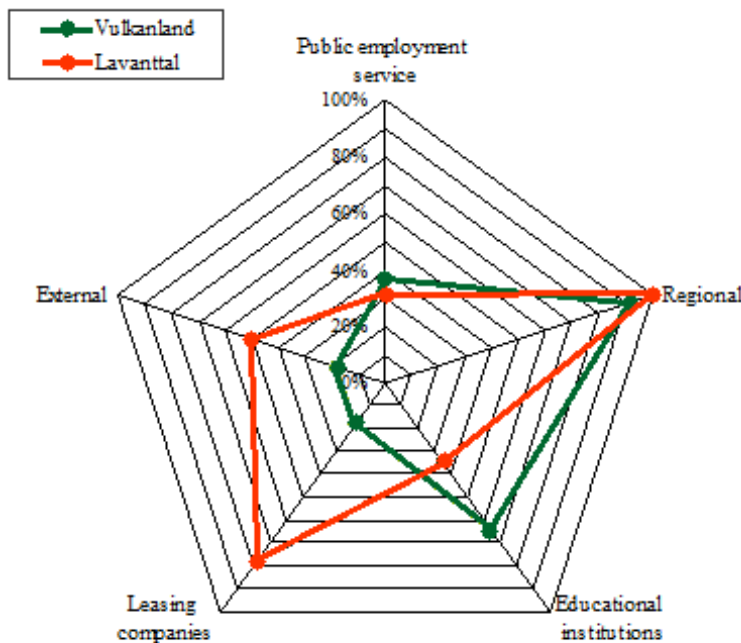
## Customers:

- Styrian Vulkanland: Focus mainly on the regional and Austrian market (foodstuff, textile and furniture industry)
- Carinthian Lavanttal: Higher export intensity of metal processing industry

## Knowledge co-operation:

- Only sporadic co-operation with R&D centres in both regions
- Carinthian Lavanttal: increased co-operation with secondary and external tertiary educational institutions

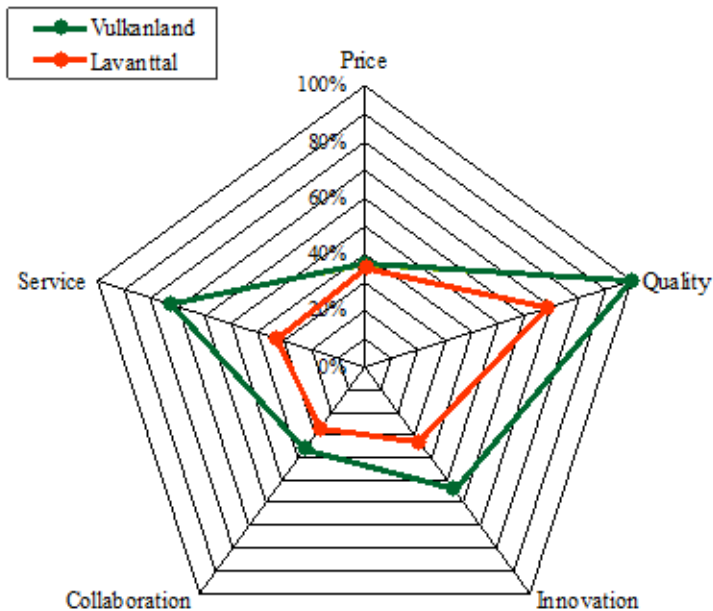
# ○ Potentials for the labour force



- Both regions rely heavily on regional skilled labour supply
- Most of the firms rely on internal education of trainees and employees
- The supply of qualified labour within the region is restricted
- Leasing companies are an important source of labour in the Carinthian Lavanttal
- Styrian Vulkanland suffers from emigration of the regional labour force due to more attractive jobs within and around urban areas

(Source: own calculation based on firm survey)

# ○ Potentials for competitiveness



- Firms state their quality as their distinguishing competitive characteristic
- Most of the firms rely on the production of high quality products
- Price competition is less important
- In Vulkanland, firms try to provide special services (e.g. after-sale services) to customers
- Majority of firms are not innovating continuously to stay competitive
- Innovation by means of „learning-by-doing“ as well as in a project-based manner in co-operation with regional or external partners

(Source: own calculation based on firm survey)

## ○ Some tentative conclusions

- Rural areas – even of the same type (predominantly rural) – reveal differences
  - Correspond to different degrees to “stylized facts“
  - No single key target sector (as before agriculture)
  - Reveal ability to be competitive on a very high level in niche markets, high export intensity
  - Innovative activities hardly based on formal knowledge or R&D
- Yet “compensating“ – smart? – forms of behaviour:
  - Firms overcome deficiencies of a lacking knowledge base by
    - deepening the co-operation with secondary education institutions
    - “learning-by-doing“ as well as by employing skilled and educated workers
  - Borrowing size:
    - Establish co-operation with transregional R&D and tertiary education institutions
    - Building production networks with firms
  - Regions built up an internal as well as external regional image and a “sense-of-belonging“ in order to direct actors towards a common goal and to expand the innovative milieu
- Smart is a many-splendored strategy

## ○ Further steps

- Contact with local stakeholders
- Extended analysis of ORBIS micro-data of firms
- Enlarged survey
- Comparison with other European case studies within the TASTE project
- Lessons to be learned from endogenous activities
- Ideas for nationwide and European projects and programmes

# Thank you!

Any “smart“ questions?