Competitiveness Enhancement and Smart Specialization Policies in the Romania West Region

SUMMARY OF RESEARCH AND DISCUSSION OF INITIAL FINDINGS

World Bank

Timisoara, 26 November – 5 December, 2012

Agenda for the presentation

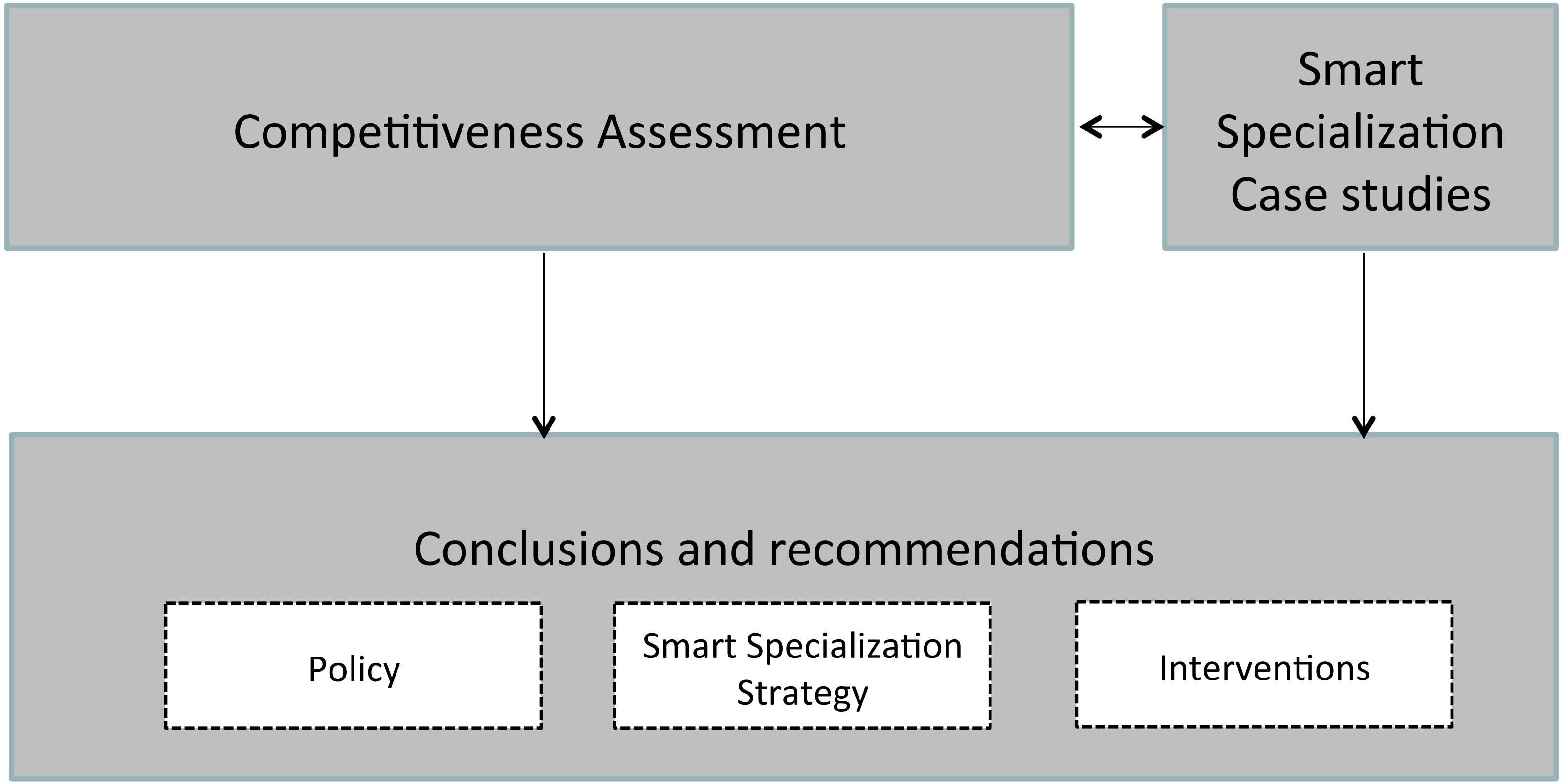
- Introduction
- Summary of overall regional performance
- Who is doing well in the region?
- What are the challenges / issues for investigation?
- Appendix – some additional details on:
  - Strategic sectors
  - Counties

1. INTRODUCTION

Objective: Identify policy measures and interventions that can enhance the West Region's competitiveness

- In particular, policy measures that are able to:
  - Enhance the growth potential of the region;
  - Facilitate the expansion of the region's exports; and
  - Expand the range of products and services exported and upgrade the quality and value added of existing product.s

Analytical framework



Activities

- Activity 1: Territorial Assessment
- Activity 2: Economic Geography Assessment
- Activity 3: Trade Competitiveness Assessment
- Activity 4: Logistics and Transport Infrastructure Assessment
- Activity 5: Competitiveness Diagnostics
- Activity 6: Sector and Smart Specialization case Studies
- Activity 7: Final Report

The discussion today will focus on activities 1,2,3, and 5

Status and timeline

- All activities underway
- Majority of descriptive desk research completed
- *November-December*: first field research mission
- *December-January*: Diagnostic analysis
- *February*: follow-up field research and presentation of results for Competitiveness

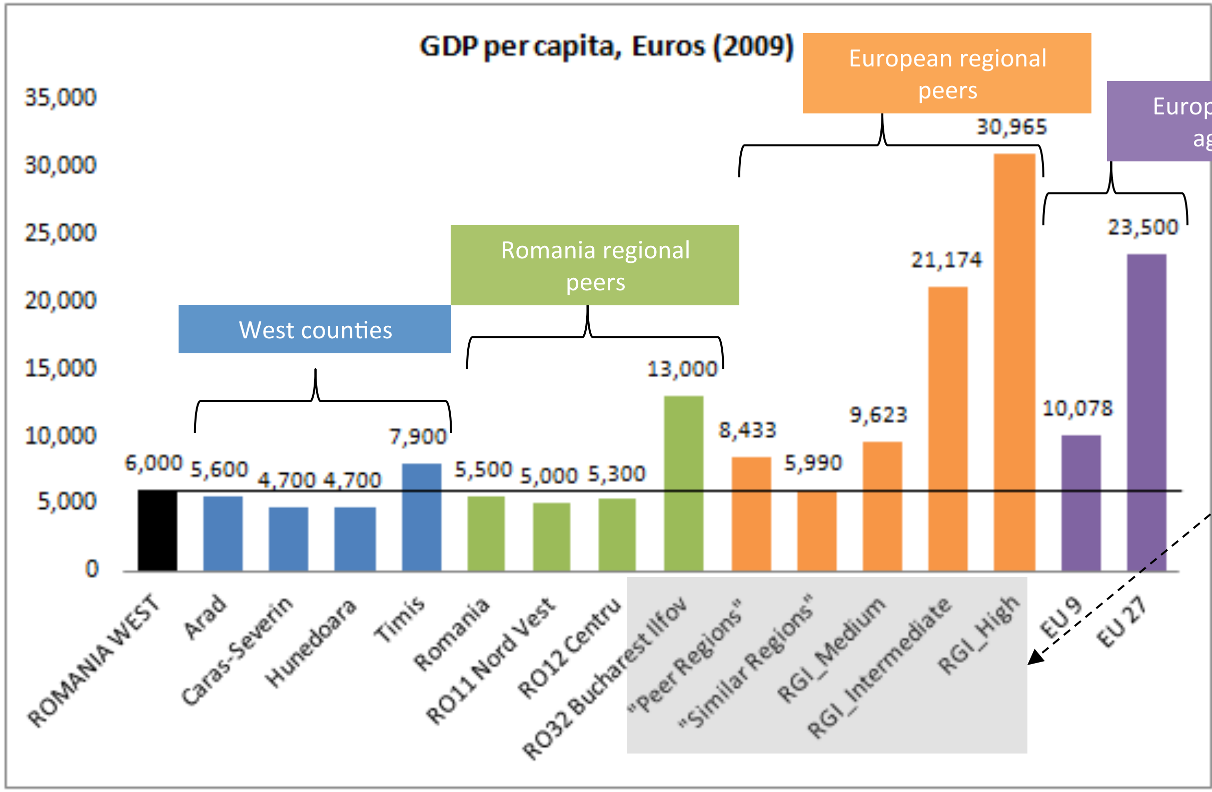
Today's discussion

- Informal presentation of some of the initial research and findings related to the Competitiveness work
- Discussion of hypotheses, key questions, and issues for further analysis

2. SUMMARY OF OVERALL REGIONAL PERFORMANCE

- Macro picture of the region

A leading region in Romania, but still far below European average levels

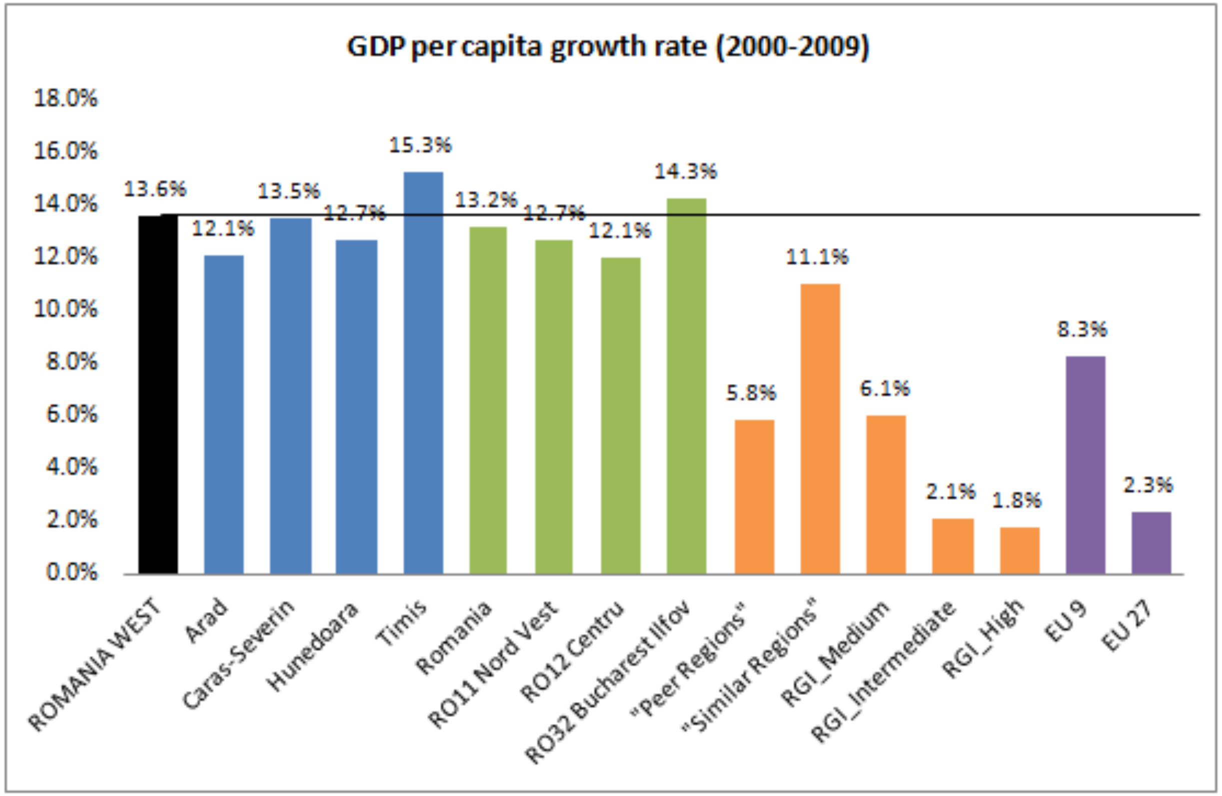


- "Peer Regions": Aggregates peers as defined by ADR West: PL 41, 42, 43, 51, 52; HU 21, 22, 23; CZ 02, 03, 04
- "Similar Regions": Aggregates regions based on 10 European regions with most similar economic structure (as per 2010 "Beyond Ourselves" regional study: RO 11, 12, 22, 31, 44; BG 34, 42; SK 03, 04; CZ 06
- "RGI": Aggregates regions as per their classification in the European Regional Competitiveness Index (West region classified as "Medium")

** Note "EU-9" aggregates 10 "new member states" excluding Romania

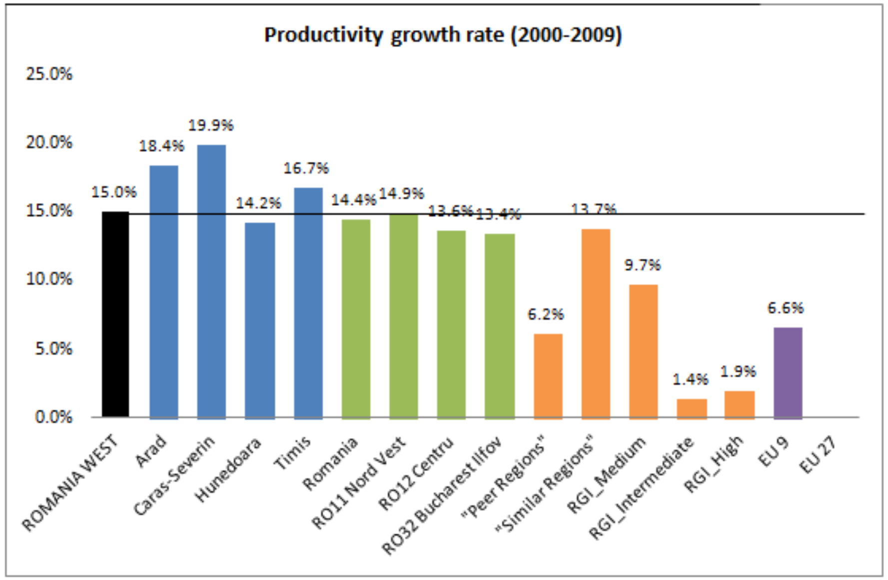
- Leading region behind Bucharest, but still at 25% of EU-27 and 60% the average of new member countries
- Region itself **highly unequal**, with Caras-Severin and Hunedoara at only 60% level of Timis

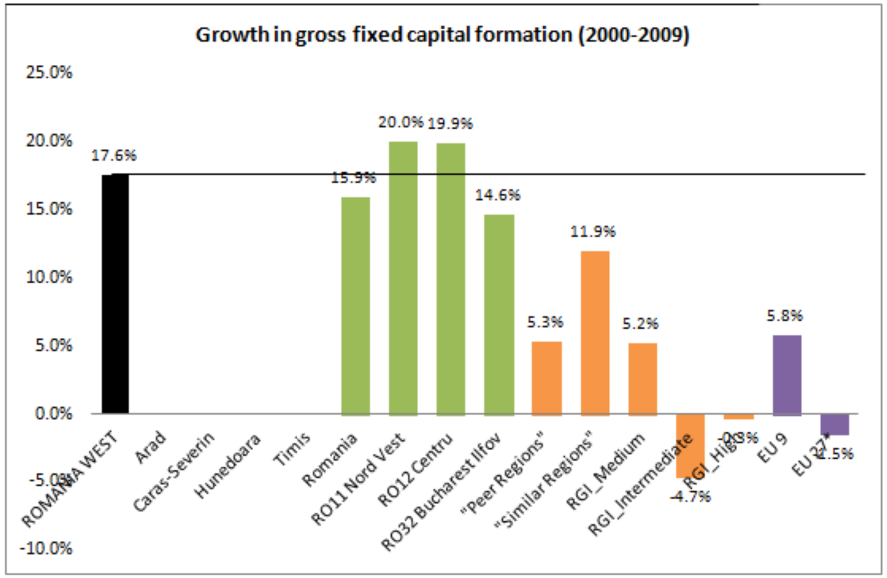
Convergence is happening



- Region growing faster than all comparators with the exception of Bucharest
- Again, Timis leading the way – figures nationally suggest **growing importance of city-regions**

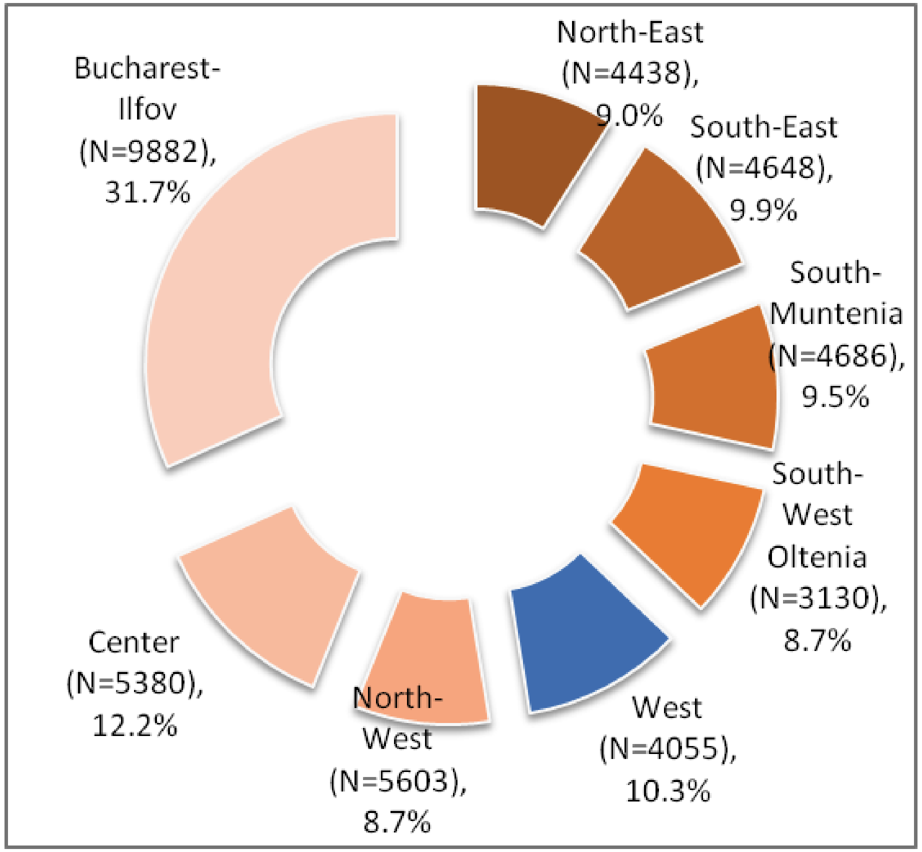
Due to productivity catch-up





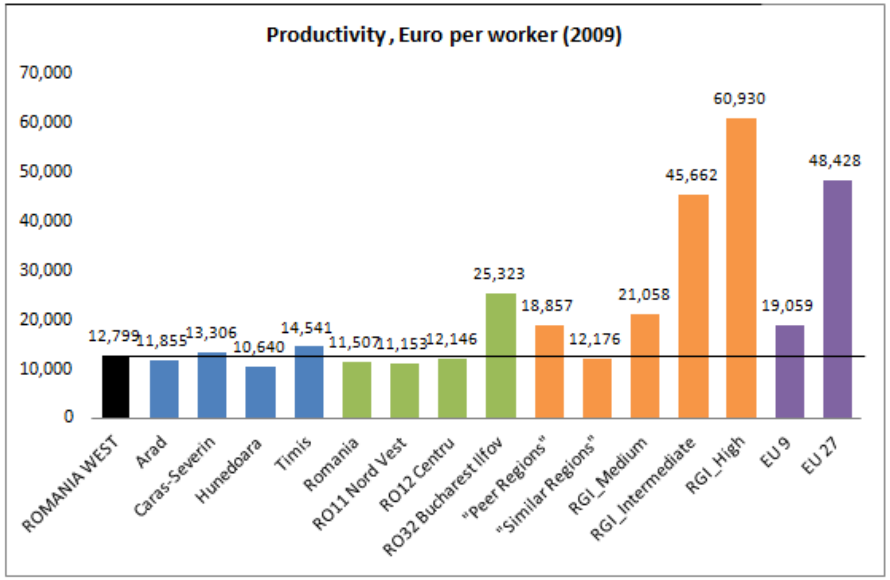
- Growth in labor productivity in the region higher than in all peers
- Region accounts for 10.3% of TFP growth in Romania over 2005-2010 period (3rd largest contributor behind Bucharest and Center)
- Driven in part by relatively high investment rates by firms

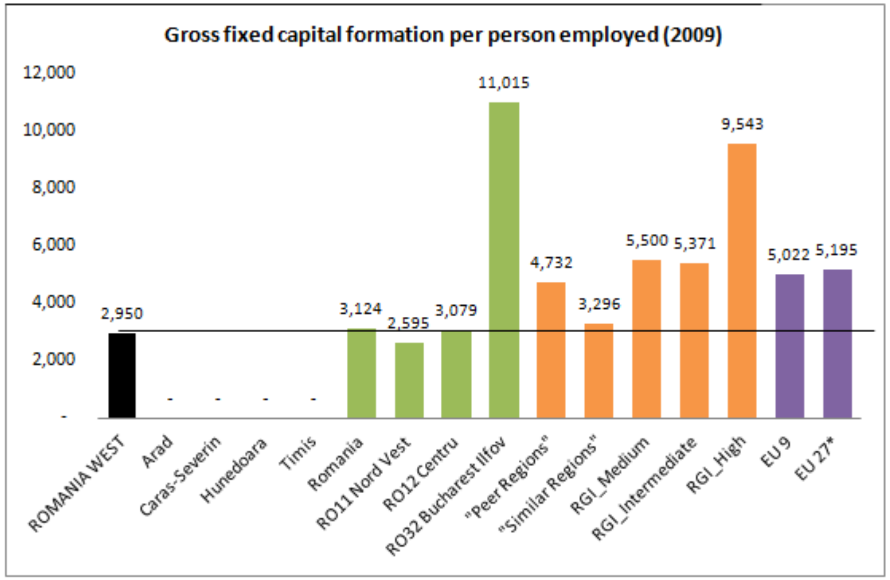
Which makes the region the third highest contributor to productivity growth in Romania (2005-10)



- 10.3% of total factor productivity growth in Romania over 2005-2010 due to the West Region

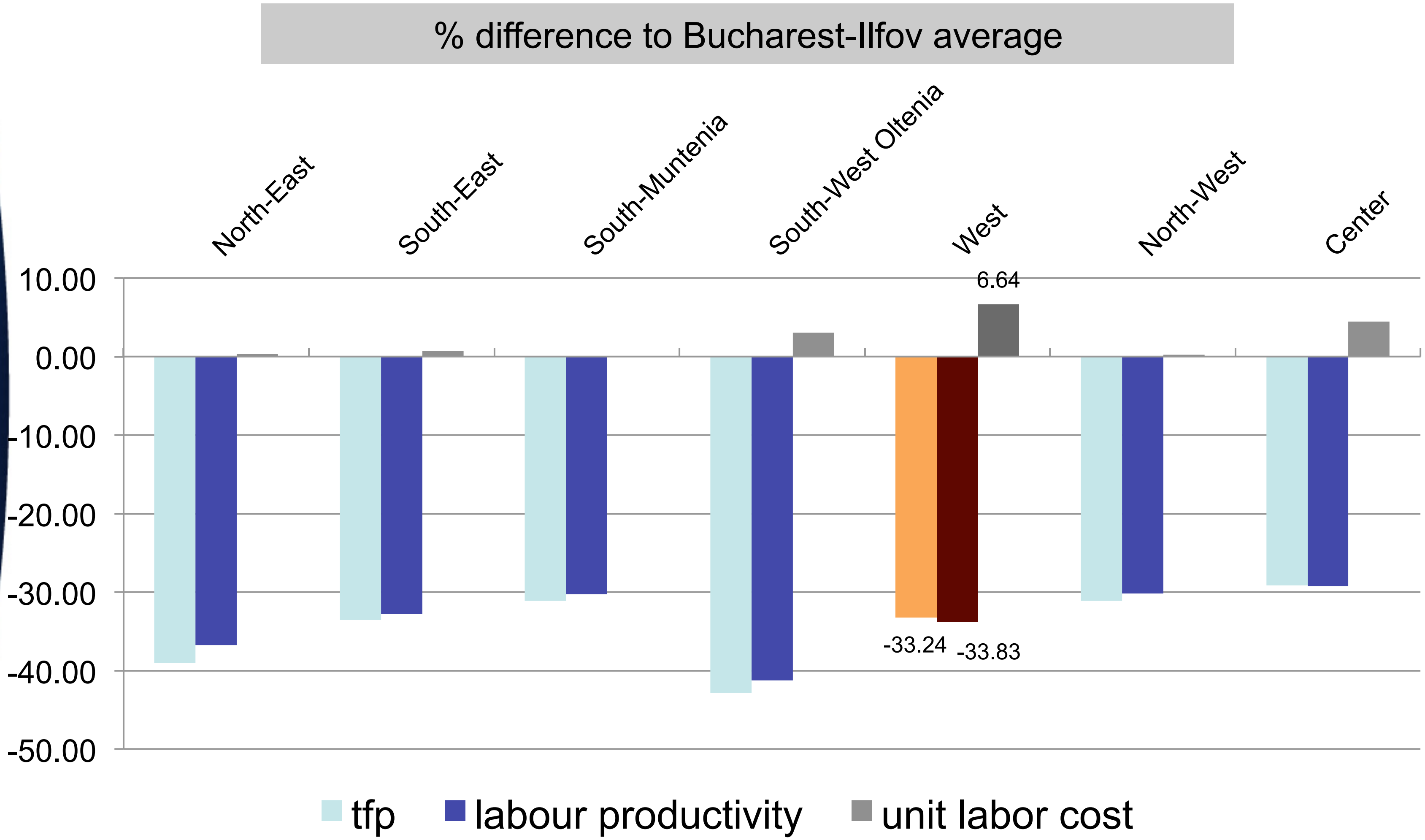
With large room for further improvement (1)





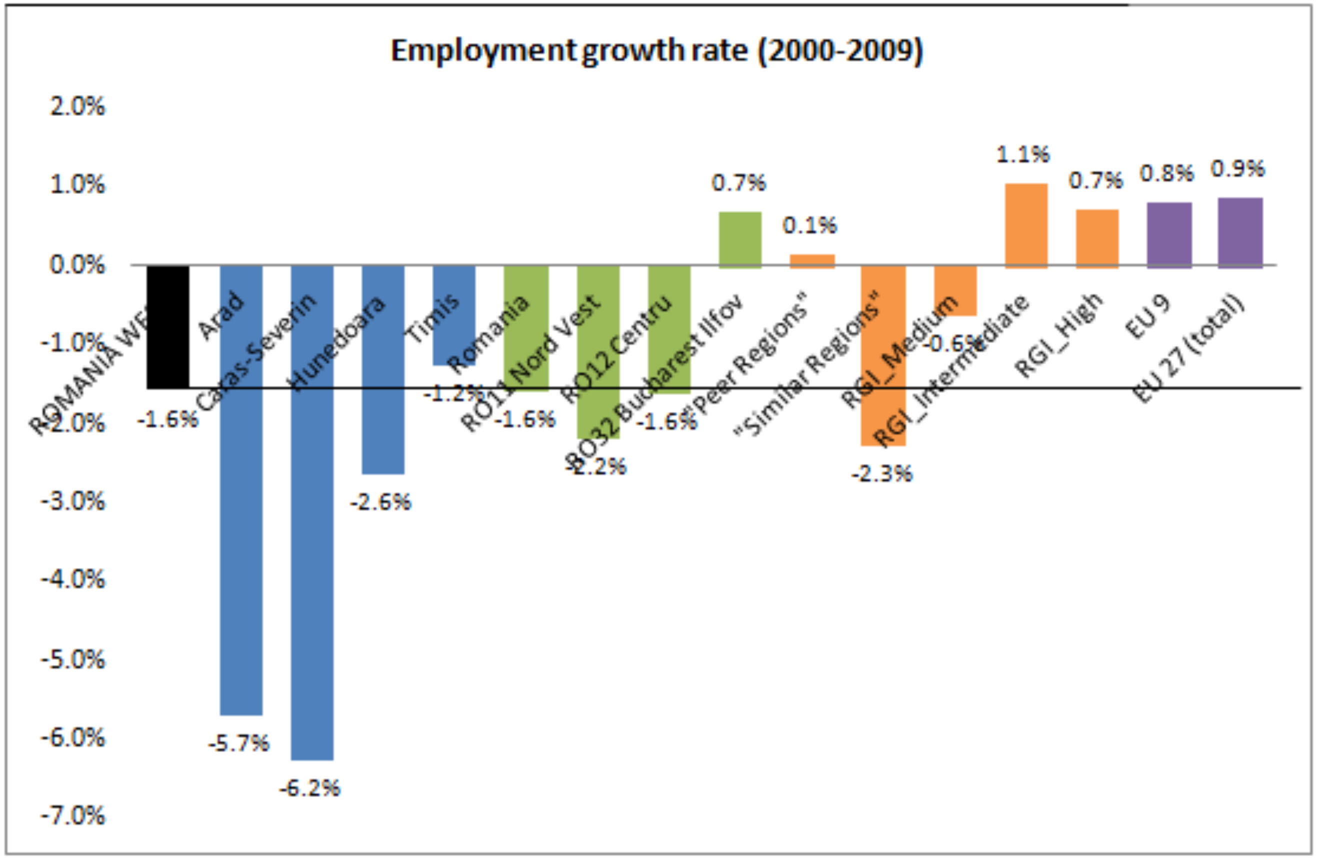
- Productivity levels and investment are still low by European standards

With large room for further improvement



Results from OLS regression of (TFP, labour productivity and ULC) on region dummies in 2010. Sector fixed effects are included

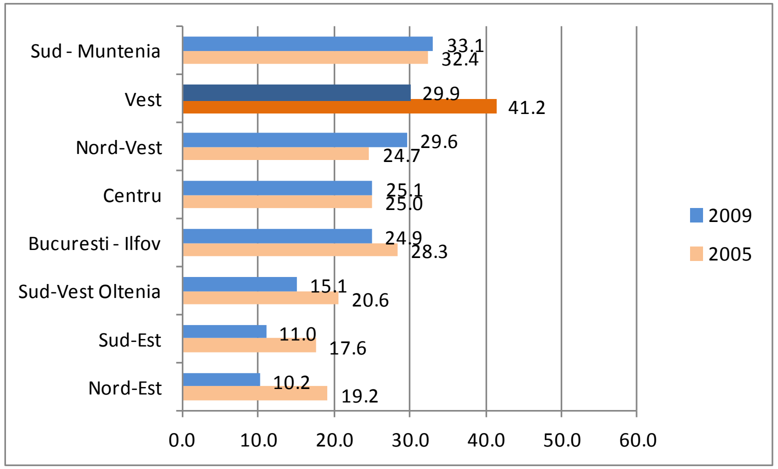
Productivity catch-up may explain weak employment growth

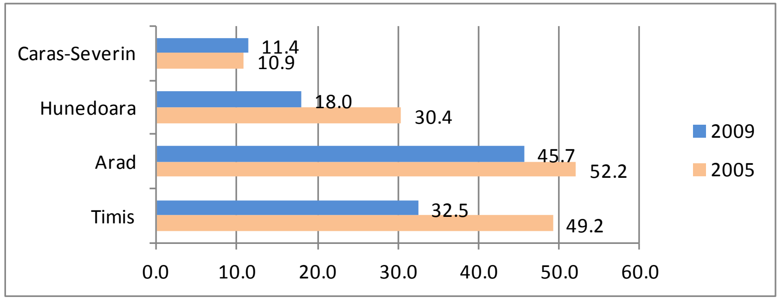


- Even in the boom period of 2000-07 employment declined in the region
- Again, significant sub-regional variation

Trade intensive region

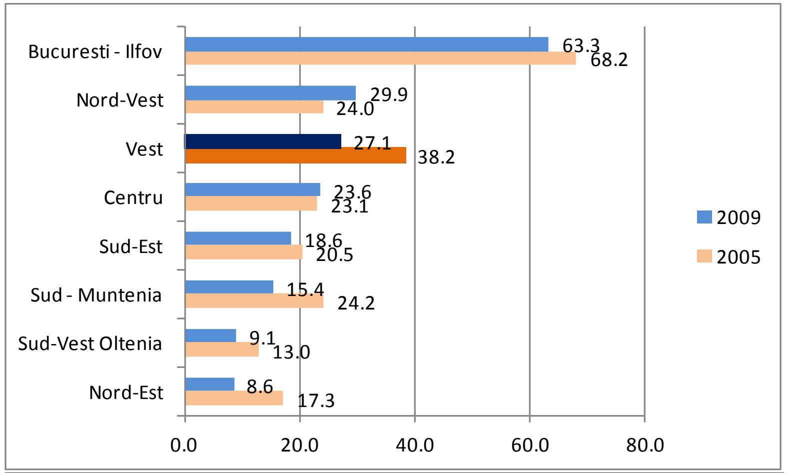
Exports as % of GDP (2005 and 2009)

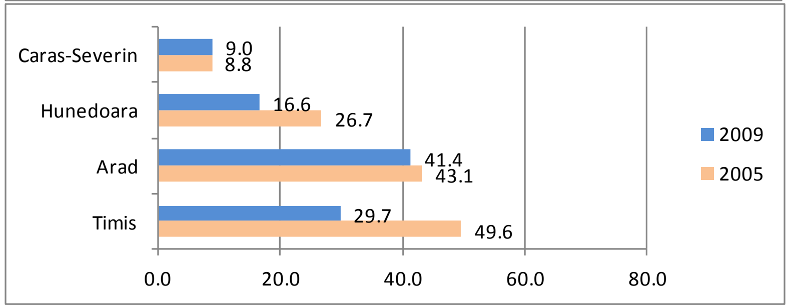




Source: INS

Imports as % of GDP (2005 and 2009)

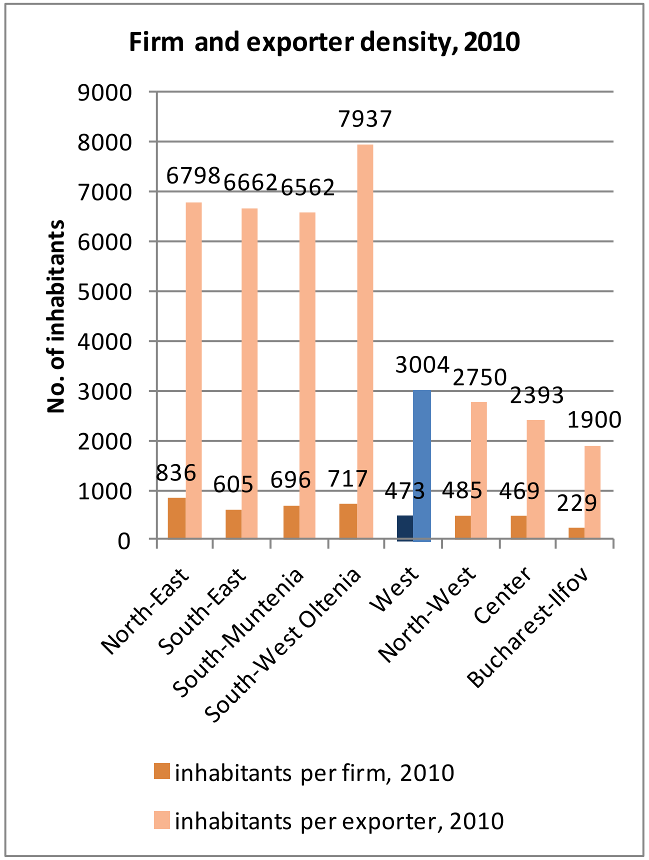


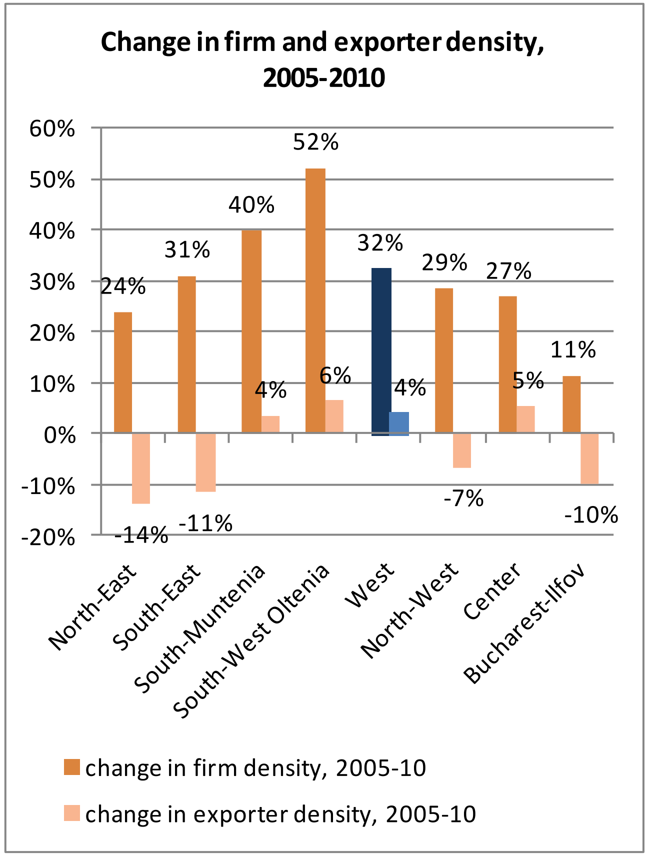


Source: INS

- But dramatic differences within the region

Among the leaders in terms of entrepreneurship

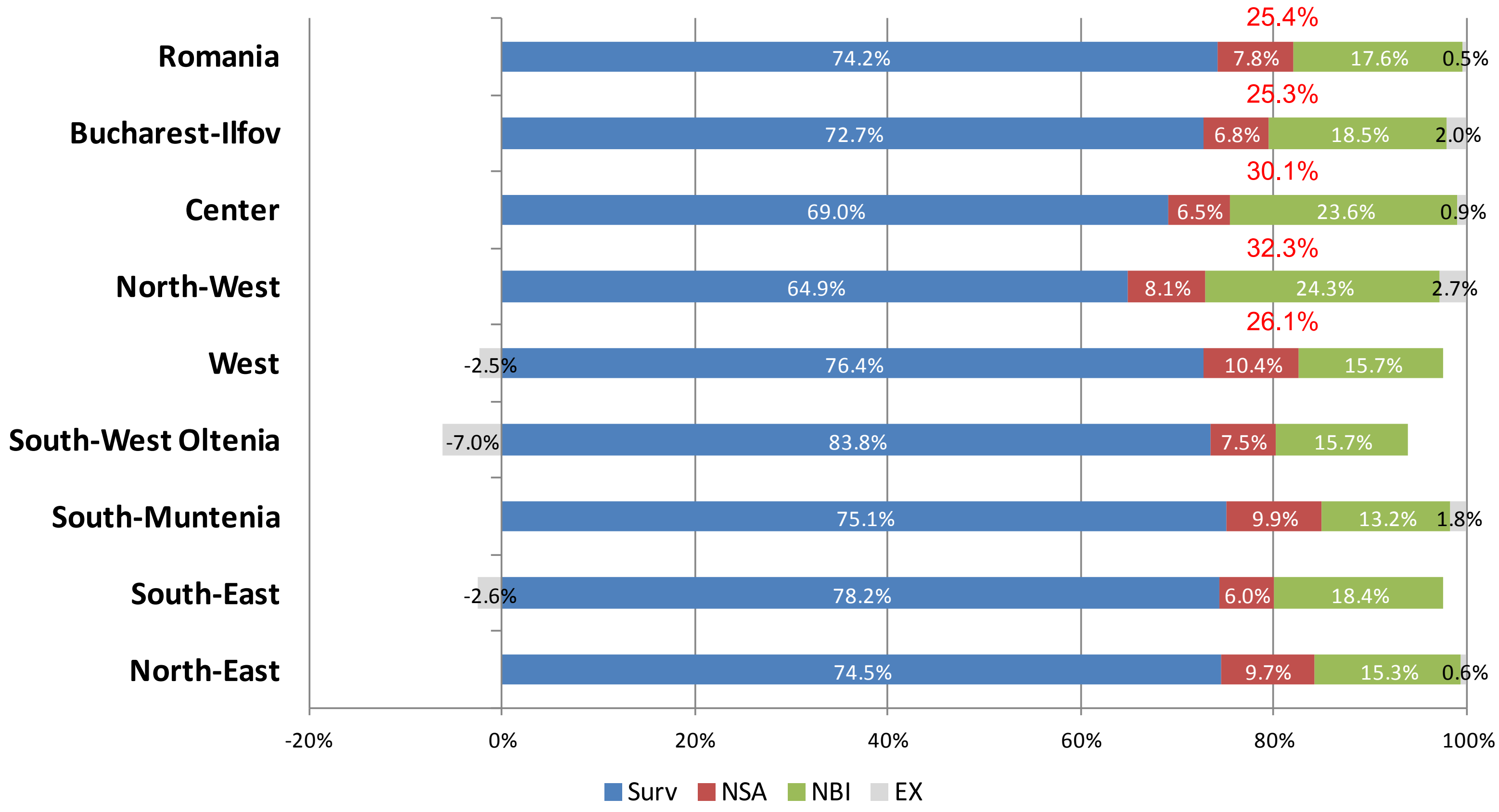




- In 2010, the West Region had the third highest firm density and the fourth highest exporter density of Romania: one firm every 473 inhabitants and one exporter every 3004 inhabitants.

- The firm density has increased most compared to peer regions since 2005, and the increase in exporter density is the third highest of the country

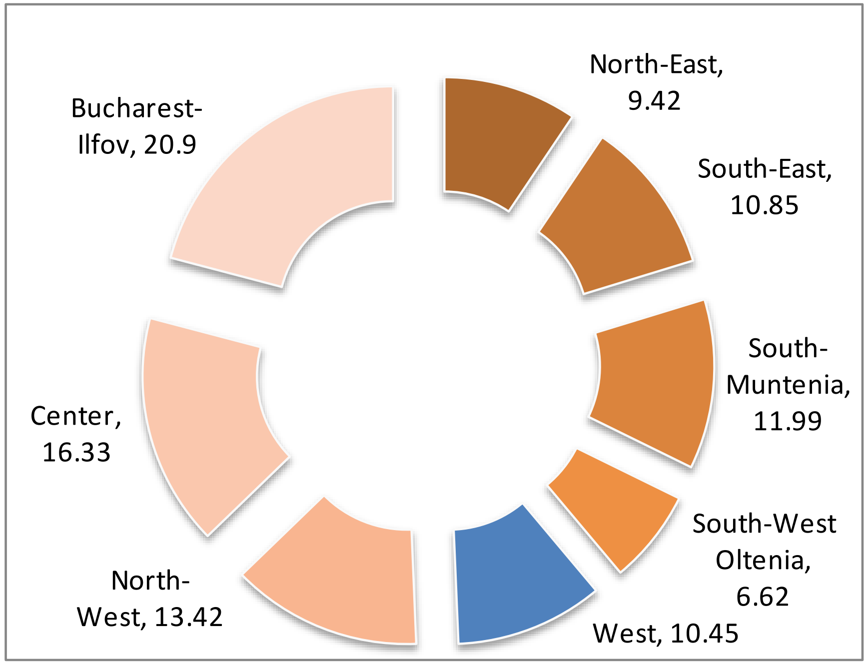
Strong contribution to productivity growth (TFP) from dynamic SMEs, but still trailing Center and NW…



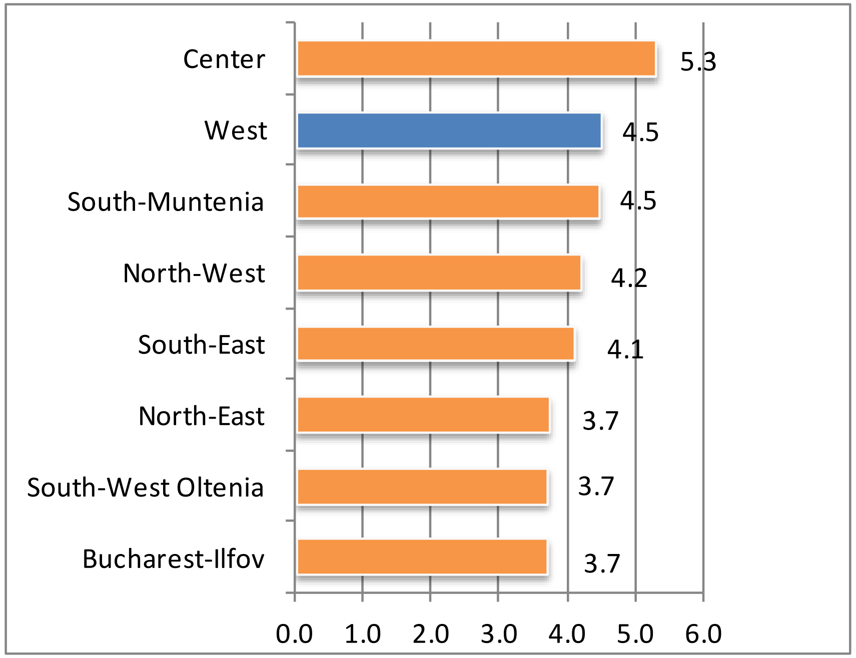
- Surv = Incumbents
- NSA = Start ups
- NBI = Firms that grew above 20 employees
- EX = Exits
- Firm distribution in the West Region surv=41%, NSA=10%, NBI=26%, exit=24%

…and a similar picture holds for 'gazelle' firms

Distribution of gazelles in Romania (2010)



Share of gazelles among all firms, by region (2010)

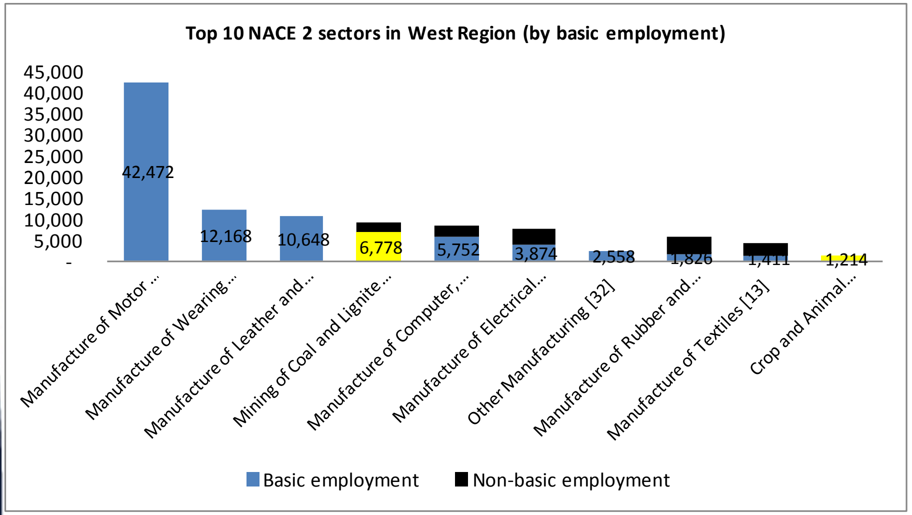


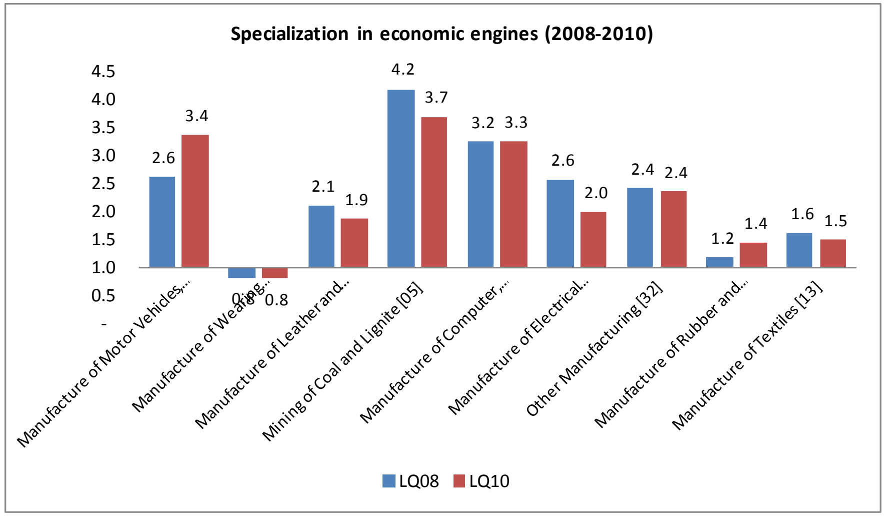
- Gazelles are fast-growing companies, which maintained 25% expansion of both employment and turnover over 3-years. Potential large employers and wealth creators of the future.
- Gazelles are quite scarce in most economies, comprising about 5 to 10% of the total. In the West Region, only 4% of the firms are gazelles.

3. WHO IS DOING WELL IN THE REGION?

- Sectors; firm-types; market orientation; location

Region specialized in manufacturing with automotive dominating

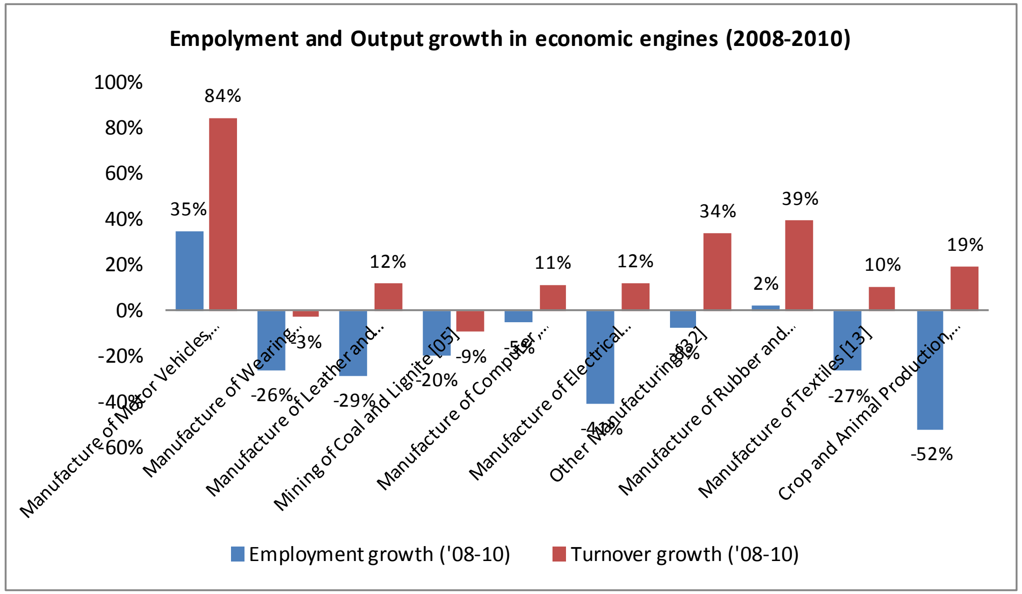




Source: SBS

- Export-oriented manufacturing sectors are the primary economic engines
- Three distinct types: automotive; ‘traditional’ light industry; electronics
- Automotive by far the largest employer and alone accounted for the vast majority of output growth in the region between 2008 and 2010
- Other than apparel, West region is specialized (LQ>1) in all of its economic engines

Automotive also the dominant growth engine and the main export sector (1)

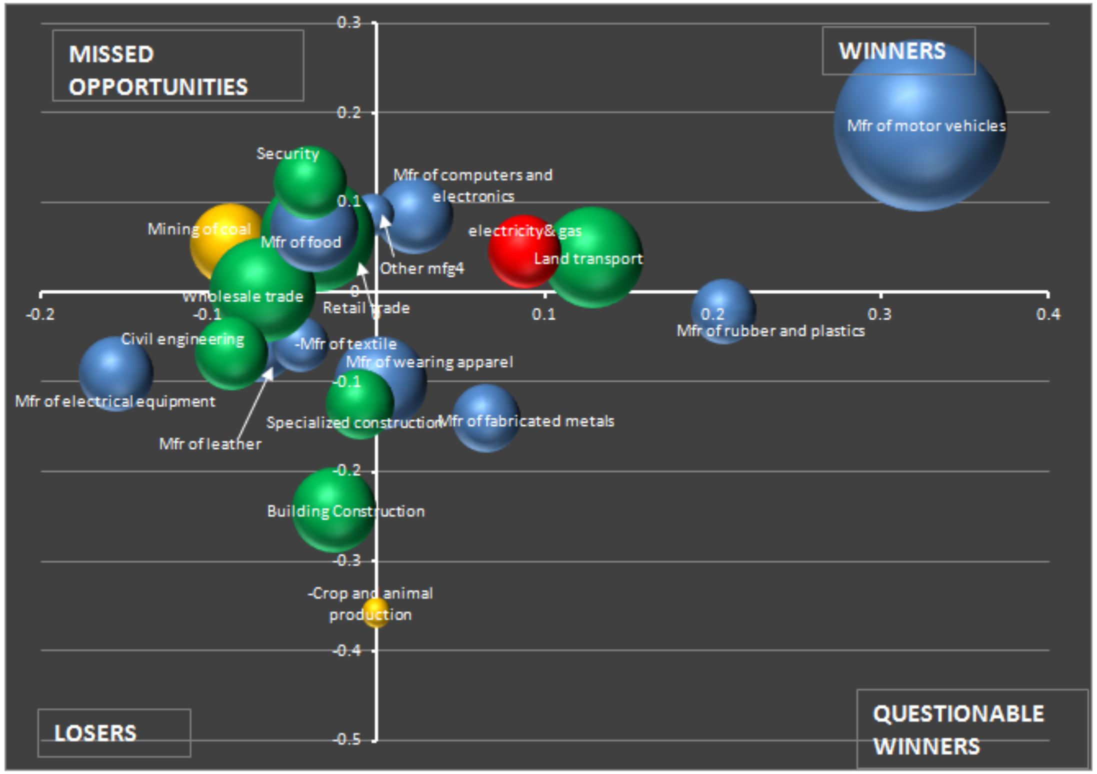


Regional export shares by strategic sectors (%, 2008-2010)

	2008	2009	2010
Textile	14,2	15,1	13,4
Auto	36,6	42,3	43,8
ICT	11,2	9,5	9,2
Construction	0,1	0,1	0,1
Agro/Food	0,4	0,5	0,5
Tourism	0,1	0,0	0,0
Energy	0,0	0,0	0,0
Health	0,0	0,0	0,0
Rest	37,5	32,5	33,0
Total	**100**	**100**	**100**

- Generally (slow) growth in output across main sectors, with employment declining
- But motor vehicle sector extremely strong performance – 84% turnover growth (v 52% Romania average) and 35% employment growth (v 2% Romania average)
- The auto sector also dominates exports, with 44% of total exported value in 2010

Automotive also the dominant growth engine (2)



Note: Figure presents Shift-share of West region v Romania at NACE 2 ; top 20 'economic engines' shown, including largest employment generators; bubble size reflects 2010 sectoral employment in West region; color reflects broad sector (yellow=primary; blue=manufacturing; red=utilities; green=services)

- Motor vehicles clearly stands out as a major winner for the region
- Computers and electronics also strong, with unexploited potential
- Traditional sectors like apparel and leather in decline, but still very important
- Food sector performance weak despite national growth
- Relatively weak performance in services, with significant exception of transport

Large non-basic sectors performing less well

Top non-basic sectors		employment	Employment growth ('08-10)	Turnover growth ('08-10)	LQ08	LQ10	Avg sector wage v West avg	Avg wage v national sector avg	Avg wage growth '08-10 (right
47	Retail Trade, Except of Motor Vehicles a	18,404	-13%	2%	0.85	0.80	0.77	0.89	13%
46	Wholesale Trade, Except of Motor Vehicles and Motorcycles [46]	15,834	-23%	-16%	0.76	0.68	0.93	0.79	13%
49	Land Transport and Transport Via Pipelines [49]	14,482	0%	15%	0.88	0.99	0.93	0.86	1%
10	Manufacture of Food Products [10]	12,168	-13%	-1%	0.82	0.77	0.15	11.80	15%
41	Construction of Buildings [41]	10,157	-43%	-32%	0.92	0.86	0.82	0.94	-1%
42	Civil Engineering [42]	7,561	-32%	-17%	0.95	0.90	1.13	0.98	11%
80	Security and Investigation Activities [80	7,492	-8%	20%	0.71	0.73	0.52	1.03	29%
35	Electricity, Gas, Steam and Air Conditio	7,339	-3%	-4%	0.83	0.85	2.07	1.00	26%
43	Specialised Construction Activities [43]	6,599	-30%	2%	0.93	0.91	0.85	0.89	-4%
25	Manufacture of Fabricated Metal Produ	6,465	-24%	1%	0.84	0.91	0.97	1.01	20%
52	Warehousing and Support Activities for	6,175	-1%	8%	0.95	1.05	1.62	0.99	6%

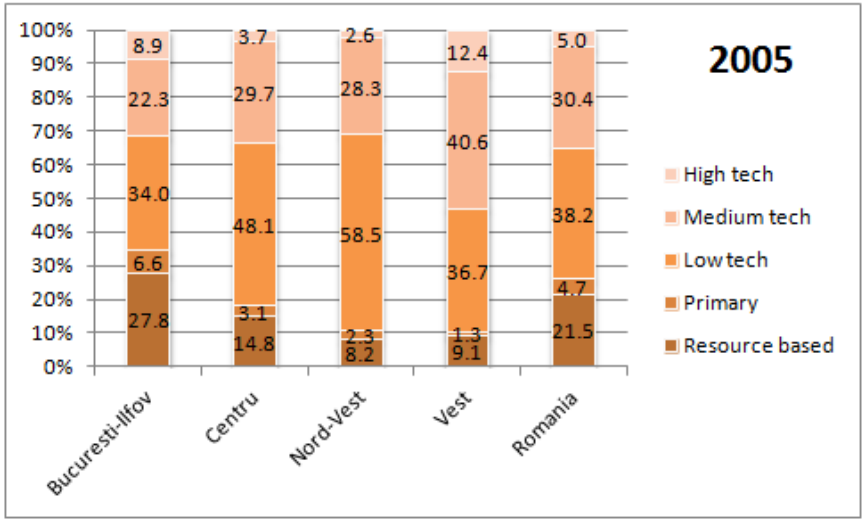
Source: SBS

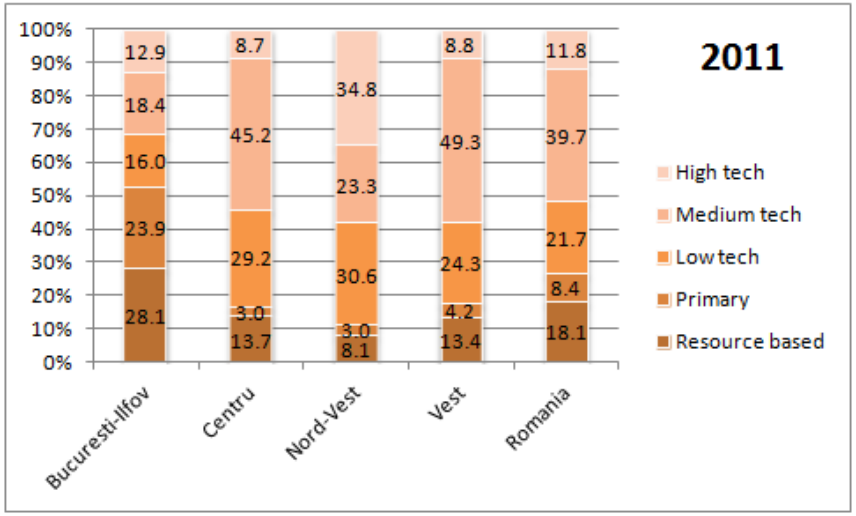
- The top non-basic sectors account for 39% of all employment in the region (together with the basic sectors, this covers >90% employment)*
- Almost all of these sectors have performed poorly in terms of output and employment growth in '08-10, even relative to Romania as a whole
  - Exceptions here: warehousing and support for transport; land transport; and fabricated metals
- How closely linked (input-output relations) are basic and non-basic sectors in the region?

* Based on the SBS

Exports specialized in medium technology, trailing Romanian peers in high tech

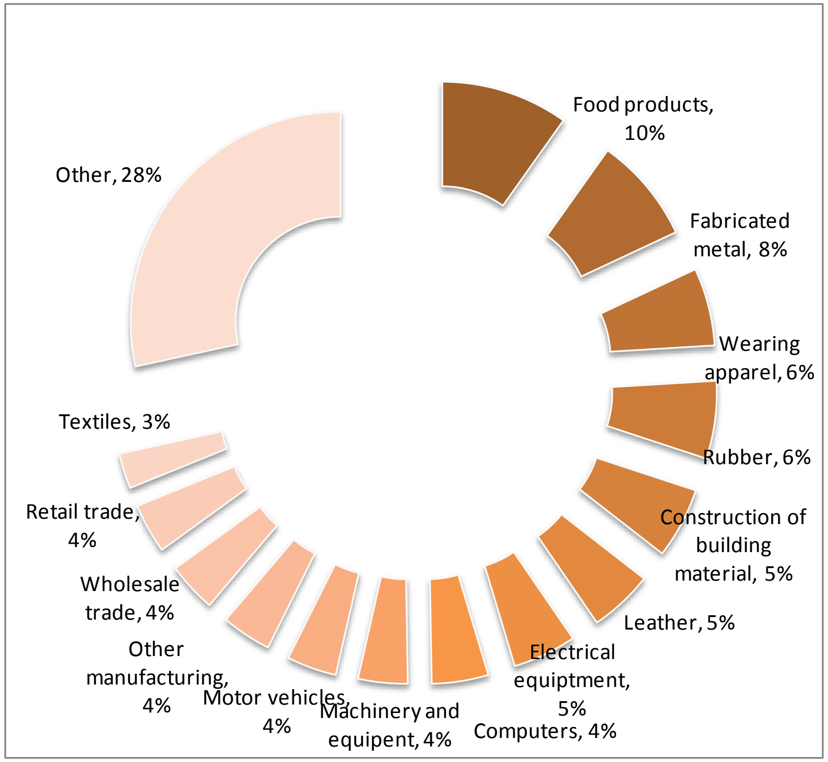
Lall classification of technological content: share of exports by category



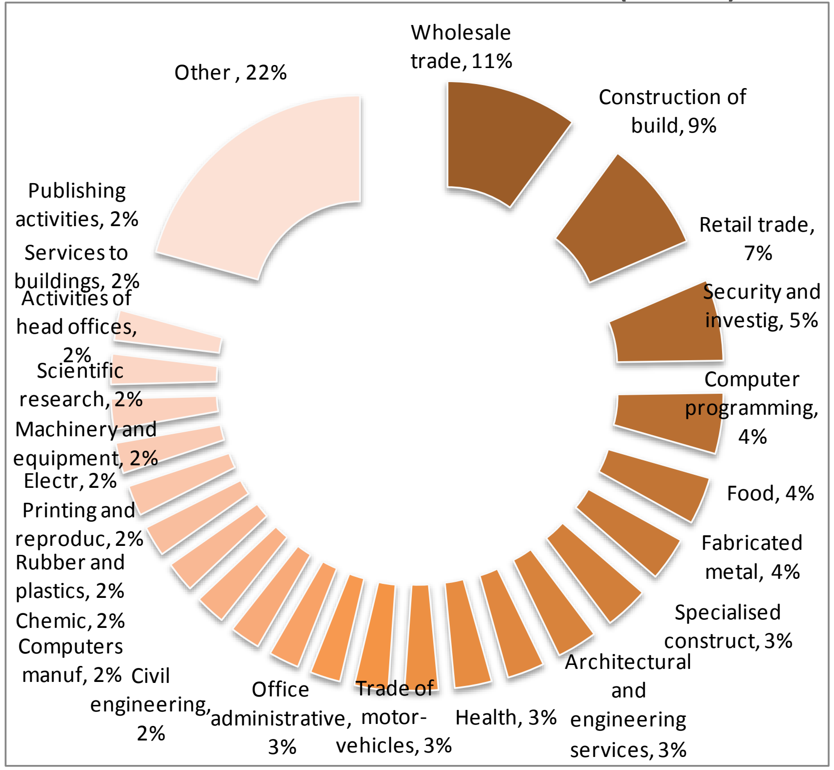


And high growth firms in the region are also concentrated in less sophisticated sectors

Gazelles in the West Region (2010)



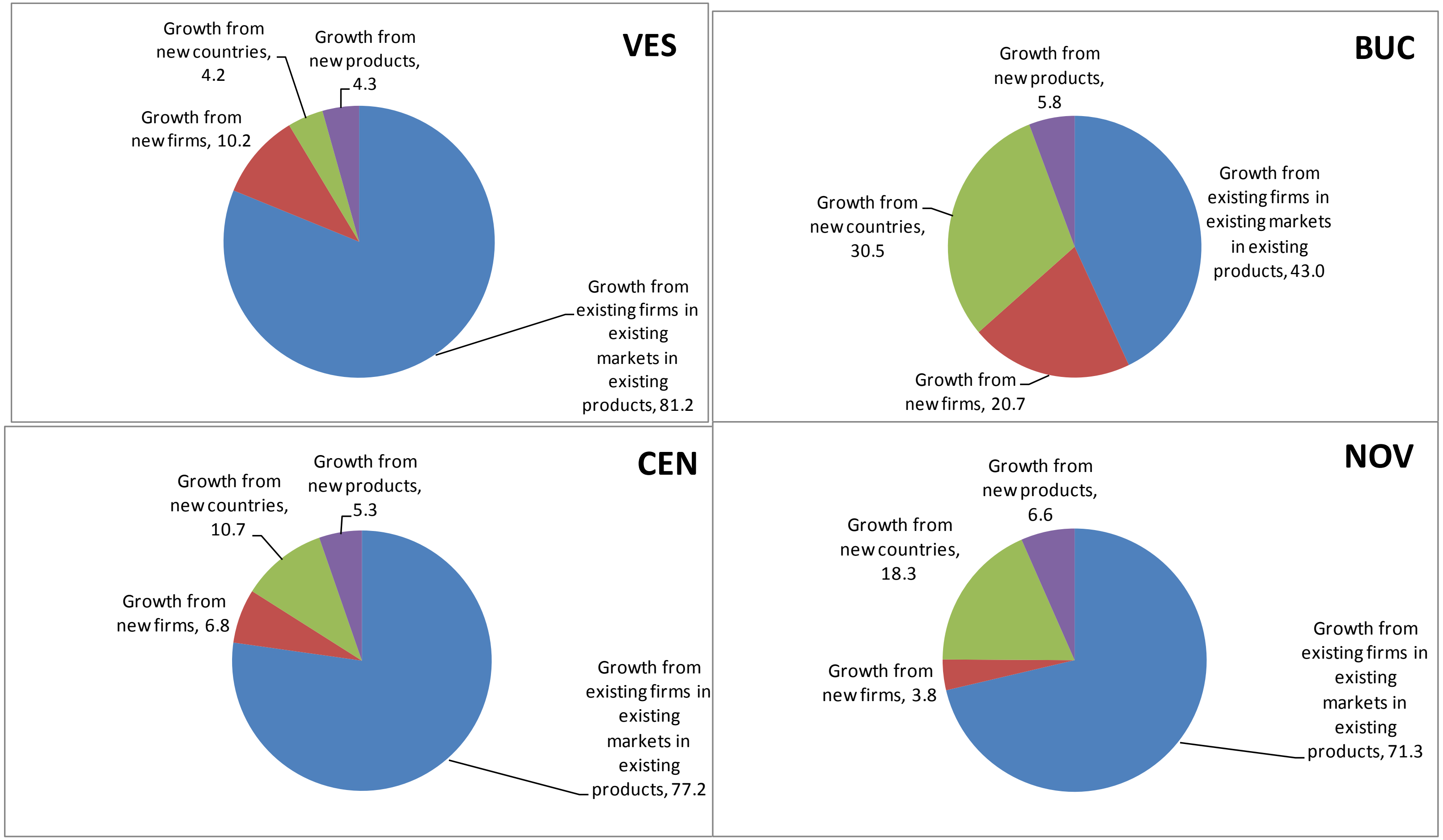
Gazelles in Bucharest-Ilfov (2010)



- No specific sectors stand out in generating high growth firms.
- Similar to West Region, gazelles in Centre and North-West regions are in less sophisticated sectors.
- Bucharest-Ilfov is the only region where the majority of gazelles are from services sectors

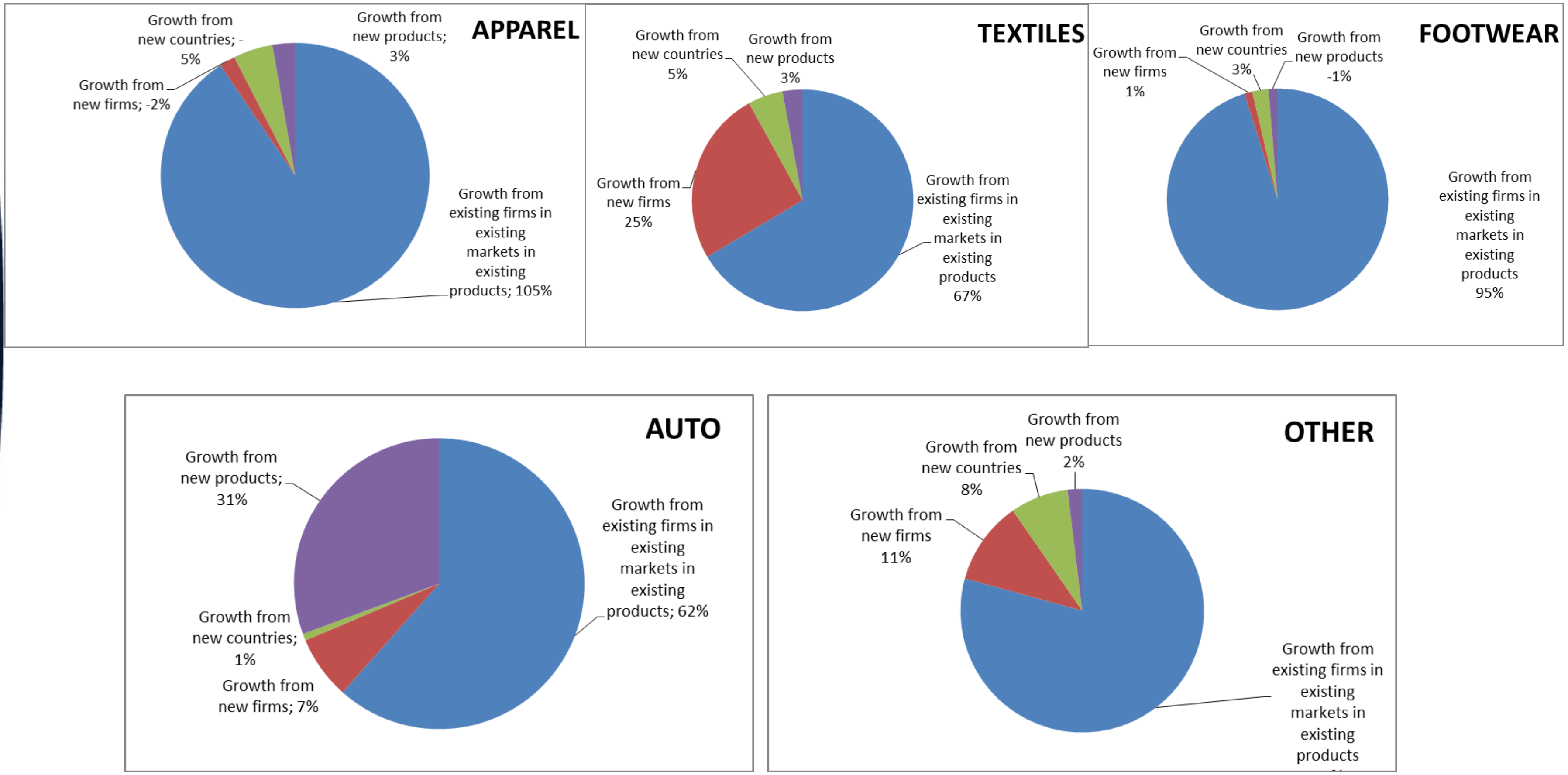
Export growth is over-reliant on the intensive margin

Export Growth: intensive vs. extensive margin (2010)



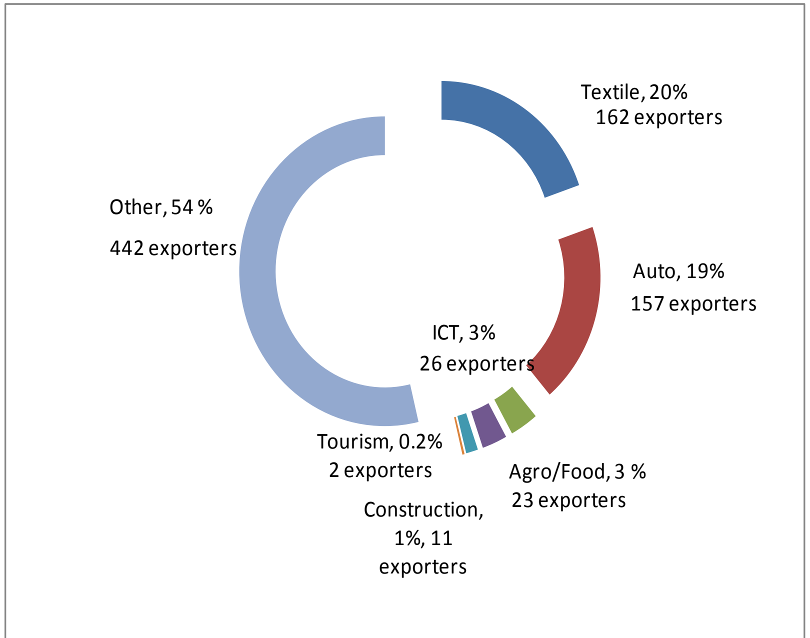
But this is not only linked to the high concentration of exporters in automotive and textiles

Export Growth: intensive vs. extensive margin (2010)

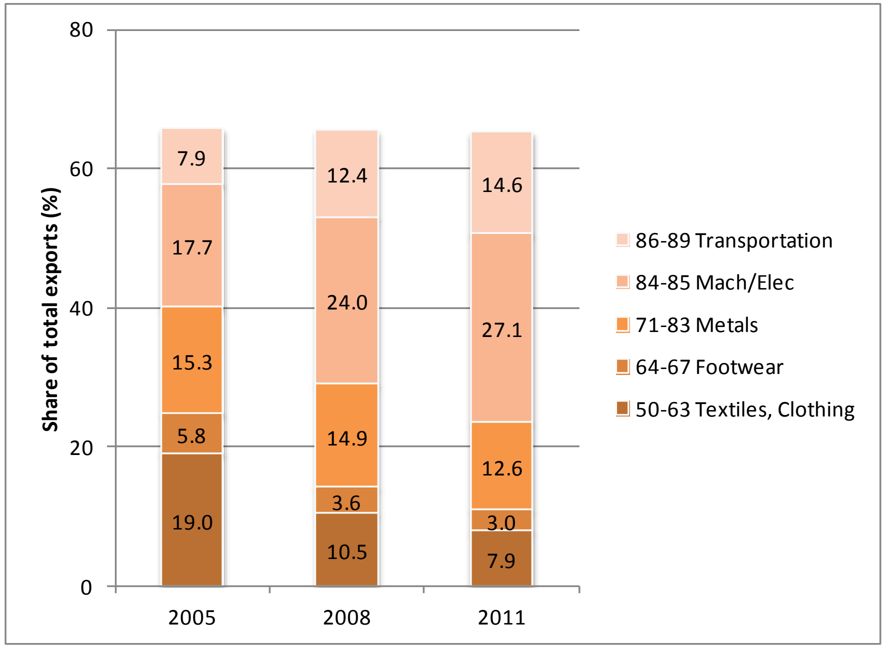


High concentration of exporters in automotive and textiles

West Region Exporters (2011)



West Region main exports in value (%)



- Textiles and auto sector account for 40% of all West Region's exporters, the other strategic sectors account for a marginal share of exporters.
- Electrical machinery is the most important sector in terms of export value (27%), followed by transport equipment (14.6%) and metals (12.6%). Textiles and footwear cover 10.9% together.
- Lack of dynamism on products and markets may be linked to value chain structures in these sectors

With products from the auto sector providing the bulk of exports (in value)

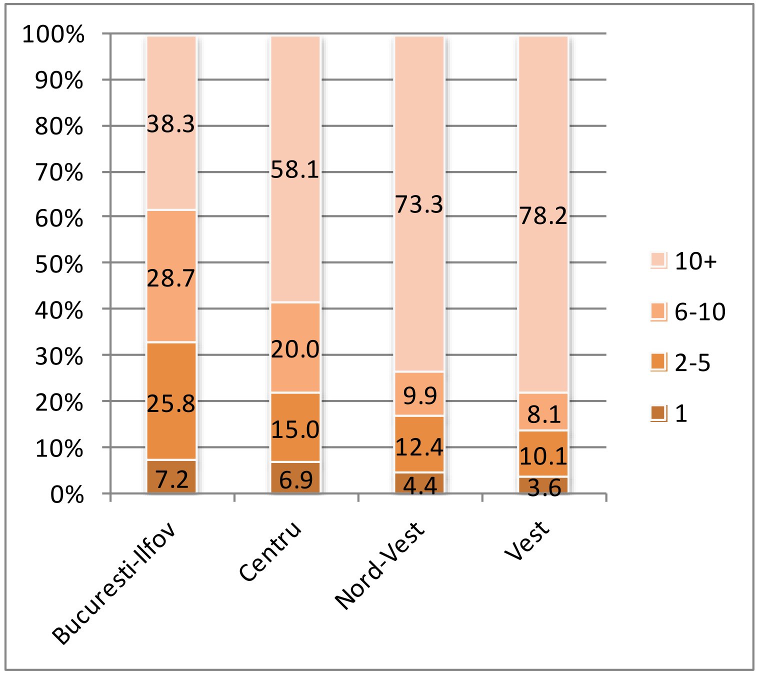
Top-10 export products, by county (2011 values)

Timis			Hunedoara		
hs6	hs6_description	%	hs6	hs6_description	%
401110	New pneumatic tyres, of rubber of a kind used o	14.2	854430	Ignition wiring sets&oth wiring sets of a kind	25.6
854430	Ignition wiring sets&oth wiring sets of a kind	8.5	851671	Electro-thermic coffee or tea makers, domestic,	12.2
870894	Steering wheels, steering columns and steering	4.5	870894	Steering wheels, steering columns and steering	5.7
853710	Boards, panels, including numerical control pan	3.4	610821	Women's or girls' briefs and panties of cotton,	4.7
940190	Parts of seats other than those of heading No 9	3.3	871200	Bicycles and other cycles (including delivery t	3.0
870899	Motor vehicle parts nes	3.1	940161	Seats with wooden frames,upholstered nes	3.0
901380	Optical devices, appliances and instruments, ne	2.9	300490	Other medicaments of mixed or unmixed products,	2.5
903180	Measuring or checking instruments, appliances a	2.7	440792	Beech (Fagus spp.) wood,sawn/chipped lengthwise	2.5
841790	Parts of industrial or lab furnaces & ovens inc	2.5	442190	Articles of wood, nes	2.0
841850	Other refrigerating or freezing chests,cabinets	2.4	940600	Prefabricated buildings	2.0
Arad			**Cara Severin**		
hs6	hs6_description	%	hs6	hs6_description	%
854430	Ignition wiring sets&oth wiring sets of a kind	17.6	854430	Ignition wiring sets&oth wiring sets of a kind	19.5
870894	Steering wheels, steering columns and steering	11.3	870839	Brake system parts nes for motor vehicles	18.2
870829	Parts and accessories of bodies nes for motor v	6.8	720720	Semi-fin prod, iron or non-alloy steel, w/ carb	11.2
854449	Electric conductors, for a voltage not exceedin	5.8	870894	Steering wheels, steering columns and steering	8.6
870899	Motor vehicle parts nes	2.9	720719	Semi-fin prod, iron or non-alloy steel, cntg by	7.4
870821	Safety seat belts for motor vehicles	2.7	721331	Bars/rods,i/nas,hr,in irreg wnd coils of circ c	4.6
940360	Furniture, wooden, nes	2.7	722490	Semi-finished products of alloy steel o/t stain	2.1
740400	Waste and scrap, copper or copper alloy	2.3	620520	Men's or boys' shirts of cotton	1.9
854441	Electric conductors,for a voltage not exceeding	2.2	441890	Builders' joinery and carpentry, of wood, nes	1.7
760429	Bars, rods and other profiles, aluminium alloye	1.8	870899	Motor vehicle parts nes	1.6

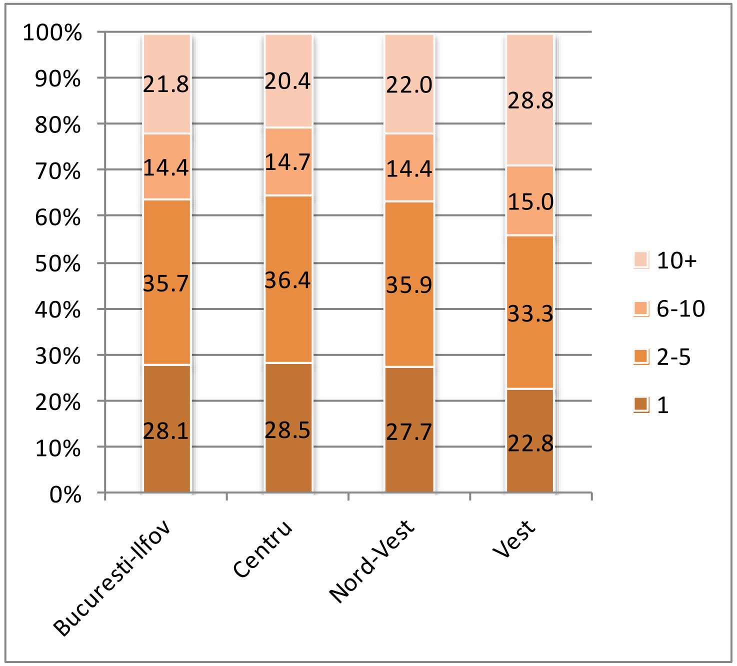
- Auto=yellow
- Textiles=orange

Diversified producers dominate exports more than in peer regions

Value of exports by number of exported products (2011, % of total)



Exports by number of exported products (2011, % of total)



- Exporters with 10 or more export products account are 24 to 33% of the total but account for 43 to 81% of exports in each of the counties.

This may be driven by large, foreign-owned firms

Number of exporters

	2008	2009	2010
big (> 250 employees)	108	92	95
mid (50 to 250 employees)	342	298	309
small (< 50 employees)	696	747	837
Total	**1,146**	**1,137**	**1,241**

Share (%) of export value

	2008	2009	2010
big (> 250 employees)	63.4	66.8	68.1
mid (50 to 250 employees)	26.5	20.7	18.3
small (< 50 employees)	10.0	12.5	13.6
Total	100	100	100

	2008	2009	2010
domestic	279	281	289
fully foreign	385	393	410
some foreign	140	129	125
N.A.	342	334	417
Total	**1,146**	**1,137**	**1,241**

	2008	2009	2010
domestic	9.2	8.6	8.2
fully foreign	78.2	78.4	80.4
some foreign	10.3	10.1	7.8
N.A.	2.3	3.0	3.6
Total	**100**	**100**	**100**

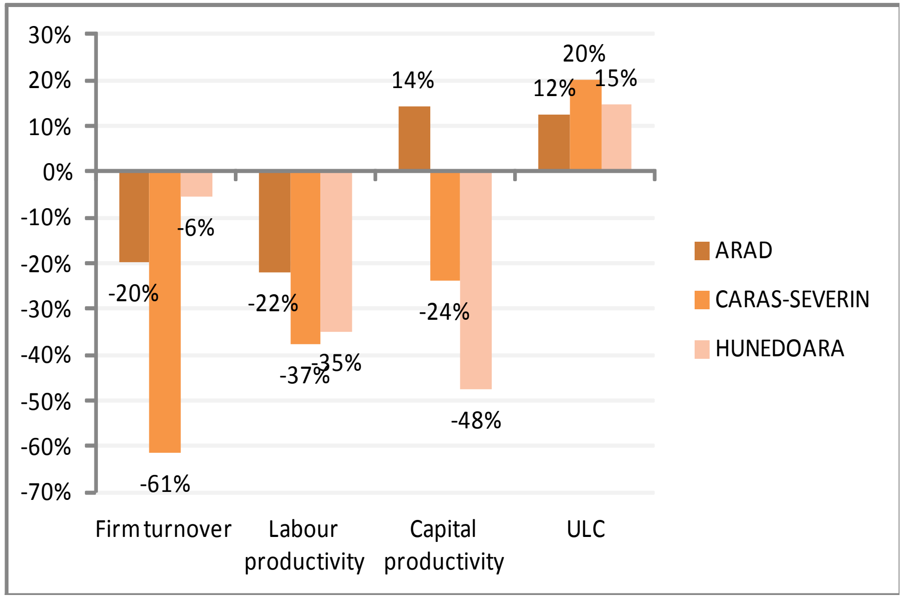
There are considerable disparities in productivity between exporters and non-exporters

TFP growth by region, 2008-10 (in percentage points, weighted by employment)

	Non Exp	Exp	Dif (exp-Nexp)
North-East	6.63	31.31	24.68
South-East	4.68	27.44	22.76
South-Muntenia	0.61	32.31	31.71
South-West Oltenia	0.58	33.61	33.04
West	**8.51**	**34.37**	**25.86**
North-West	4.69	33.00	28.31
Center	3.57	32.88	29.31
Bucharest-Ilfov	1.63	8.00	6.37
Romania	3.18	25.53	22.34

…and disparities across counties, which are mostly driven by the non-exported sector

% difference to Timis average

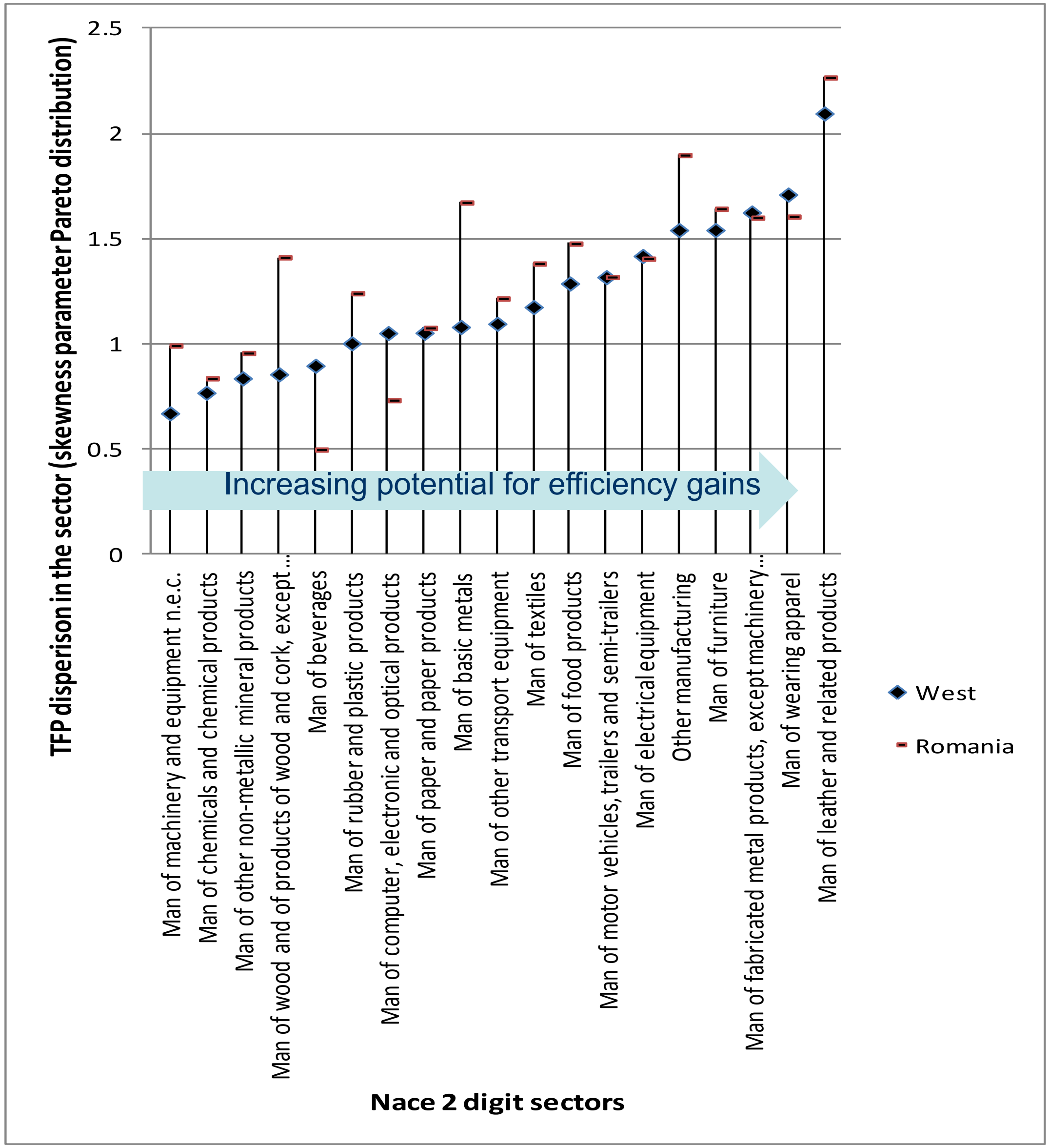


TFP growth in the West region by county, 2008-10 (in p.p, weighted by employment)

	Non Exp	Exp	Dif (exp-Nexp)
Arad	6.63	31.31	24.68
Caras-Severin	4.68	27.44	22.76
Hunedoara	0.61	32.31	31.71
Timis	0.58	33.61	33.04

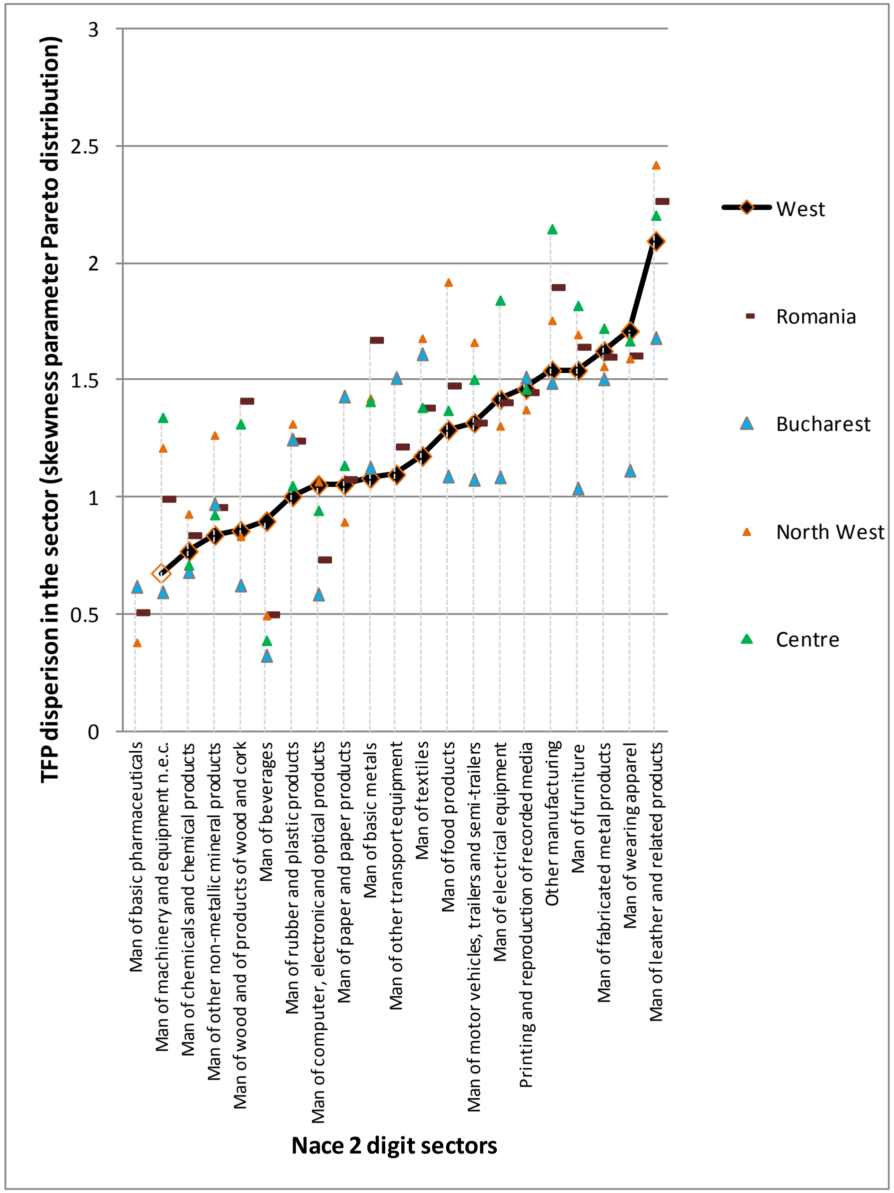
- The average firm in Arad has a turnover 20% lower than in Timisoara, labor productivity is 22% lower, and unit labor costs 12% higher. Capital productivity is 14% higher, however.
- In Caras-Severin and Hunedoara, labor and capital productivity is substantially lower.
- Differences are mainly driven by the non-exported sector and reflect a spatial concentration of activity around Arad and Timisoara

Productivity disparities among firms also vary significantly across sectors



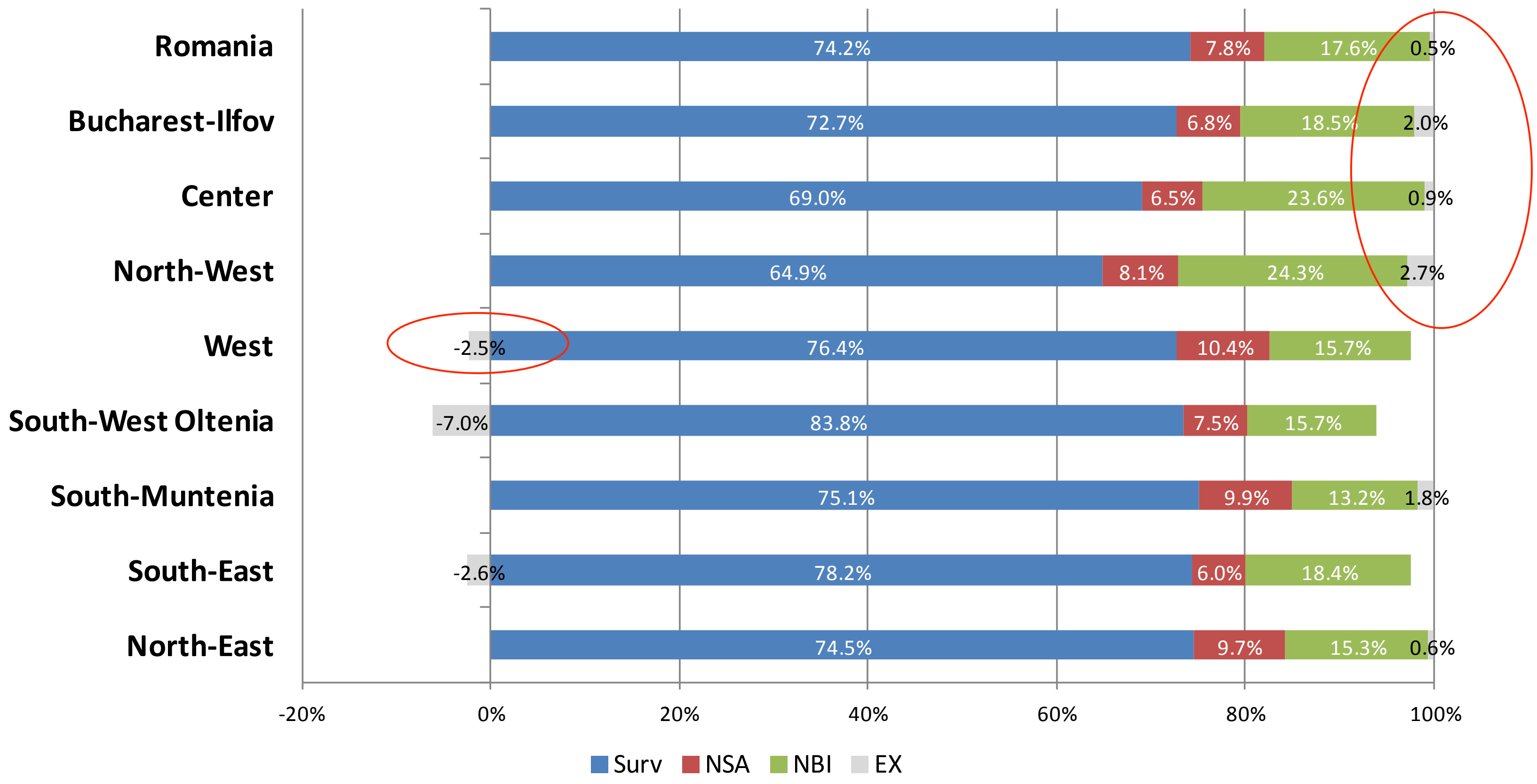
- In most sectors firm productivity dispersion in the West Region is lower than in the whole of Romania
- Firm productivity dispersion higher only for the manufacture of beverages, and computers, electronics and optical products

But compared to peer regions, less scope for efficiency gains in a number of industries



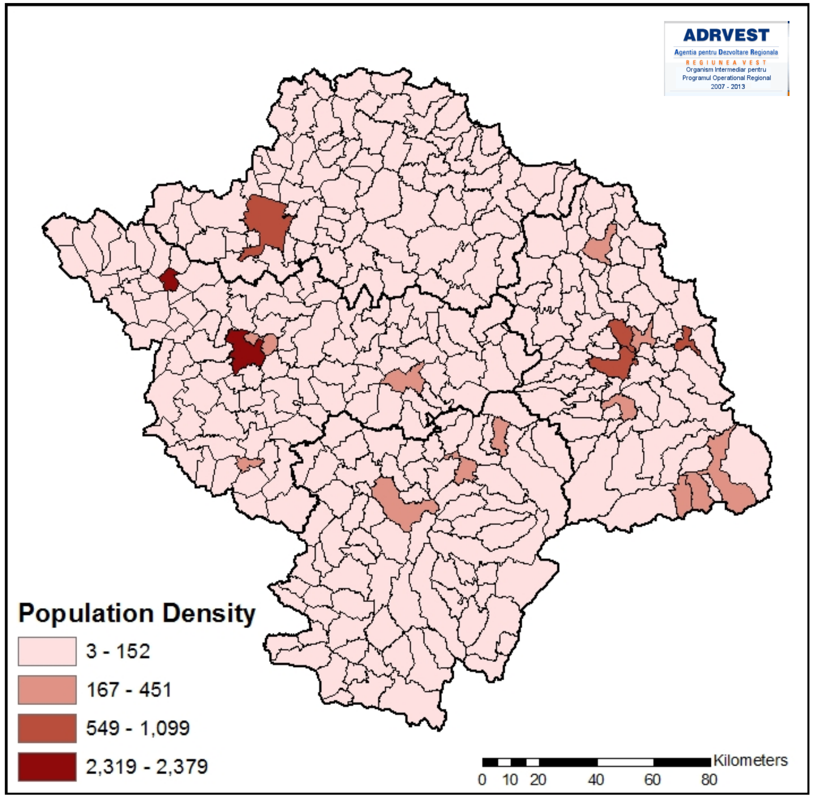
- Skewness of the pareto distribution (2010)

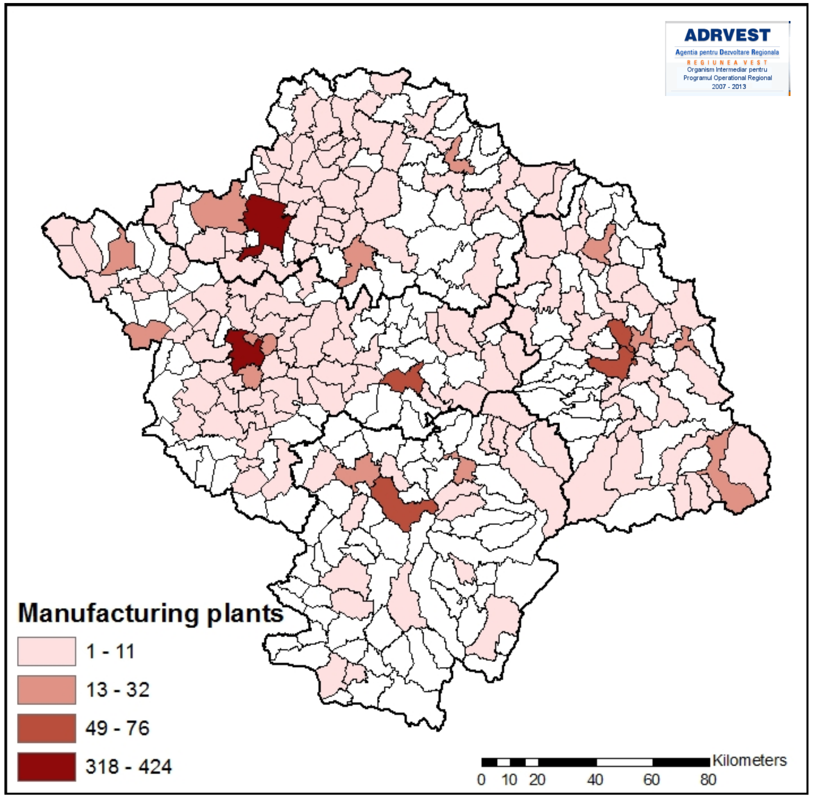
Confirmed by negative contribution to TFP growth by exiters in West Region



- Surv = Incumbents
- NSA = Start ups
- NBI = Firms that grew above 20 employees
- EX = Exits
- Firm distribution in the West Region surv=41%, NSA=10%, NBI=26%, exit=24%

Urban agglomerations increasingly driving growth

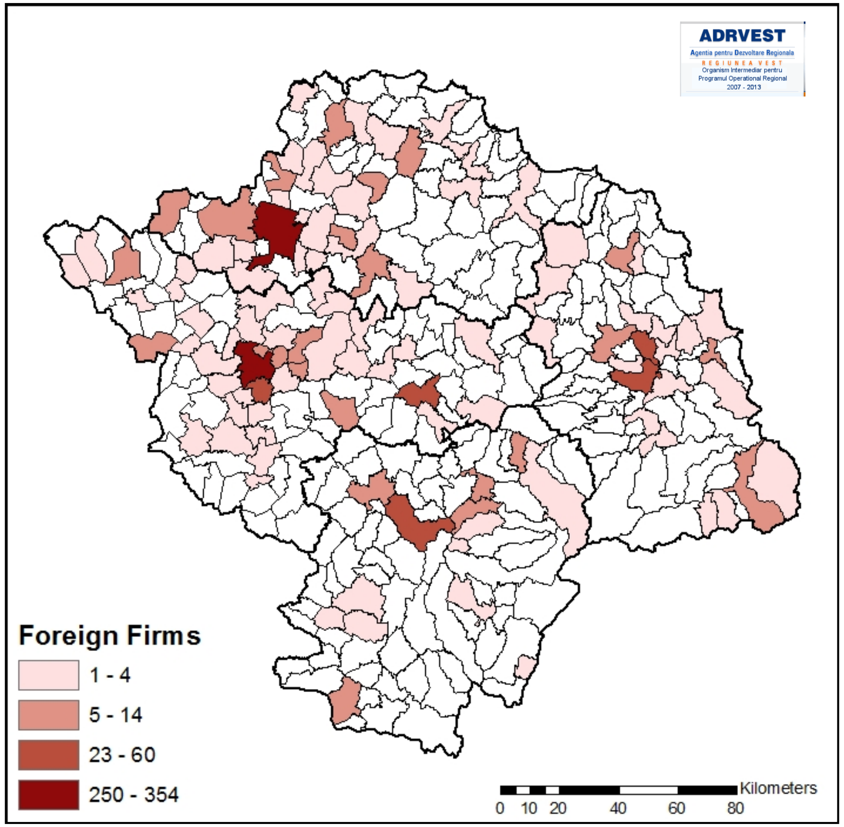


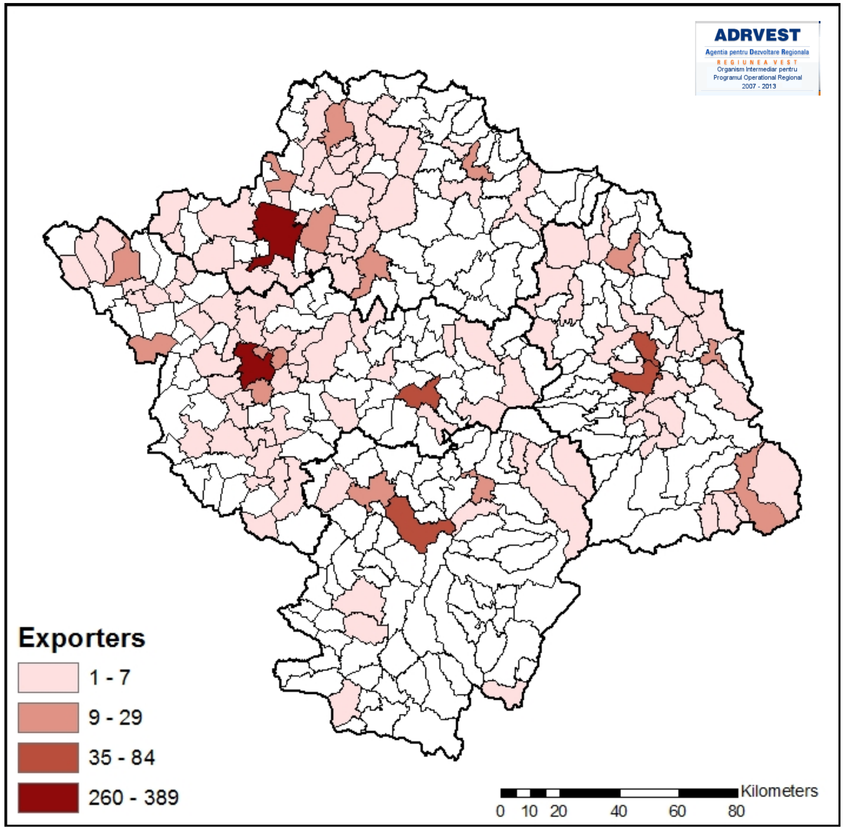


Source: Maps copyright of ADR West

- Pockets of concentration in each county, but main concentration around Arad and Timisoara, with some additional concentration along the Hungarian border (but not the Serbian border)

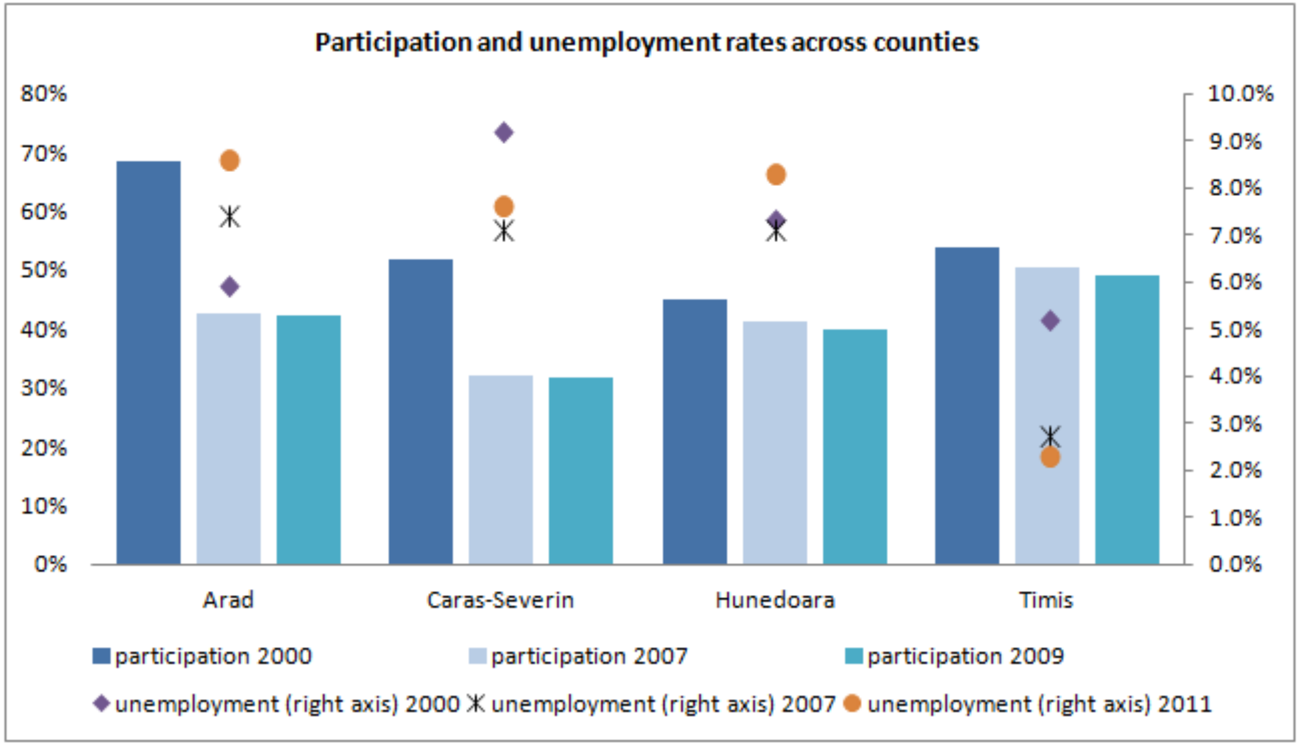
Perhaps because they are favored by foreign firms and exporters





Source: Maps copyright of ADR West

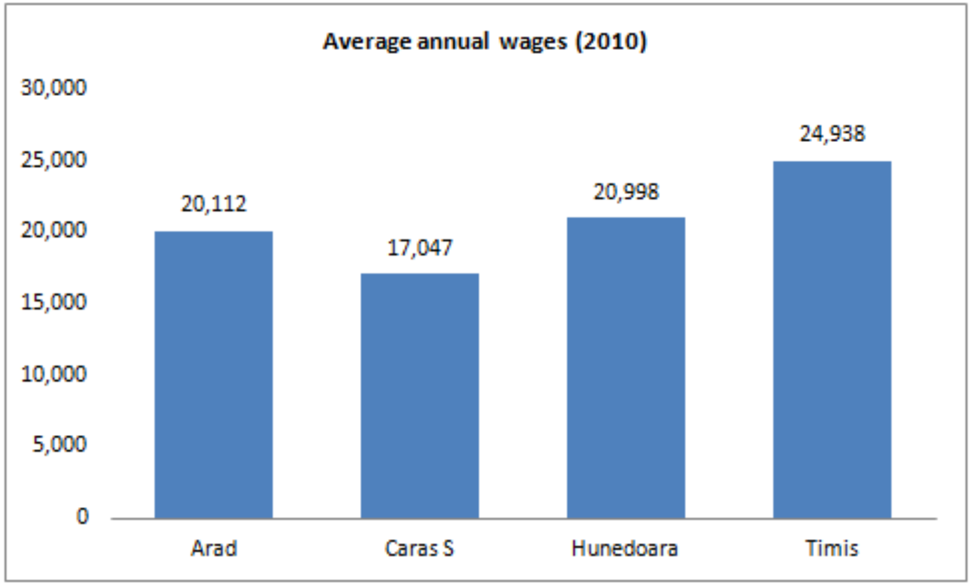
Contributing to large disparities in employment opportunities…

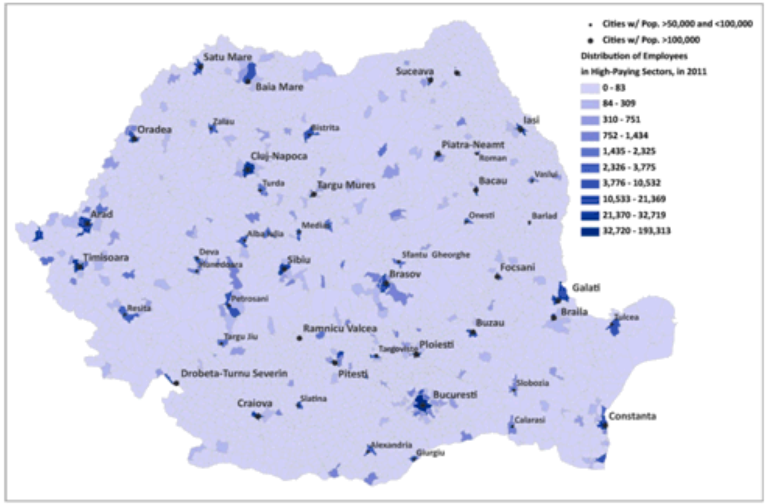


Note: For counties, latest data on participation available only from 2009; county calculations on participation use total population (all ages) over employment (all ages)

- Timis is the only county to see relatively stable labor force participation rates (and has the highest rates); also the only county to see continuous decline in unemployment (and has by far the lowest)

… and in the quality of employment





- 46% gap between average wages in highest (Timis) and lowest (Caras-Severin) wage counties; in line with national trends of concentration of high wage activities in urban agglomerations
- Growth in wages slightly higher in the lagging counties (15% between ’08-10) and the leading ones (12-13%)
- High wages in Hunedoara driven by the coal mining sector

4. CHALLENGES AND ISSUES FOR INVESTIGATION

A quick summary of the findings so far

- A 'leading' region in the Romanian context
- Performance gives both reasons for optimism and concerns

Positive signs

- Substantial productivity growth
- Highly export oriented
- Major growth in automotive sector, even through the crisis
- Good signs of entrepreneurialism (firms and exports)
- Set of strong, multi-product exporters

Areas of concern

- Increasing sector concentration
- Specialization in basic manufacturing
- Trailing not only Bucharest but also Center and North-West on several key measures of dynamism and competitiveness
- Low dynamism in new product and new market entry
- Regional disparities and labor market bifurcation

- In this section we will outline the main challenges to sustainable, inclusive growth emerging from the analysis, present some initial evidence, and discuss the further analysis that will be carried out
- Diagnostics on these issues –in terms of how important they are, what is behind them, and how they can be addressed – is the focus of the remainder of the work on competitiveness

Some challenges, opportunities, and questions for the region

1. What is behind the high volatility of the region's growth? Does it matter? Is there excessive reliance on the auto sector?

2. What is holding back diversification of markets and products?

3. What would it take to move to higher value-added activities within traditional sectors?

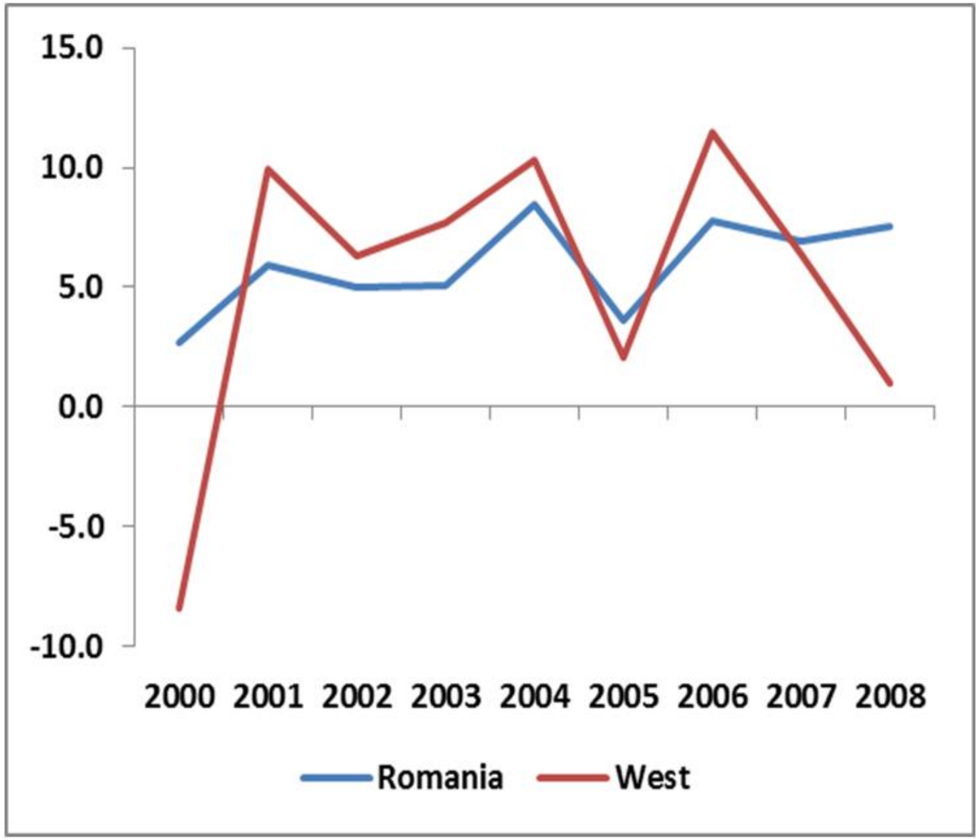
4. What would it take to build a strong, competitive position in knowledge-intensive activities (especially services) outside traditional sectors?

5. What can be done to create employment opportunities for residents in lagging parts of the region?

i. What is behind the high volatility of the region's growth? Does it matter? Is there excessive reliance on the auto sector?

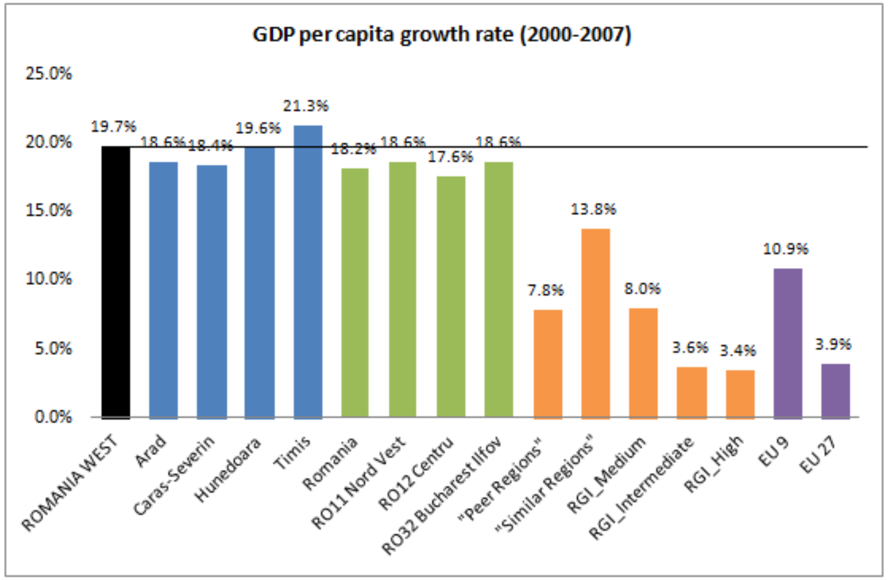
High volatility of value added growth…

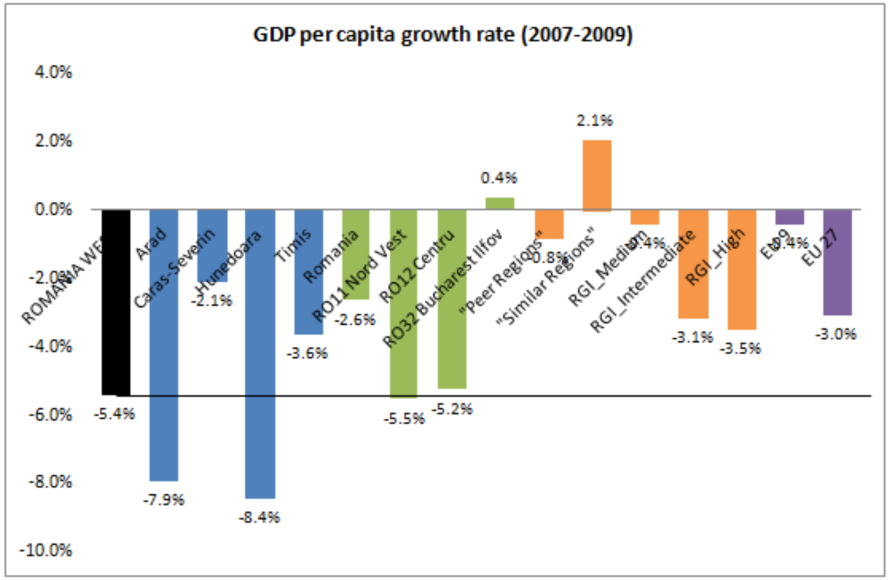
Real growth rate of regional gross value added



- While growth in the region was higher than the average for Romania, the decline during the crisis was equally sharp

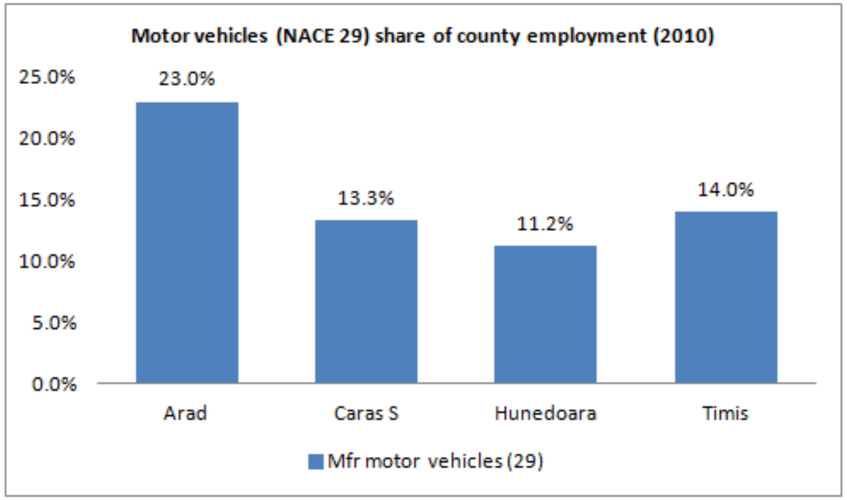
…and high volatility of per capita GDP growth

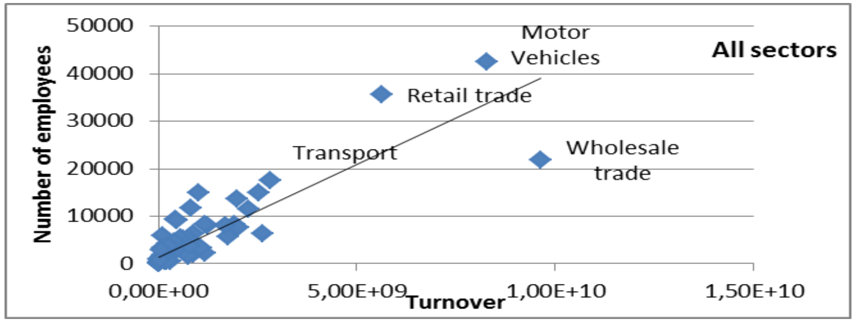




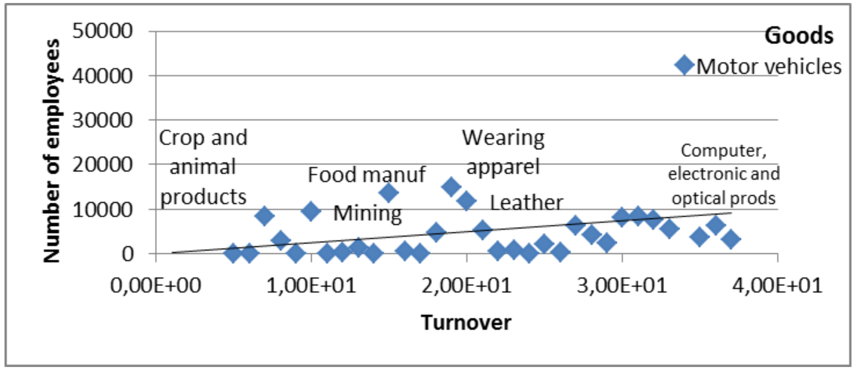
- Per capita GDP growth in the region was highest among comparators, decline during the crisis was equally sharp
- What are the main factors contributing to this volatility? Are there long-term negative consequences from the volatility?

Increasingly high reliance on a single sector





Note: these figures are based on SBS which capture only about 70% of overall employment, while capturing close to 100% of automotive employment, so actual reliance will be lower than reported



- Motor vehicles (NACE 29) the top employer in all counties except Hunedoara, where it is #2 behind coal mining
- With 1% of the plants and 0.1 of all firms in the West Region, the motor vehicles sector accounts for 11% of employment, 13% of turnover and almost 44% of exports.

Which is increasingly dominated by large, foreign firms

Basic statistics for Auto cluster firms in the West Region, 2010

	# of Firms	Turnover (1,000 Lei)*		N. of employees		Labor Prod (value added per employee, 1,000 Lei)*		Unit labor cost (Lei per unit of added value)*	
		Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
foreign owned	115	508,000	398,000	397.9	1018.3	44.5	33.1	1.20	0.91
Domestic &Exporting	50	38,300	43,900	100.0	138.3	43.8	20.4	1.13	0.83
Domestic &NON exporting	85	58,200	86,800	38.1	88.3	39.3	24.4	1.44	1.77

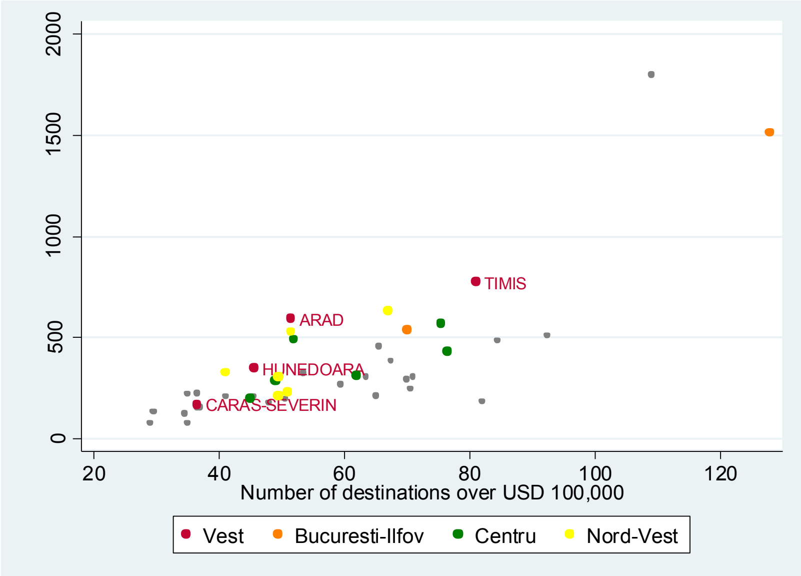
* Figures are weighted by employment; nominal values are in 2000 Rom Lei

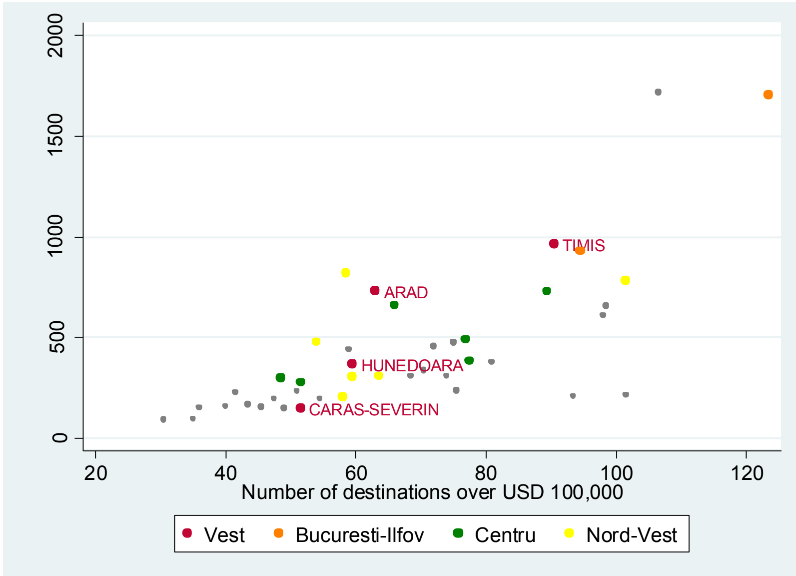
Further analysis to test this question

- Empirical analysis:
  - Analysis of export volatility and vulnerability and role of market and product concentration
  - Assessment of entry, growth, and exit patterns of: auto v other sectors; FDI v domestic firms in auto
- Qualitative:
  - FDI location determinants and long-term strategic views of the region
  - Foreign investment and market structure (buyer power) in downstream industries to key West region sectors

ii. What is holding back diversification of markets and products?

Diversification has not increased much since 2005



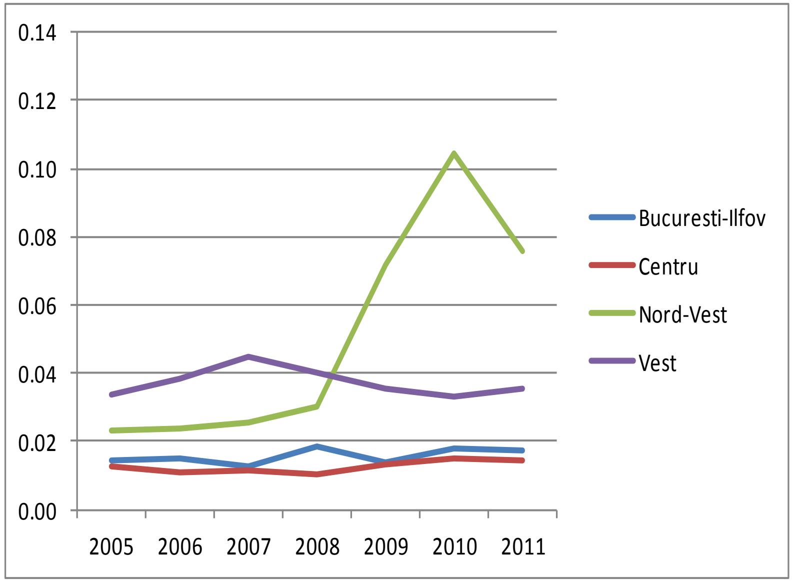


Source:

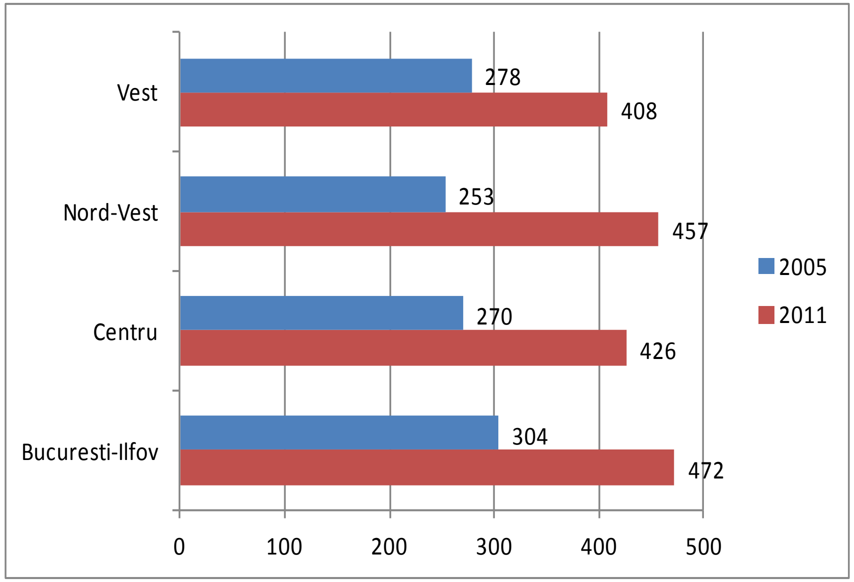
- The average firm from the West Region exports 3 products to 4 destinations. Bucharest exports 5 products to 3 destinations, reaching 162 destinations overall.
- In 2011, firms from the West region went to 124 destinations, compared to 116 in 2005. Firms from the North-West region went to 137 destinations, compared to 119 in 2005.
- For each destination in 2011, there were on average 15 firms from the West Region, 13 from the North-West and from the Centre Region and 32 from Bucharest.

Export product concentration is high compared to peers

HHI of product concentration, 2005-2011 (HS-6 digit)



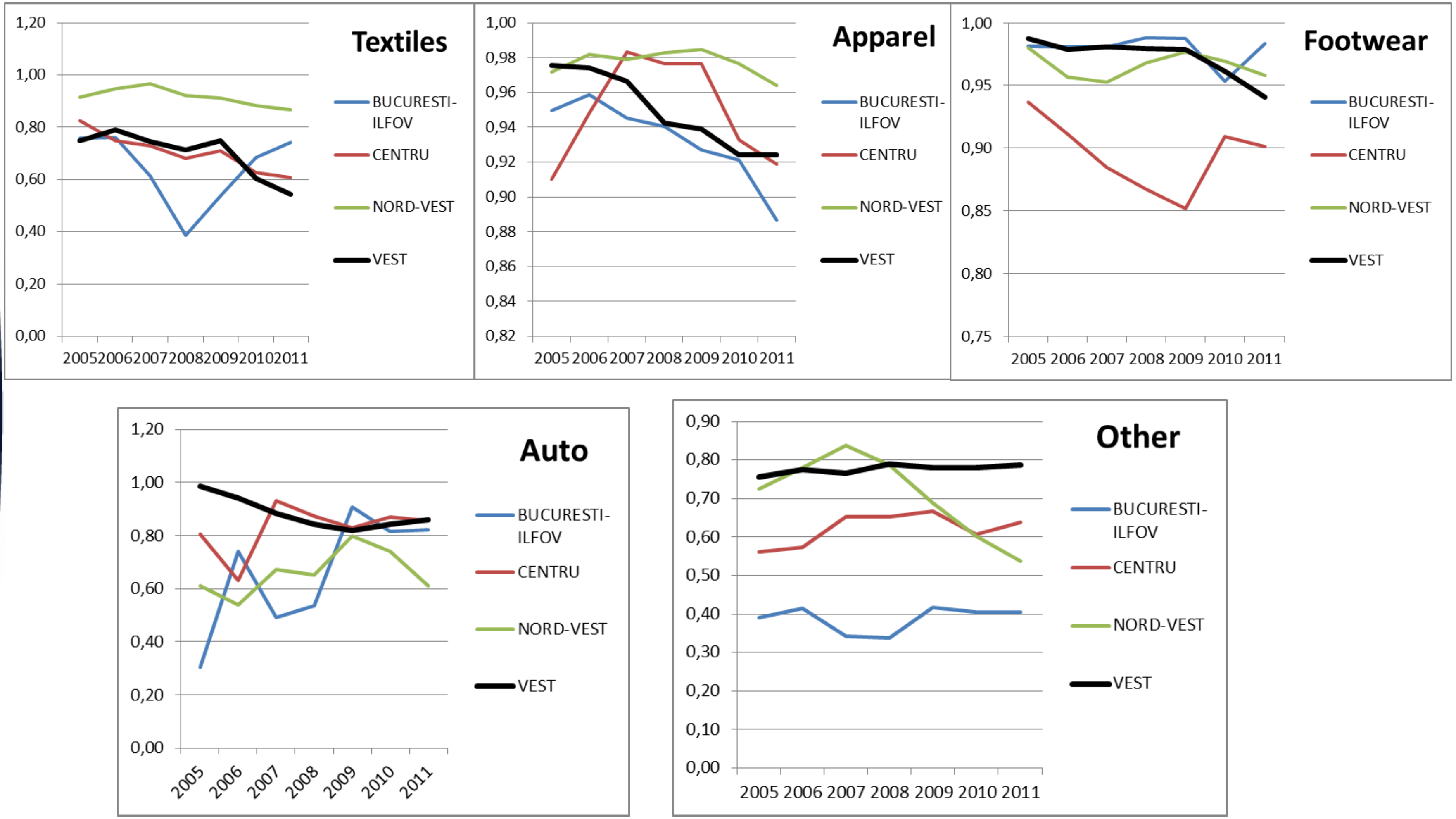
Number of products with exports above US$ 10 million (HS-6 digit)



Source:

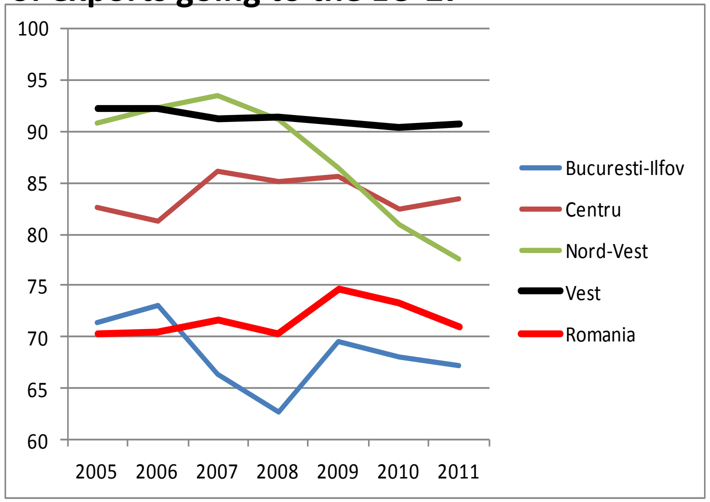
In particular for the auto sector and smaller sectors

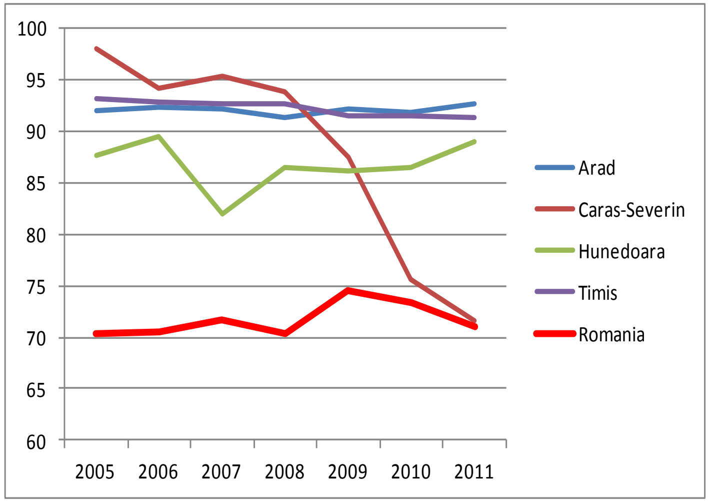
HHI of Market concentration (2011)



93% of the region's exports are towards the EU-27

Share of exports going to the EU-27



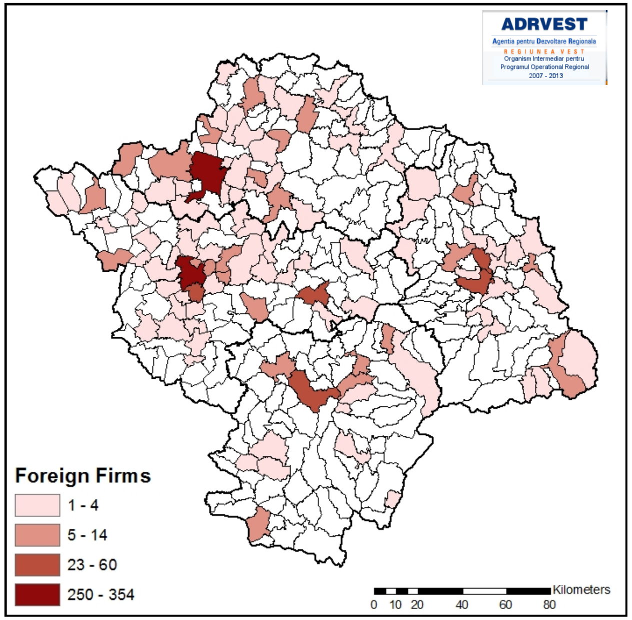


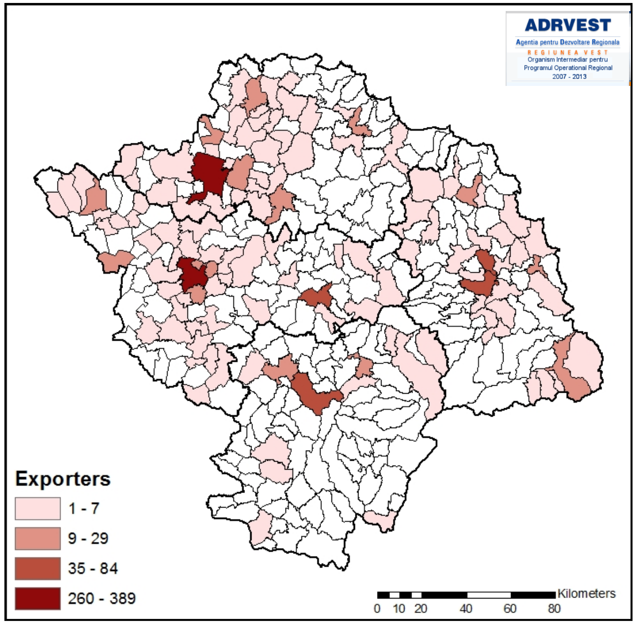
Share of exports going to the EU-27, % of total in the sector (2011)

	Auto	Apparel	Footwear	Textiles	Other
BUCURESTI-ILFOV	90,5	94,1	99,2	86,0	62,9
CENTRU	92,5	95,8	94,9	77,2	79,6
NORD-VEST	77,7	98,2	97,9	93,0	73,0
VEST	**92,6**	**96,1**	**97,0**	**72,6**	**88,7**

- Exports to non-EU markets small - mainly from electrical machinery, textiles, clothing, footwear and metals
- Top-3 non EU destinations for each of the counties:
  - Timisoara: Turkey (2,2%, with transport eq., plastics/rubber and metals), the United States (0.9%), with electrical machinery and plastics/rubber), Croatia (0.6%, animals, plastic/rubber and metals)
  - Arad : Ukraine (1.6%, mainly hides and skins, textile, clothing, footwear, plastic/rubber and metals), Switzerland and Turkey (1.3% each, mainly electrical machinery and transport)
  - Hunedoara: Turkey (4.3%, mainly Electrical machinery, metals, transport, plastic/rubber), Egypt (2.3%, wood, machinery) and China(1.8%, wood)
  - Cara-Severin: Saudi-Arabia (19.8%, all from metals), Turkey (2.6%, transportation, metals) and Algeria (1.5%, all from metals)

The border with Serbia appears underexploited





Source: Maps copyright of ADR West

# firms exporting to Serbia	2007	2008	2009	2010	2011
ARAD	27	21	22	21	34
CARAS-SEVERIN	6	8	11	21	22
HUNEDOARA	6	6	7	7	6
TIMIS	63	80	65	75	87
West Region	**102**	**115**	**105**	**124**	**149**

# firms importing from Serbia	2007	2008	2009	2010	2011
ARAD	22	30	22	25	31
CARAS-SEVERIN	5	8	8	6	5
HUNEDOARA	4	10	11	11	8
TIMIS	59	62	58	66	75
West Region	**90**	**110**	**99**	**108**	**119**

% county/region exports	2007	2008	2009	2010	2011
ARAD	0,1	0,1	0,1	0,1	0,2
CARAS-SEVERIN	0,1	0,3	0,5	0,3	0,2
HUNEDOARA	0,7	0,5	0,1	0,1	0,1
TIMIS	2,3	2	1,3	0,7	1,7
West Region	**1,39**	**1,27**	**0,84**	**0,45**	**1,09**

% county/region imports	2007	2008	2009	2010	2011
ARAD	0,29	0,55	0,21	0,18	0,25
CARAS-SEVERIN	1,63	2,96	4,00	3,29	3,65
HUNEDOARA	0,09	0,92	0,32	0,24	0,34
TIMIS	0,57	0,87	0,88	0,80	0,63
West Region	**2,58**	**5,29**	**5,42**	**4,50**	**4,87**

- What are the opportunities and feasibility of more trade with Serbia?

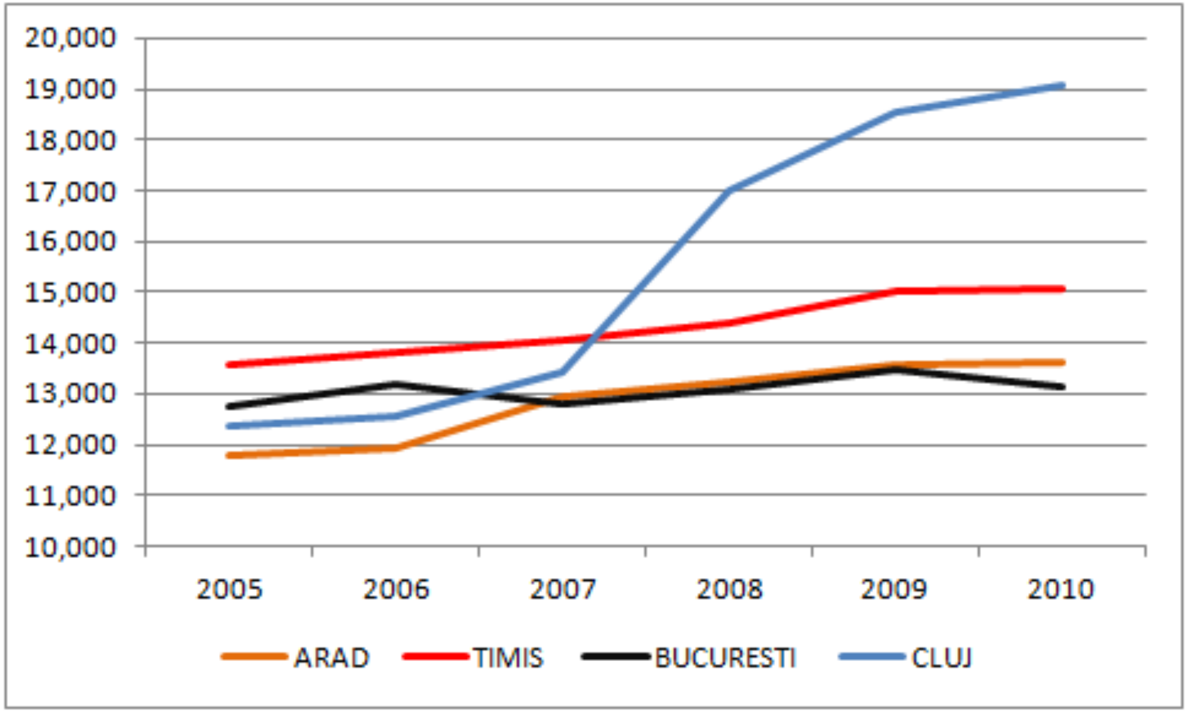
Further analysis to test this question

- Empirical analysis:
  - Assessment of product and market expansion in fdi-owned v domestic-owned firms
  - Assessment of product and market expansion in value chain v non value chain sectors
  - Assessment of determinants of intensive v extensive margin growth
- Qualitative:
  - Discussion of new market opportunities outside traditional EU markets
  - Discussion of challenges of breaking into new markets (market access barriers, quality, information, etc.)
  - Discussion of role of value chains in limiting both product and market scope

iii. What would it take to move to higher value-added activities within traditional sectors?

The level of sophistication is increasing moderately

Export Sophistication (EXPY), 2000-2010



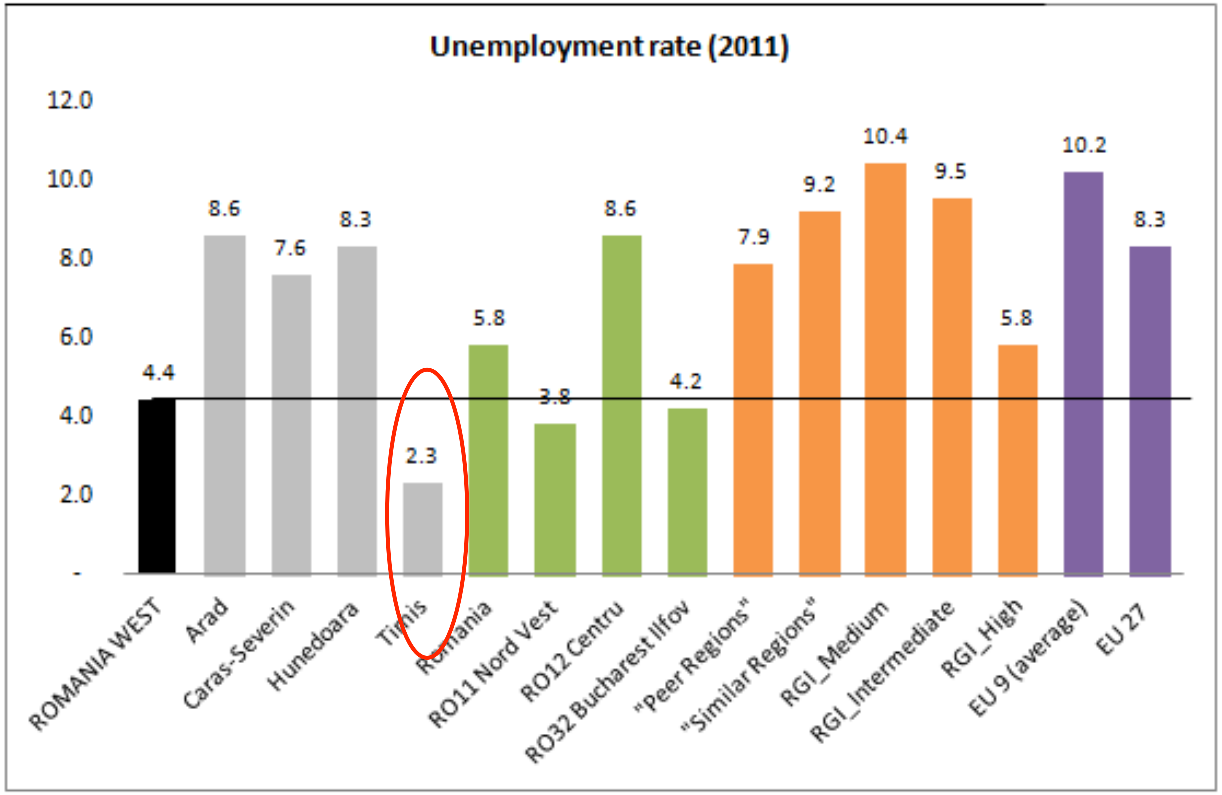
- Cluj's rapid growth in EXPY driven by Nokia investment

Most important sophisticated export products all from automotive

Top-10 export products, West region and comparators (2011 values)

VEST		2011			NORD-VEST		2011		
hs6	hs6_description	%	prody/ avg HS2	Lall tech cl.	hs6	hs6_description	%	prody/ avg HS2	La
854430	Ignition wiring sets&oth wiring sets of a kind	14.0	70	Mid-tech	**852520**	**Transmission apparatus, for radioteleph incorpo**	25.8	130	
870894	**Steering wheels, steering columns and steering**	7.3	114	Mid-tech	854430	Ignition wiring sets&oth wiring sets of a kind	6.3	70	
401110	New pneumatic tyres, of rubber of a kind used o	7.0	94	Res.based	940360	Furniture, wooden, nes	3.3	78	
870899	**Motor vehicle parts nes**	2.8	115	Mid-tech	**640399**	**Footwear with rubber... soles, leather uppers,**	2.9	116	
870829	**Parts and accessories of bodies nes for motor v**	2.5	125	Mid-tech	847330	Parts and accessories of automatic data process	2.5	82	
854449	Electric conductors, for a voltage not exceedin	2.4	79	Mid-tech	**940161**	**Seats with wooden frames,upholstered nes**	2.0	103	
940190	**Parts of seats other than those of heading No 9**	2.0	103	Low tech	**400950**	**Tubes, pipes and hoses, of vulcanized rubber wi**	1.9	108	
854441	Electric conductors,for a voltage not exceeding	1.8	73	Mid-tech	940140	Seats excluding garden seats or camping equipme	1.6	80	
853710	**Boards, panels, including numerical control pan**	1.7	145	Mid-tech	730439	Tubes, pipe & hollow profiles, i or nas, smls,	1.5	77	
901380	**Optical devices, appliances and instruments, ne**	1.4	108	High-tech	**640391**	**Footwear with rubber... soles and leather upper**	1.2	120	
BUCURESTI-ILFOV		2011			CENTRU		2011		
hs6	hs6_description	%	prody/ avg HS2	Lall tech cl.	hs6	hs6_description	%	prody/ avg HS2	La
120600	Sunflower seeds	5.9	96	n.a	**853710**	**Boards, panels, including numerical control pan**	5.9	145	
300490	Other medicaments of mixed or unmixed products,	4.9	49	n.a	**870899**	**Motor vehicle parts nes**	5.3	115	
120500	Rape or colza seeds	4.3	94	n.a	**870829**	**Parts and accessories of bodies nes for motor v**	4.1	125	
100590	Maize (excl. seed)	4.3	52	n.a	**440710**	**Coniferous wood sawn or chipped lengthwise, sli**	2.8	111	
720449	Ferrous waste and scrap, iron or steel, nes	3.4	92	n.a	300490	Other medicaments of mixed or unmixed products,	2.7	96	
401110	**New pneumatic tyres, of rubber of a kind used o**	3.1	176	n.a	620342	Men's or boys' trousers, breeches, etc, of cott	2.1	94	
271000	Petroleum oils, etc, (excl. crude); preparation	2.5	84	n.a	848299	Bearing parts, nes	2.1	87	
271600	Electrical energy	2.5	51	n.a	854430	Ignition wiring sets&oth wiring sets of a kind	1.7	70	
740400	**Waste and scrap, copper or copper alloy**	2.2	160	n.a	**441010**	**Particle board and similar board of wood, unwor**	1.6	167	
100190	Spelt, common wheat and meslin	2.2	48	n.a	854441	Electric conductors,for a voltage not exceeding	1.5	73	

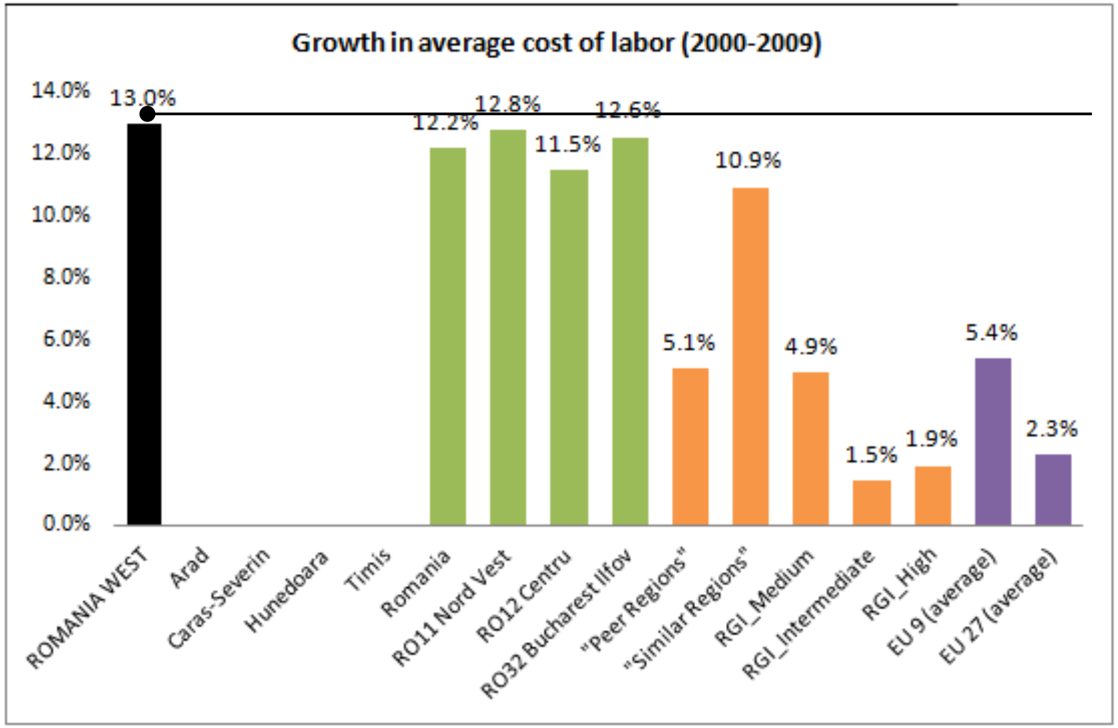
At the same time labor markets are tight in the main agglomerations…



Note: Figures represent unemployment rate for adults age 25+ **except for data at county level which is 15+**

- Unemployment one of lowest among peers
- Timisoara essentially at full employment

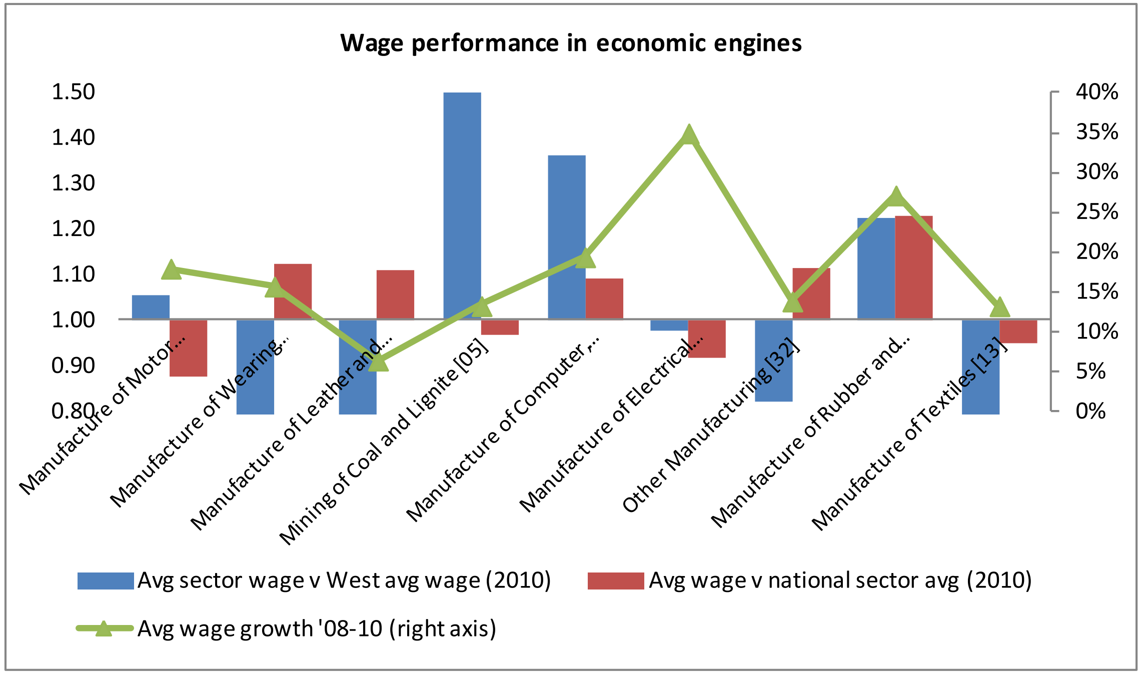
… and labor costs are rising fast



- Average cost of labor rose faster in West region than in all peers – although it declined slightly between 2007 and 2009

Thus for the main agglomerations, continued growth in the sector will **require** moving into higher value added activities that can support higher wages

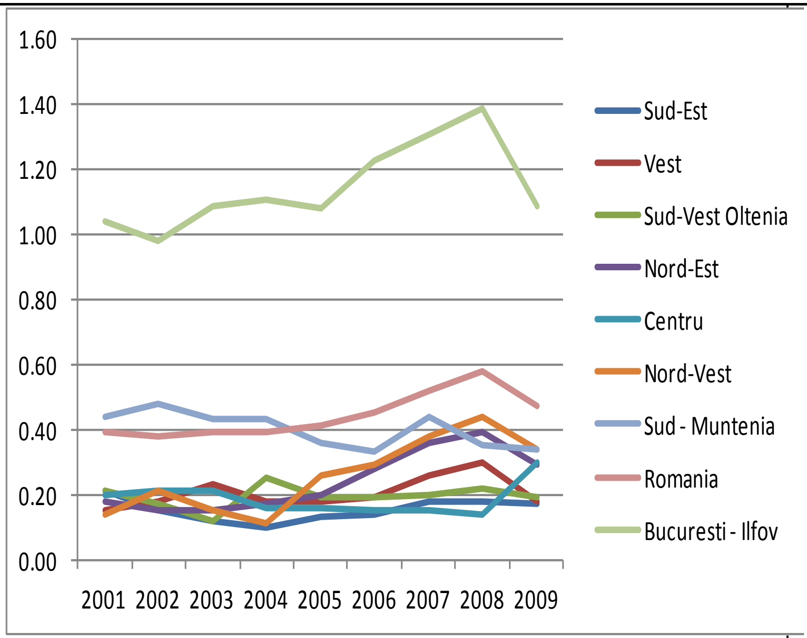
Need to better understand relationship between skills, wages, and value added

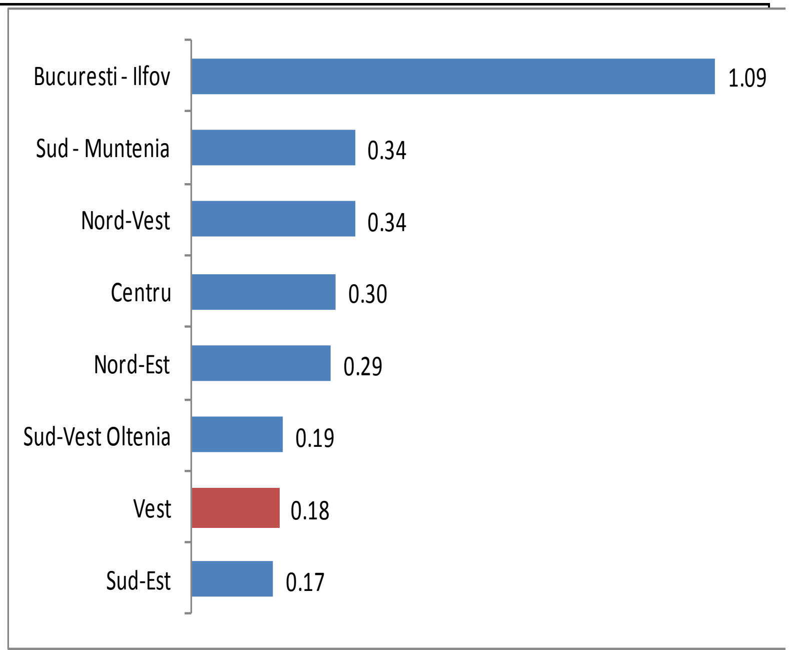


- Mixed performance – some sectors deliver higher wages than the regional average (including automotive and computers) while others are well below average (e.g. wearing apparel, leather, textiles)
- Yet often the reverse is true looking at in-sector wages – e.g. regional wages in automotive 13% below national average in the sector, while they are significantly higher in wearing apparel and leather – might this reflect skills positioning of the region within these sectors?

Weak innovation performance is unsurprising given the region's low investment in R&D

Total intramural R&D expenditure



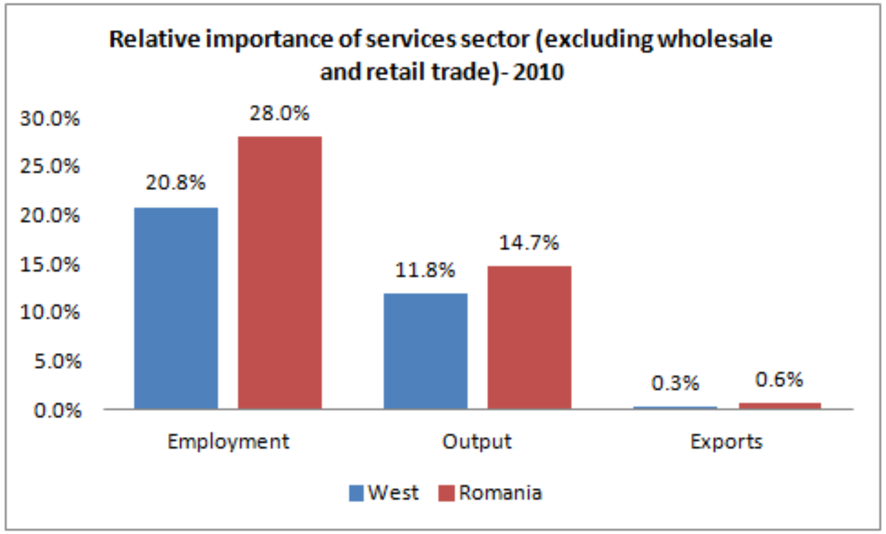


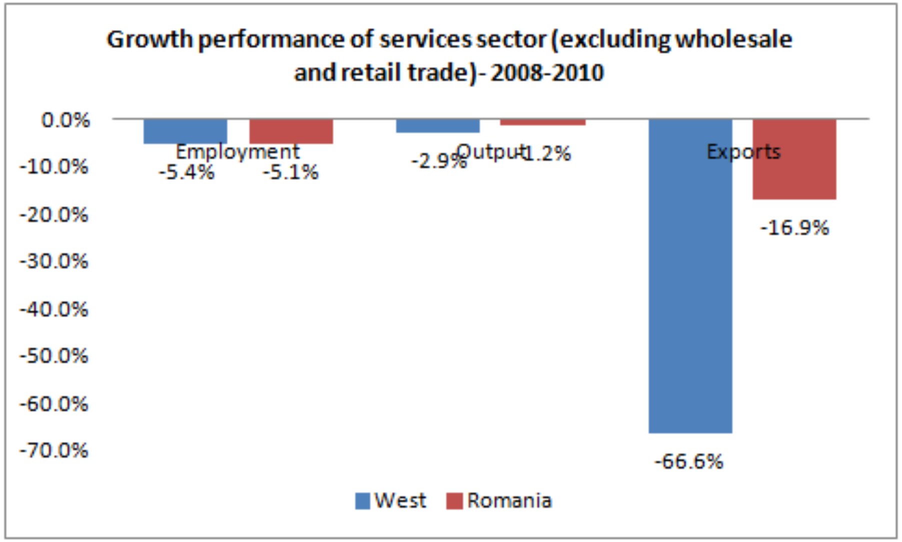
Further analysis to test this question

- Empirical analysis:
  - Assessment of value added and quality position of region's main products within key sectors
  - Assessment of evolution of the above over time
  - Assessment of the determinants of value-added and quality in exports
- Qualitative:
  - Discussion of determinants of investments in skills and technology intensive activities – strengths and weaknesses of region and areas in the region
  - Discussion of main constraints to participation in high value added activities
  - Discussion of link between innovation capacity and higher value added production

iv. What would it take to build a strong, competitive position in knowledge-intensive activities (especially services) outside traditional sectors?

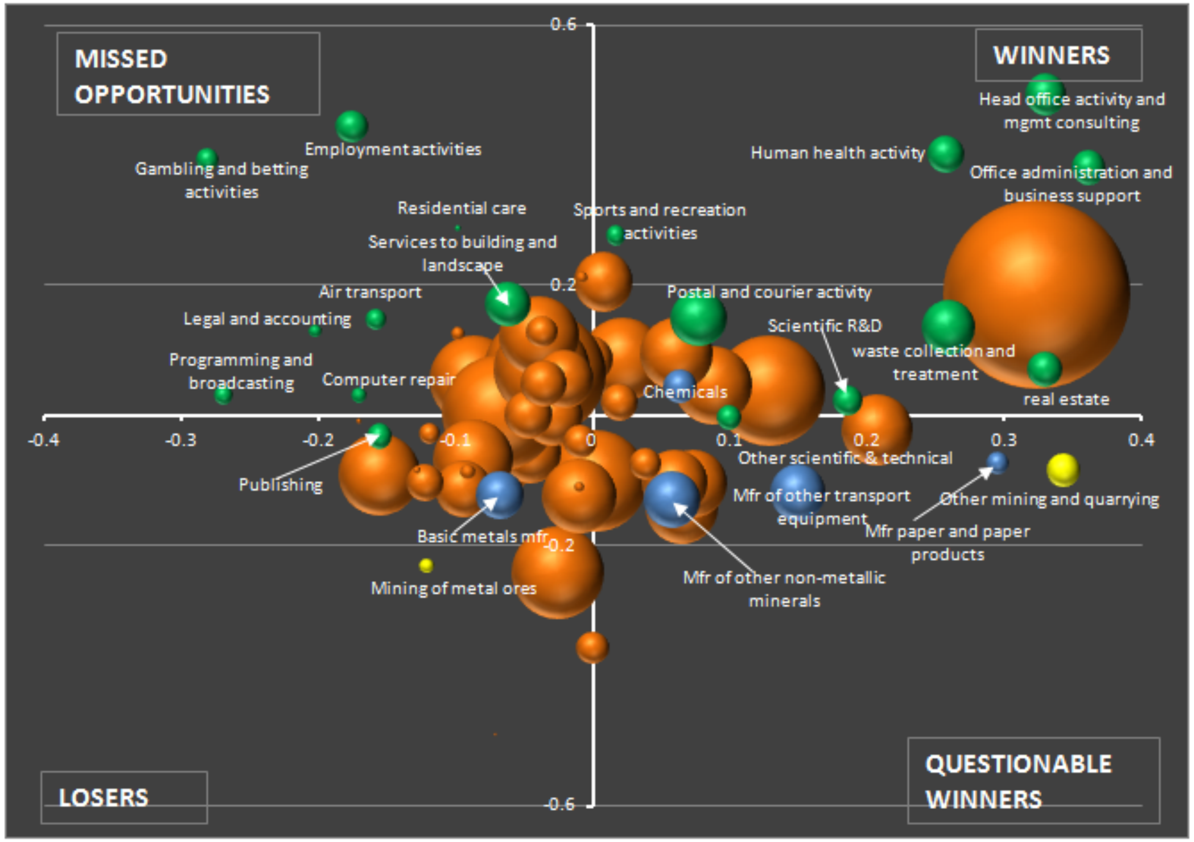
Services sector appears relatively less developed and performing relatively weakly in the region





Note that data based on SBS, which underestimates importance of services sector (both for region and nationally)

Signs of opportunity in knowledge-intensive services



Note: Figure presents Shift-share of West region v Romania at NACE 2; all NACE 2 sectors shown; bubble size reflects 2010 sectoral employment in West region; color reflects broad sector (yellow=primary; blue=manufacturing; red=utilities; green=services; orange=sectors not labeled in this figure); note that none of the top 20 employment sectors are labeled in this figure

- Major regional growth in some high end services sectors (although still very small)- e.g. head offices, business services, scientific and technical, health, and waste collection)
- Other key services activities are missed opportunities (tourism related, communications)
- Growth in some non-traditional manufacturing sectors (e.g. chemicals, non-metallic minerals, paper)

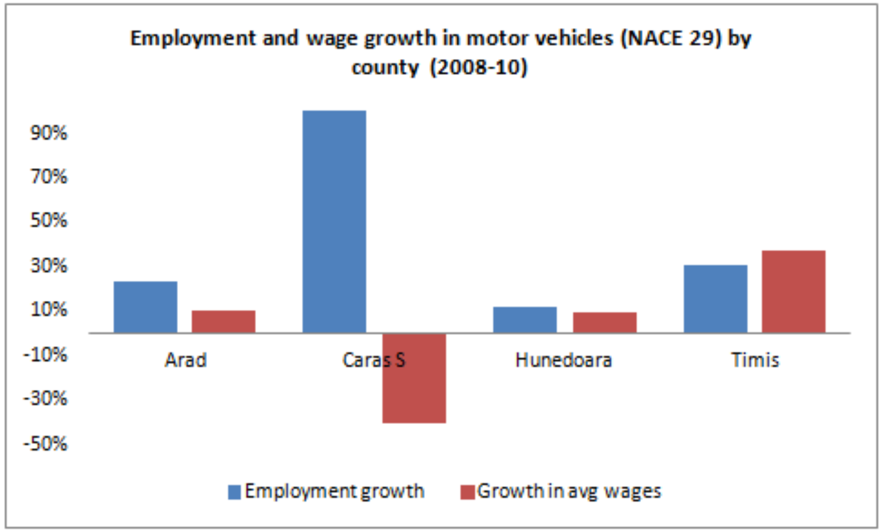
Further analysis to test this question

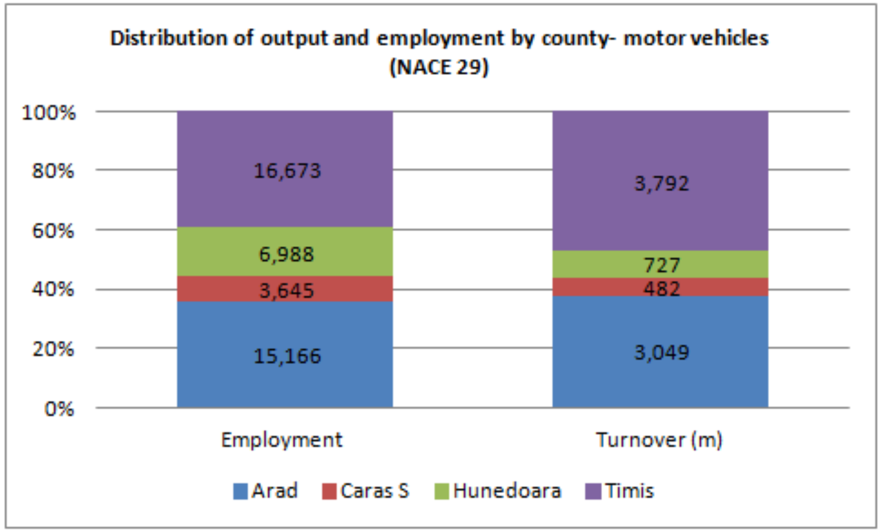
- Empirical analysis:
  - Assessment of service sector output, employment, and export performance, with particular attention of modern services
  - Assessment of challenges and constraints to firm level competitiveness (firm-specific characteristics, business environment, policy variables, endowments and infrastructure variables, social indicators and government spending), with particular attention to providers of modern services.
- Qualitative:
  - Assessment of business sector perception of bottlenecks and constraints.

v. What can be done to create employment opportunities for residents in lagging parts of the region?

- Three options: 1) Bring jobs (investment) to the people; 2) Bring people to the jobs; 3) Foster local economic development

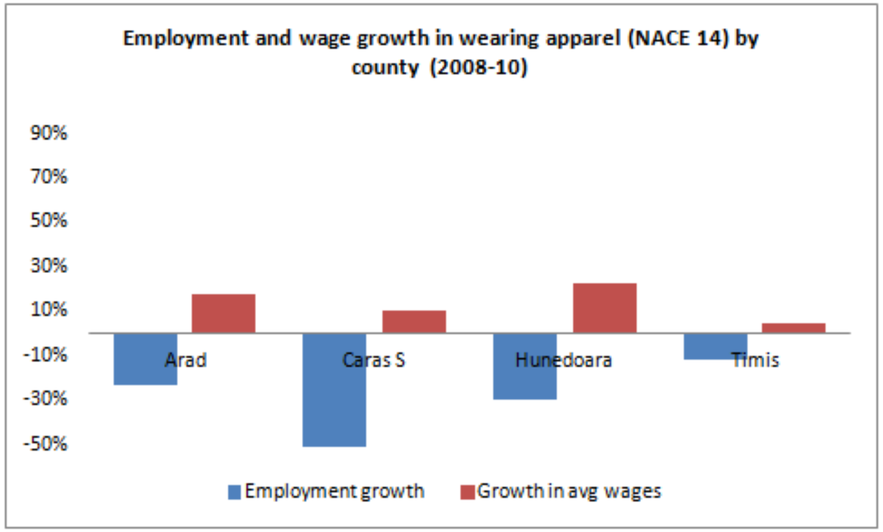
Some evidence of spatial division of skills intensity in motor vehicles sector

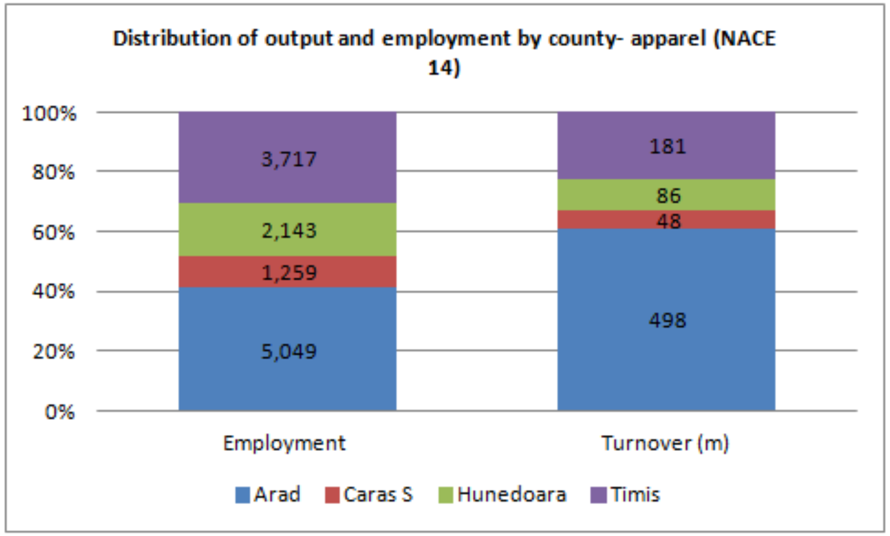




- Timis experiencing strong employment growth while also achieving highest wage growth
- Caras-Severin went from only one firm and 206 jobs in 2008 to 7 firms and 3,645 jobs in 2010, but with low wages
- In practice is there a shift of basic manufacturing activities toward lagging counties? Is there potential to establish a ‘two-tier’ model in the region?

Similar evidence in apparel, although in decline

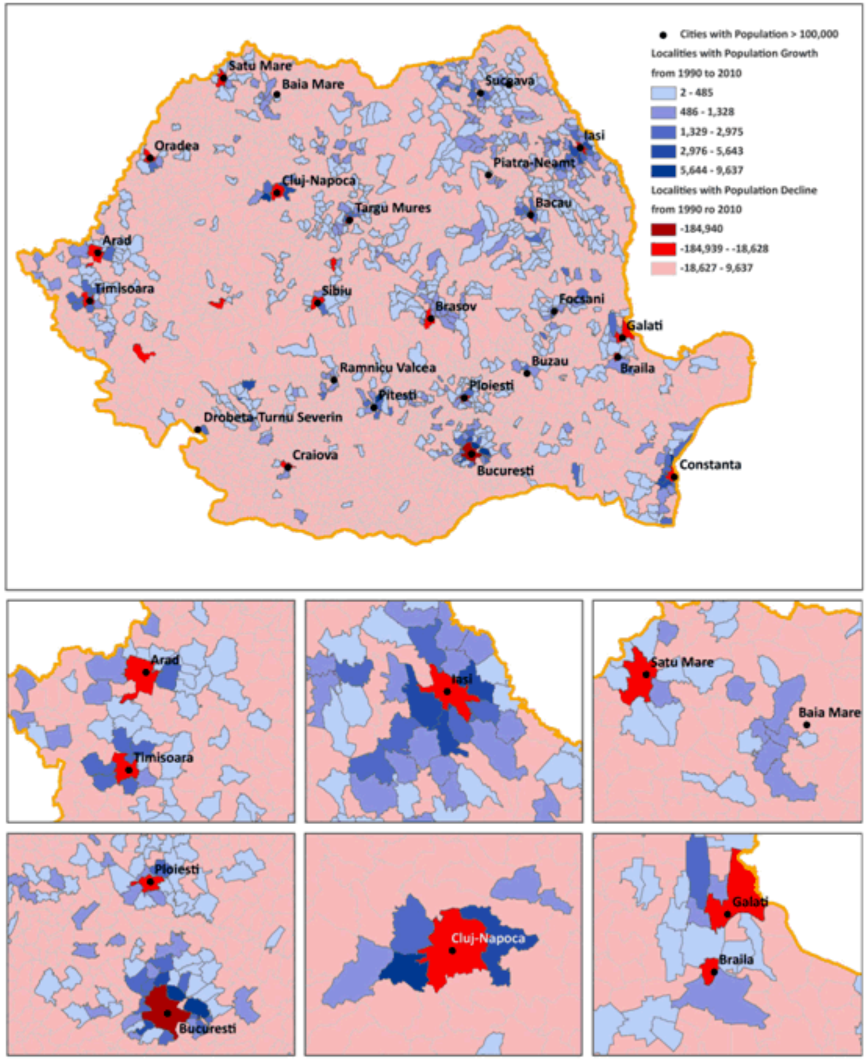




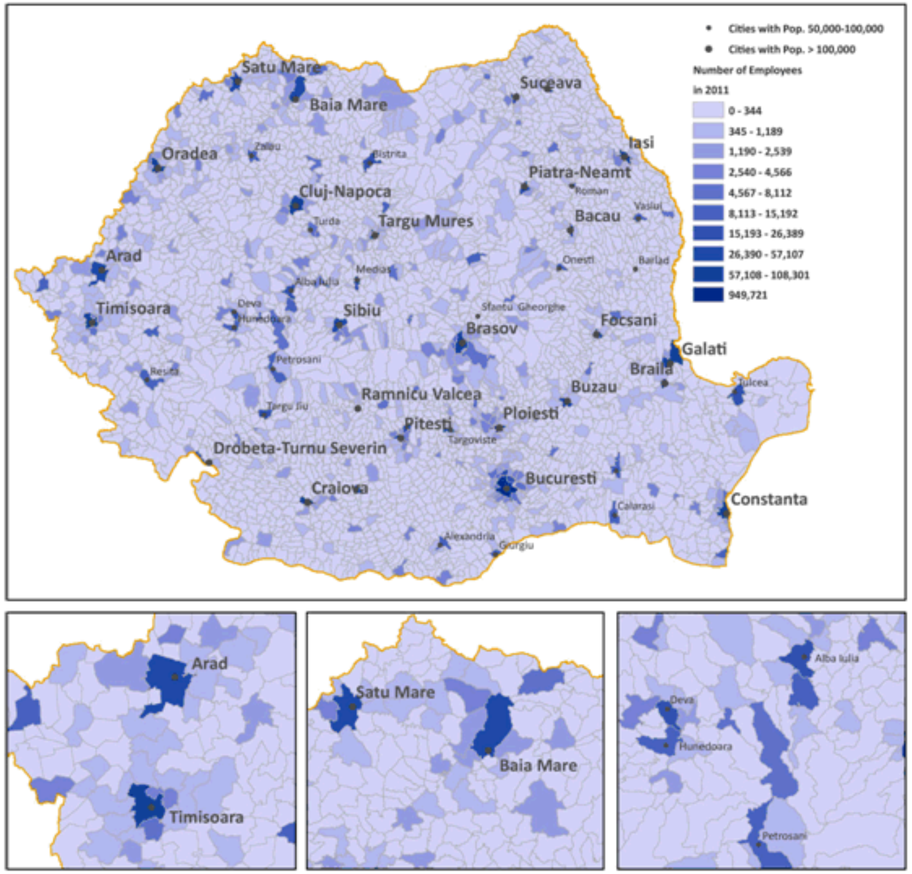
- Arad stands out in terms of firm productivity (more than 2x Timis and 2.5x Caras-Severin)
- Surprisingly, the higher wage counties experiencing the smallest decline in the apparel sector
- Can lagging counties still compete in basic apparel (e.g. through consolidation? Through higher value added activities?) ? Is a 'two-tier' model appropriate in this sector?

A clear 'corridor' of jobs and people is developing between Arad and Timisoara

Population (2011)

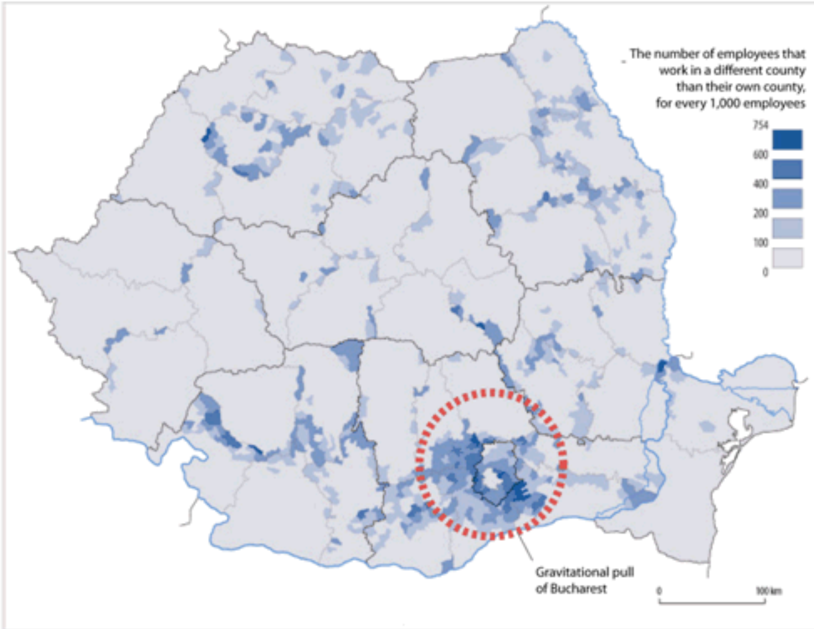


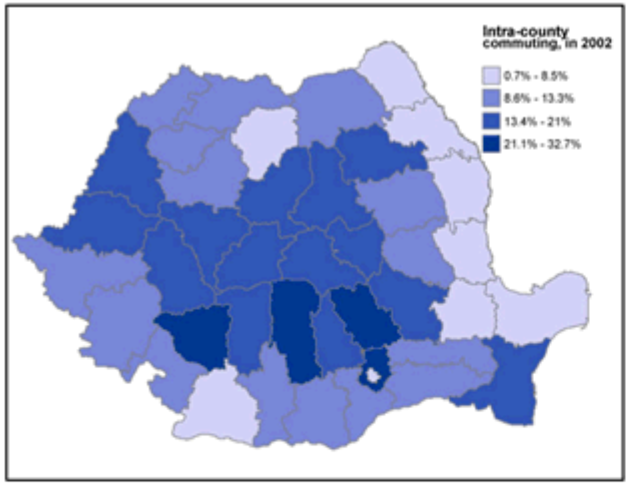
Employment (2011)

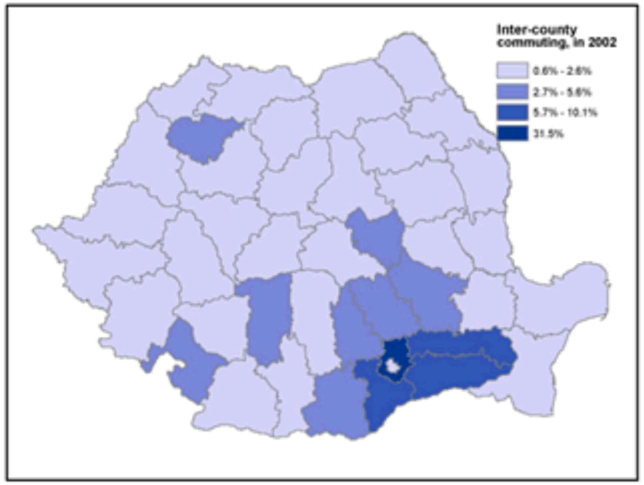


Source: World Bank (SDN)

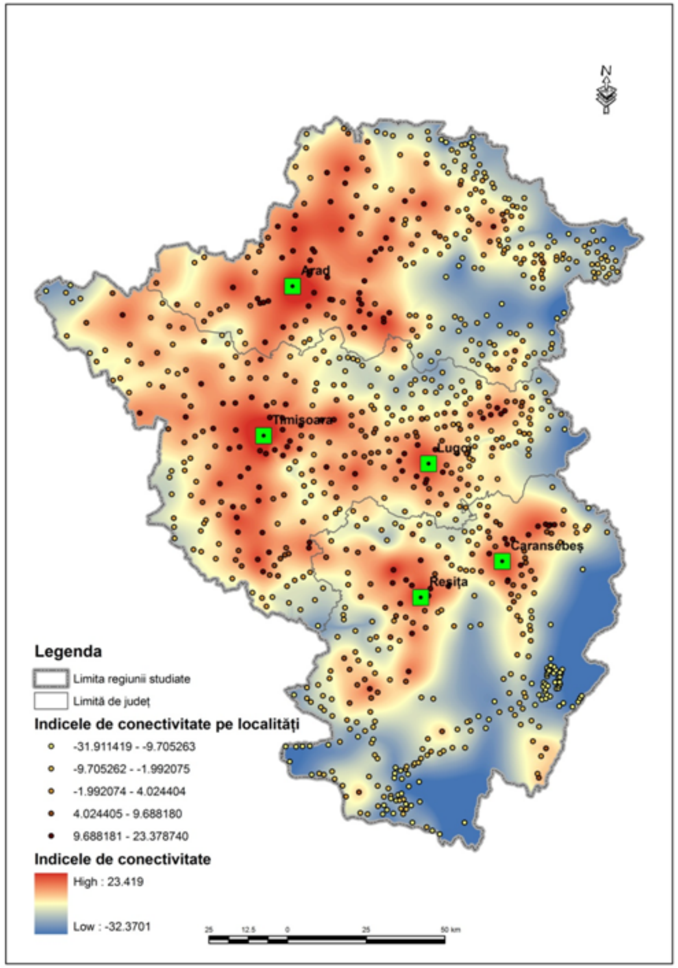
But cross-regional commuting has been low, at least historically







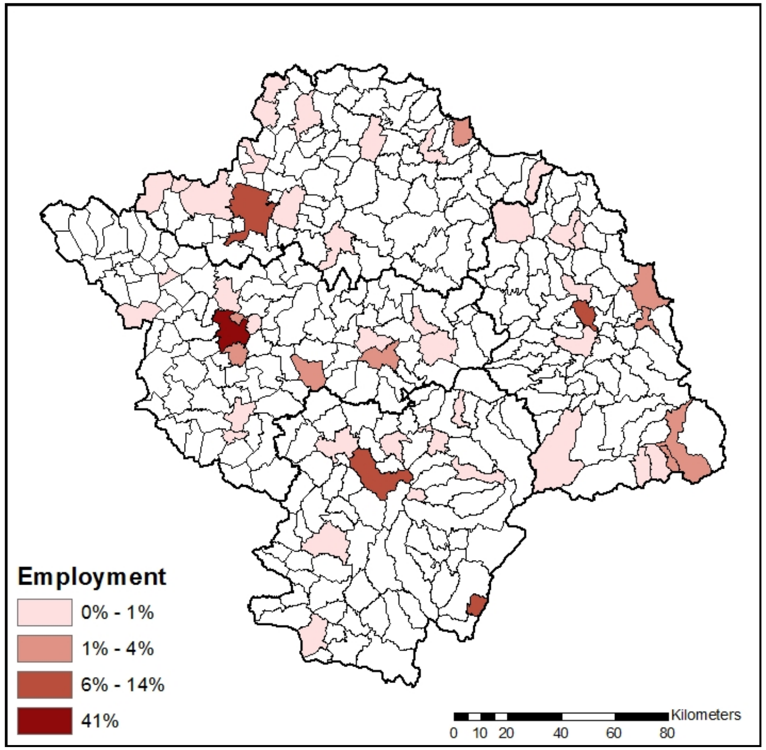
And connectivity varies considerably across the region



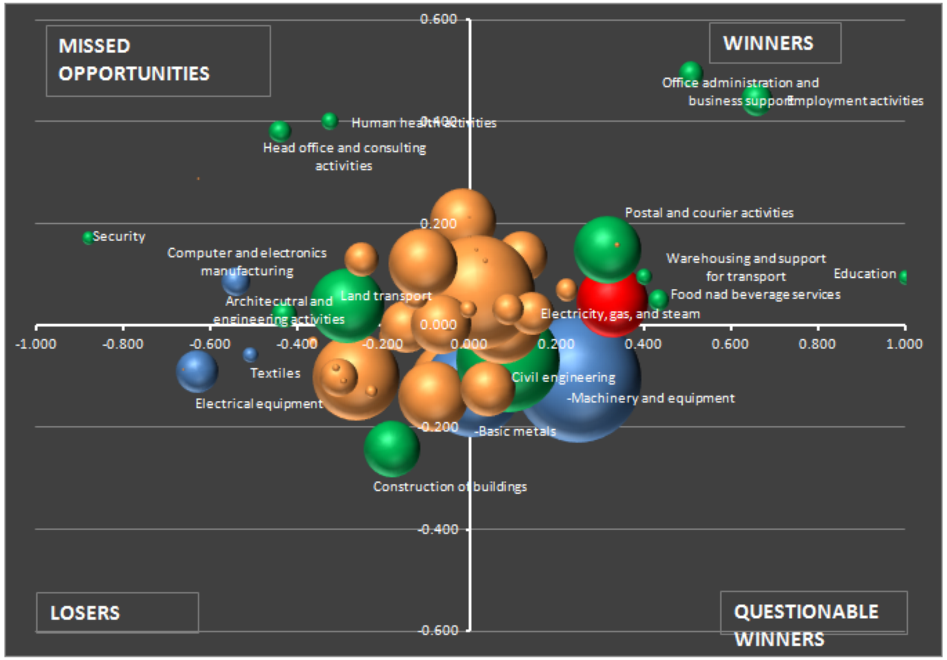
Source: Man, Moldovan, and Rusu (University of Cluj)

Comparative advantage suggests endogenous opportunities in basic services and tourism

Location of tourism jobs in the region



Caras-Severin shift-share



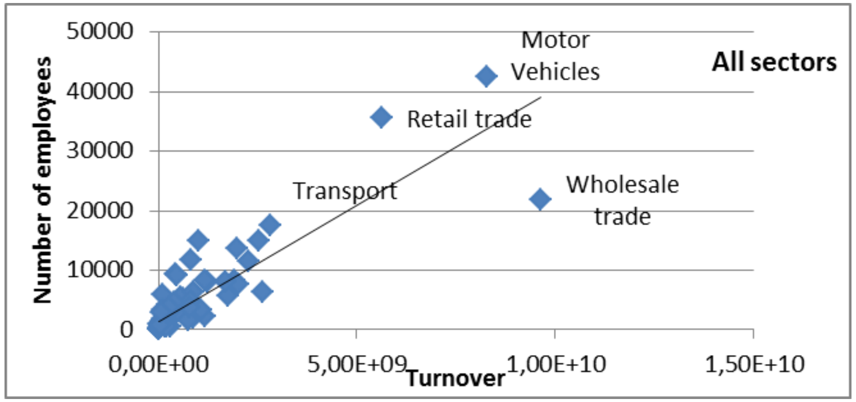
Further analysis to test this question

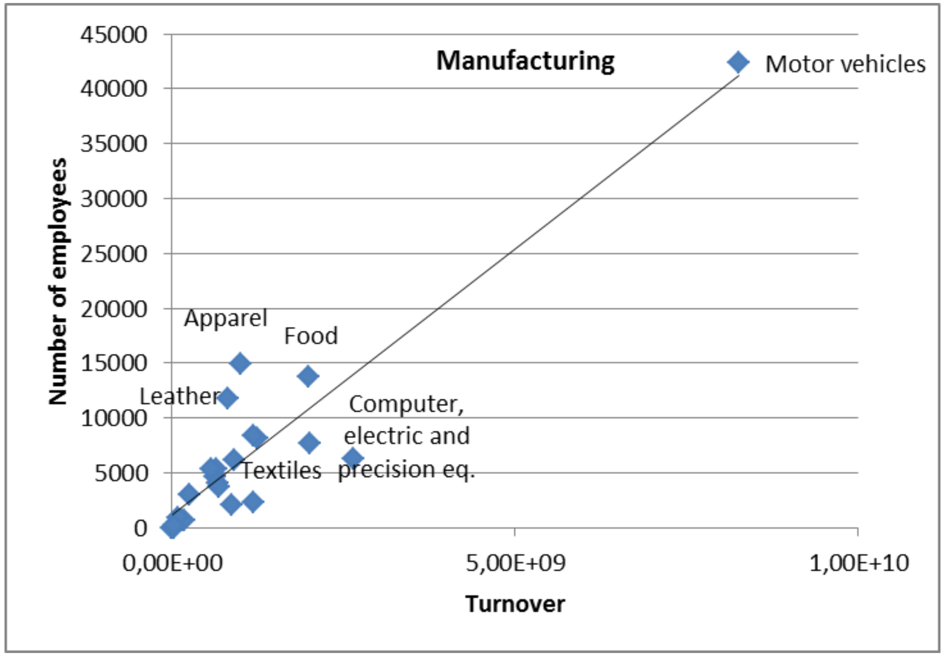
- Empirical analysis:
  - Assessment of relative value added, wages, and export performance of firms based on locations (sector-specific comparisons)
  - Accessibility and connectivity assessment
  - Assessment of determinants of location and connectivity on firm performance
- Qualitative:
  - Constraints for firms based on lagging parts of the region (skills, connectivity, etc.); general and export-specific
  - FDI location determinants and perspectives on leading and lagging parts of the region

APPENDIX

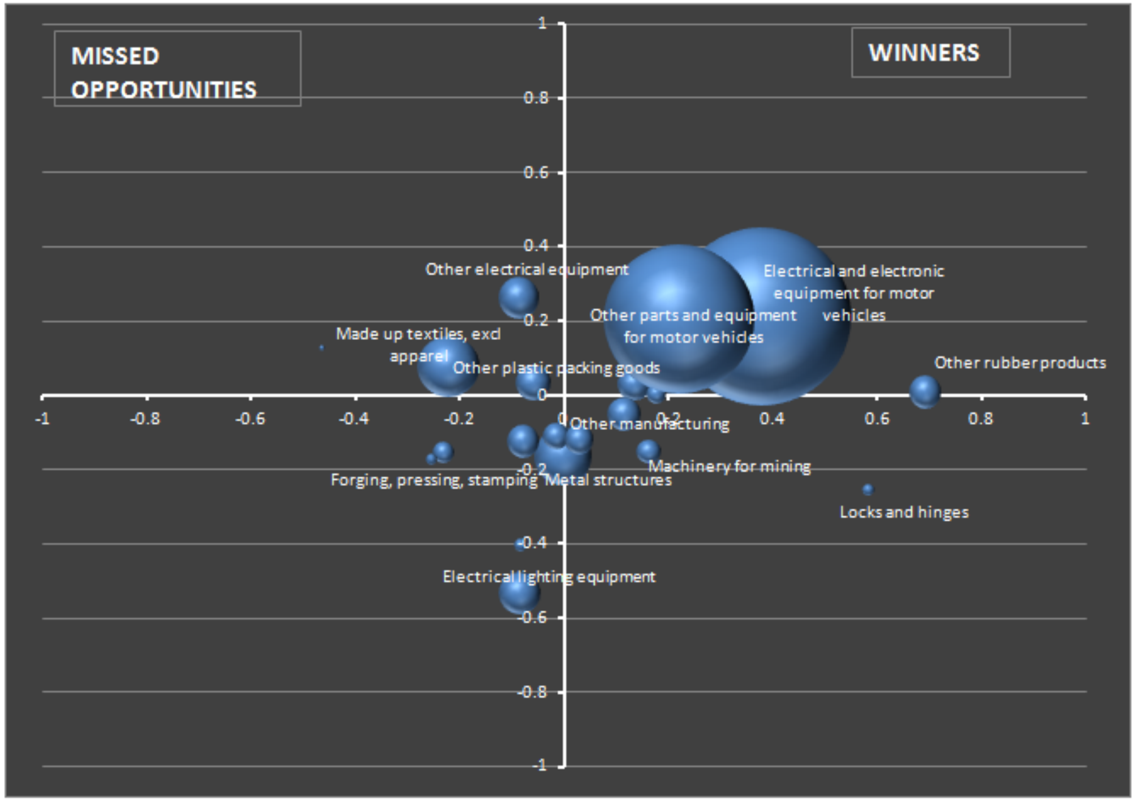
A1: STRATEGIC SECTORS

Automotive: employment and turnover (2010)





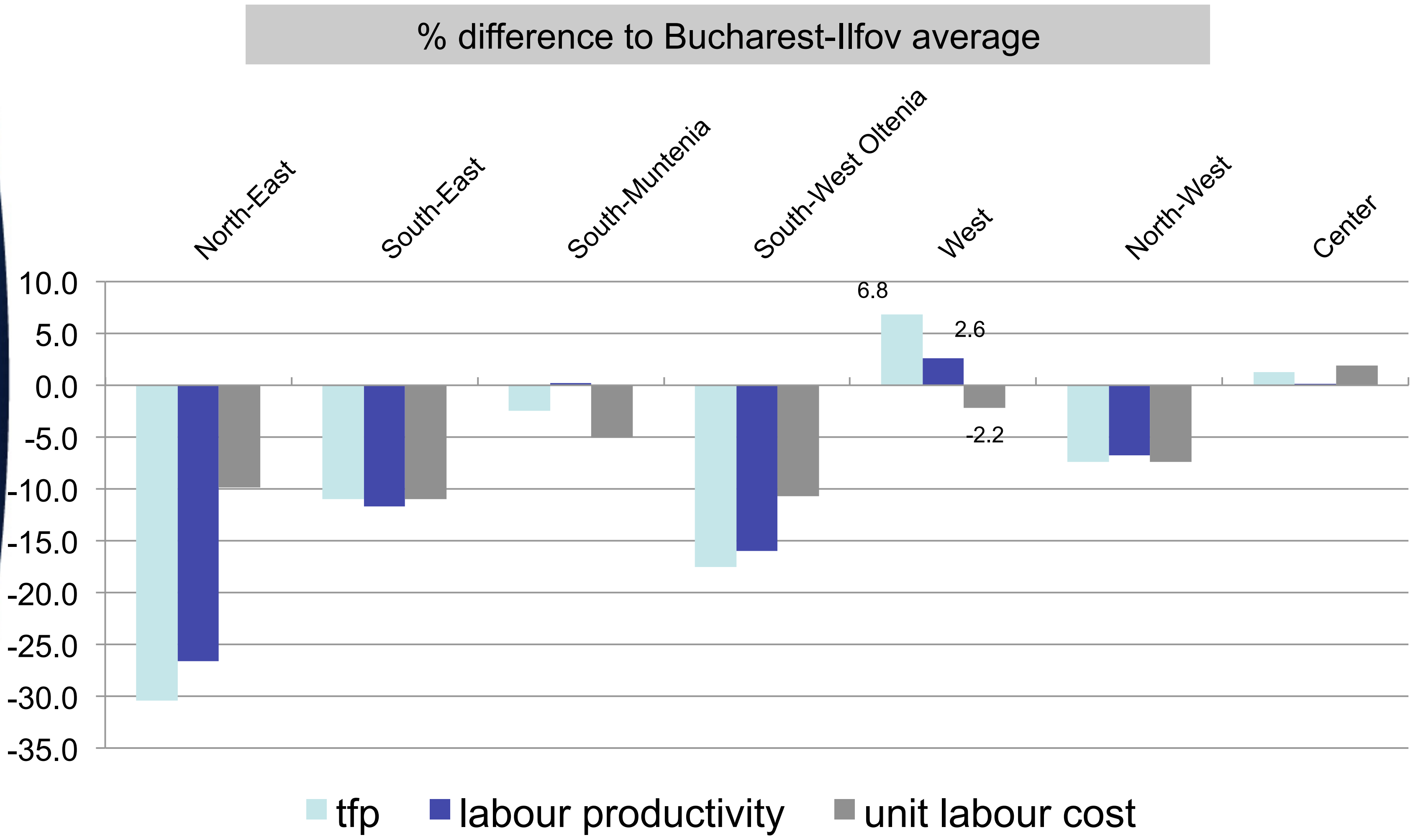
Automotive: shift-share (2008-2010)



Note: Figure presents Shift-share of West region v Romania at NACE 4 ; component NACE 4 sectors of key West region clusters shown; bubble size reflects 2010 sectoral employment in West region; color reflects broad sector (yellow=primary; blue=manufacturing; red=utilities; green=services; orange=sectors not labeled in this figure)

- Strong performance, particularly in main subsectors; mixed performance in smaller components and accessories
- Fairly good performance in electronics
- What are the prospects for moving to higher value-added activities in the sector?

Automotive productivity comparison (2010)



Basic statistics for Auto cluster firms in the West Region, 2010

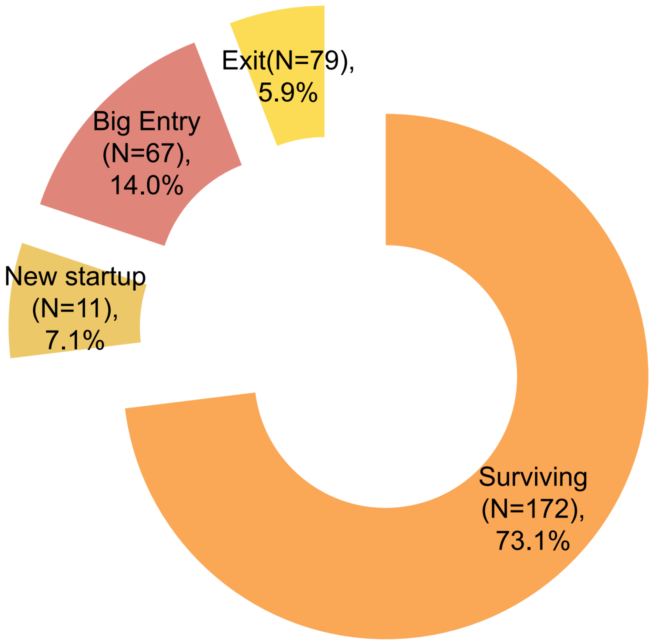
	# of Firms	Turnover (1,000 Lei)*		N. of employees		Labor Prod (value added per employee, 1,000 Lei)*		Unit labor cost (Lei per unit of added value)*	
		Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
foreign owned	115	508,000	398,000	397.9	1018.3	44.5	33.1	1.20	0.91
Domestic &Exporting	50	38,300	43,900	100.0	138.3	43.8	20.4	1.13	0.83
Domestic &NON exporting	85	58,200	86,800	38.1	88.3	39.3	24.4	1.44	1.77

* Figures are weighted by employment; nominal values are in 2000 Rom Lei

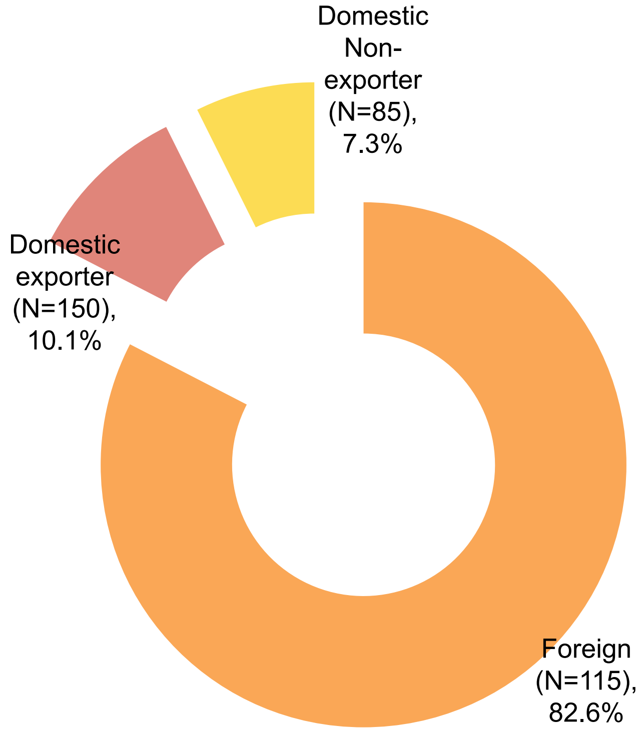
TFP growth decomposition: Auto cluster in the WR, 2008-10*

*Clusters are defined for NACE rev 2 classification, which is available only for the 2008-10 panel

By entry/exit components



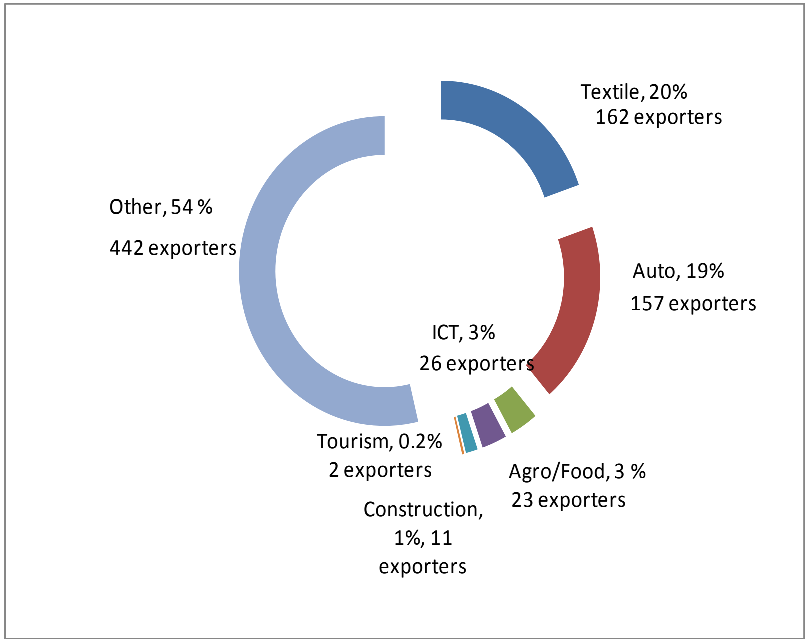
By ownership and exporting status



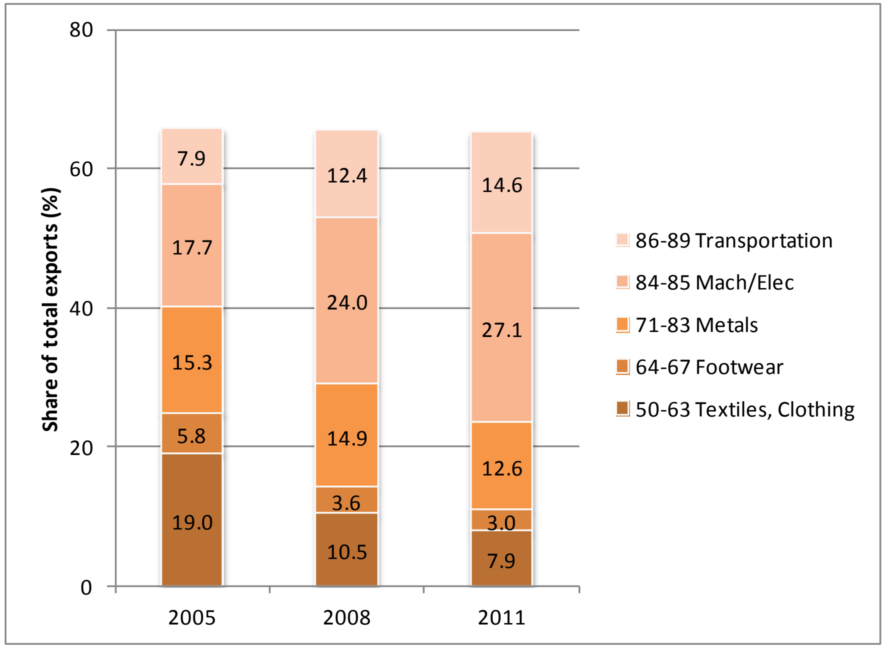
TFP growth (08-10) = 0.74 percentage points

High concentration of exporters in automotive

West Region Exporters (2011)



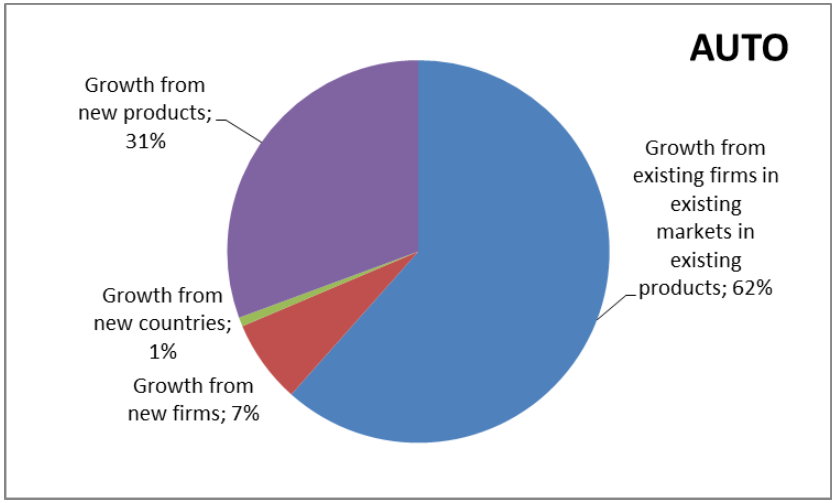
West Region main exports in value (%)

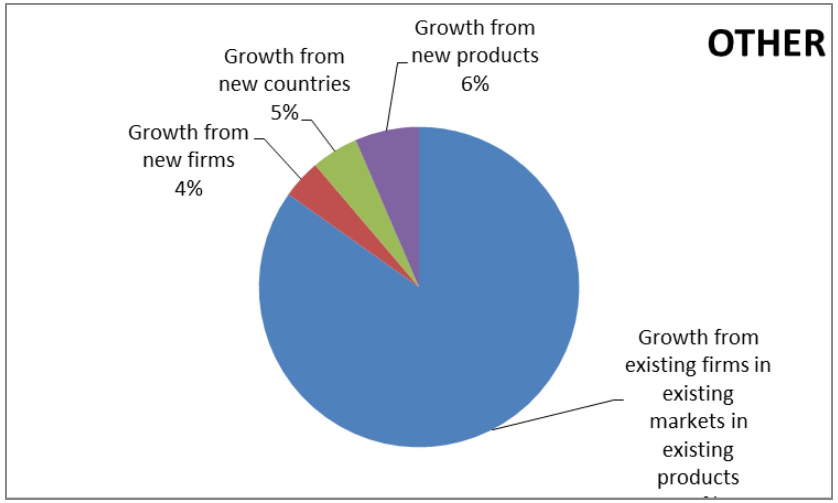


- Textiles and auto sector account for 40% of all West Region's exporters, the other strategic sectors account for a marginal share of exporters.
- Electrical machinery is the most important sector in terms of export value (27%), followed by transport equipment (14.6%) and metals (12.6%). Textiles and footwear cover 10.9% together.
- Lack of dynamism on products and markets may be linked to value chain structures in these sectors

Margins of exports

Export Growth: intensive vs. extensive margin (2010)





Exports in the auto sector dominated by large foreign owned firms

Number of exporters

	2008	2009	2010
big (> 250 employees)	32	26	33
mid (50 to 250 employees)	65	62	57
small (< 50 employees)	76	83	78
Total	**173**	**171**	**168**

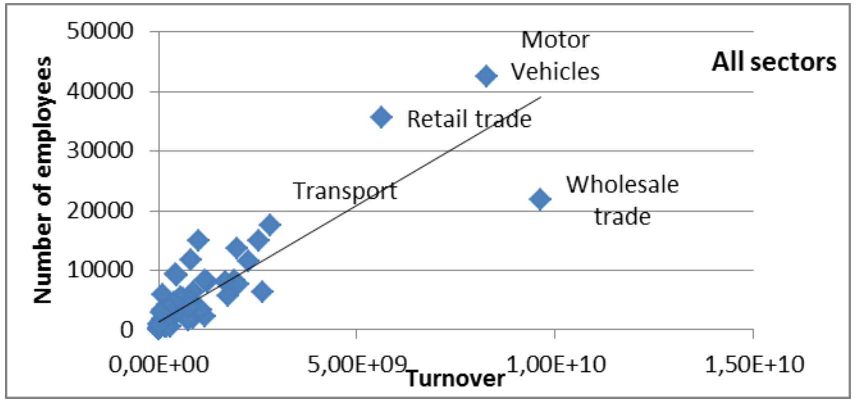
	2008	2009	2010
domestic	33	36	31
fully foreign	98	96	100
some foreign	24	23	26
N.A.	18	16	11
Total	**173**	**171**	**168**

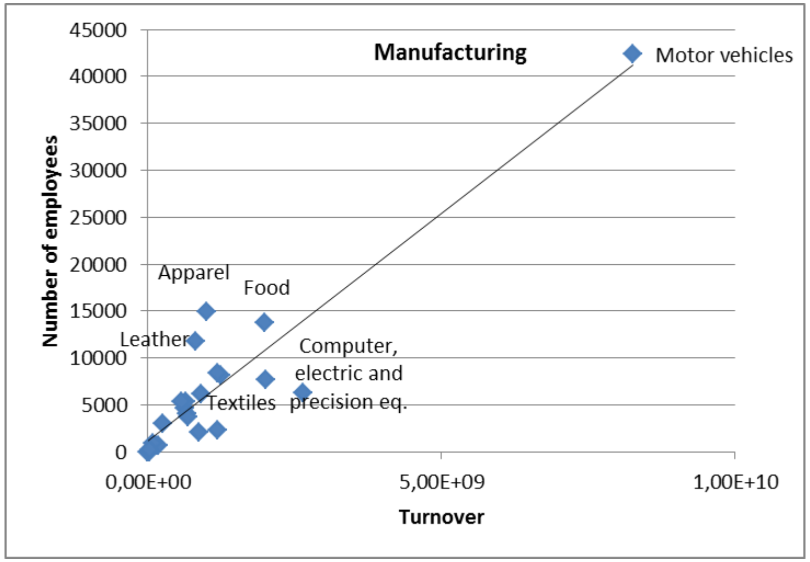
Share (%) of export value

	2008	2009	2010
big (> 250 employees)	78.7	80.7	87.1
mid (50 to 250 employees)	17.4	15.7	9.8
small (< 50 employees)	3.9	3.6	3.1
Total	**100.0**	**100.0**	**100.0**

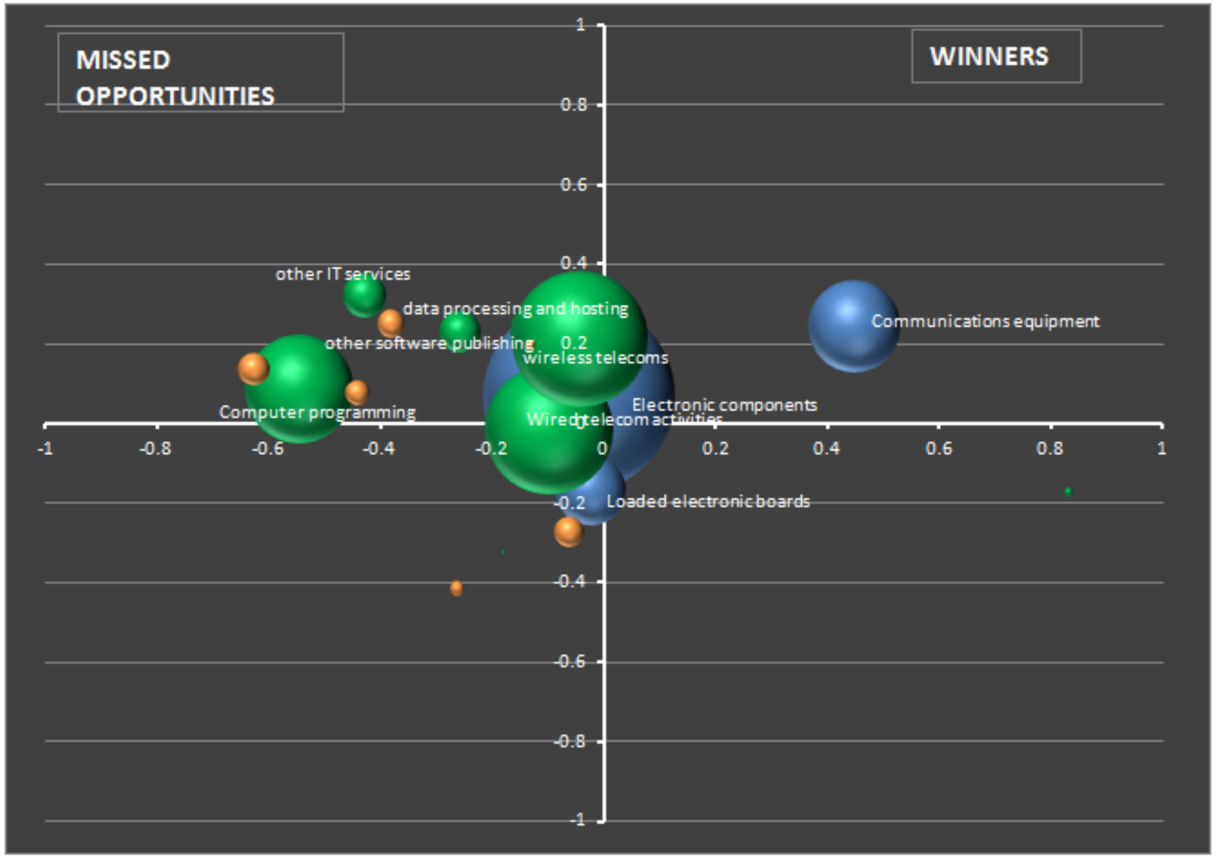
	2008	2009	2010
domestic	6,2	2,8	5,8
fully foreign	90,9	95,0	92,6
some foreign	2,4	1,7	1,5
N.A.	0,5	0,5	0,1
Total	**100**	**100**	**100**

ICT: employment and turnover (2010)





ICT: shift-share (2008-2010)



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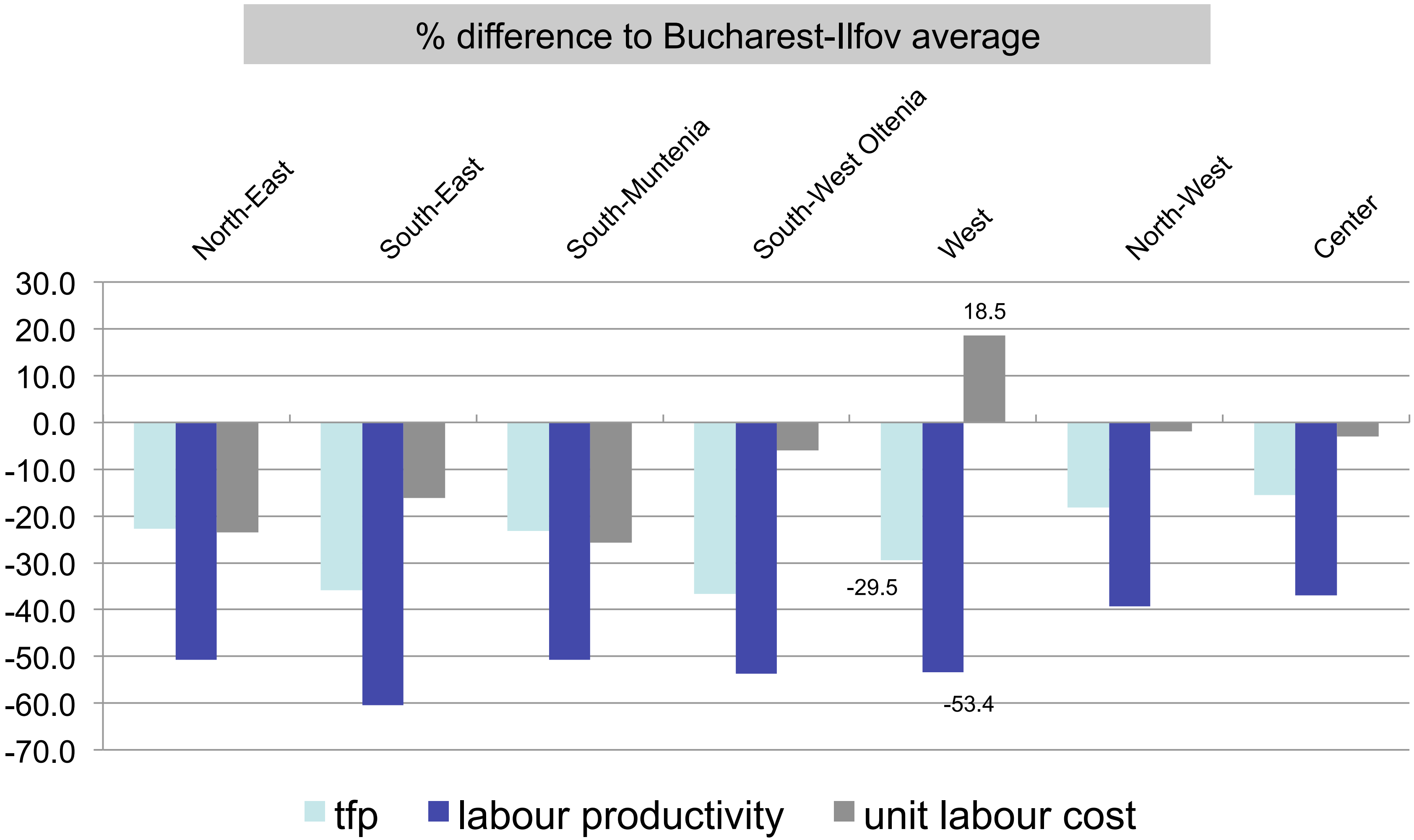
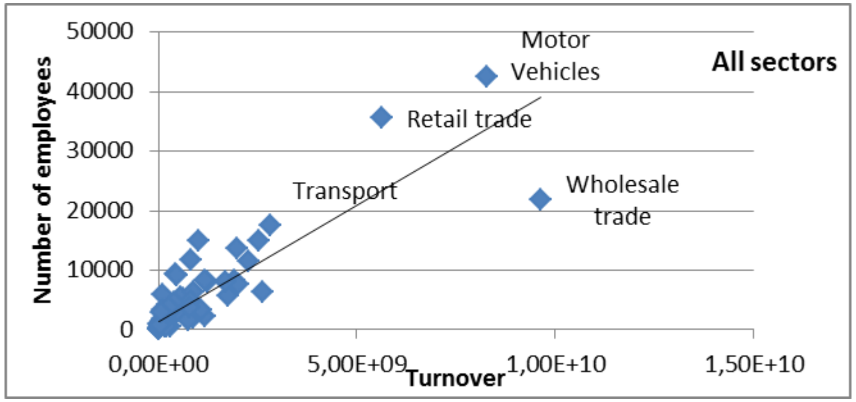
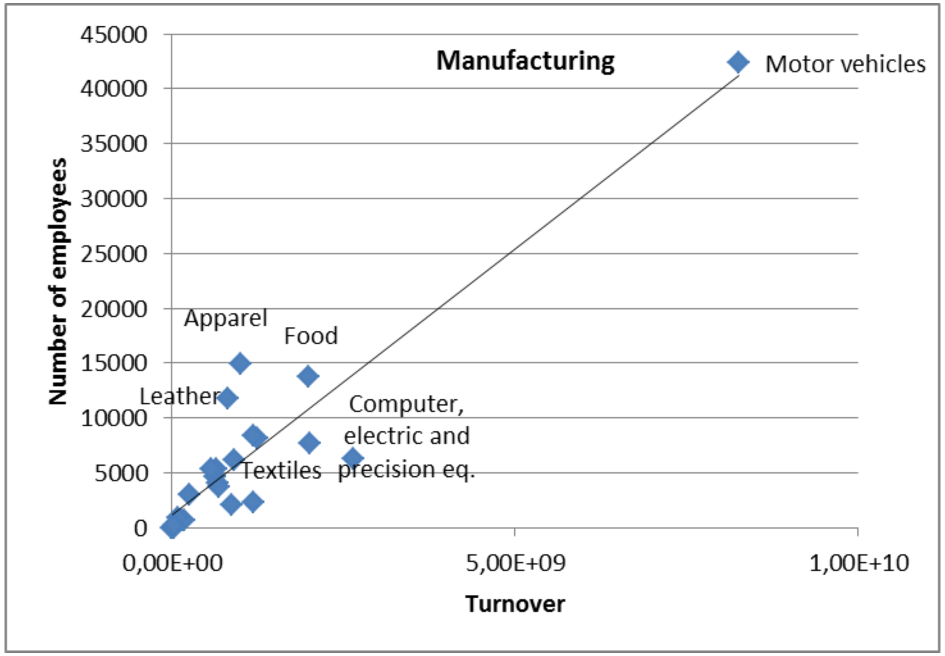
- Relatively weak performance, with exception of communications equipment
- Manufacturing related activities outperforming services
- What is the basis for the selection of ICT as a 'strategic sector', given its small scale and relatively limited growth?
- How linked is the ICT sector to the main economic engine sectors of the region?

ICT productivity comparison (2010)

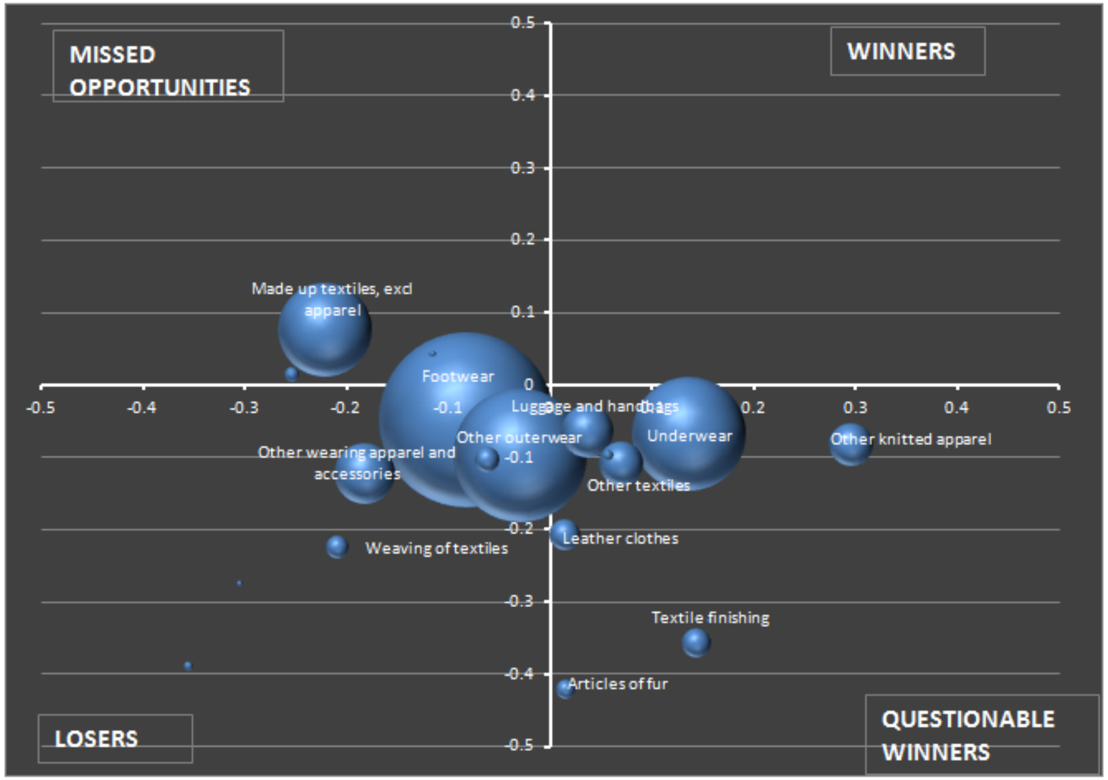


Textiles: employment and turnover (2010)





Textiles: shift-share (2008-2010)



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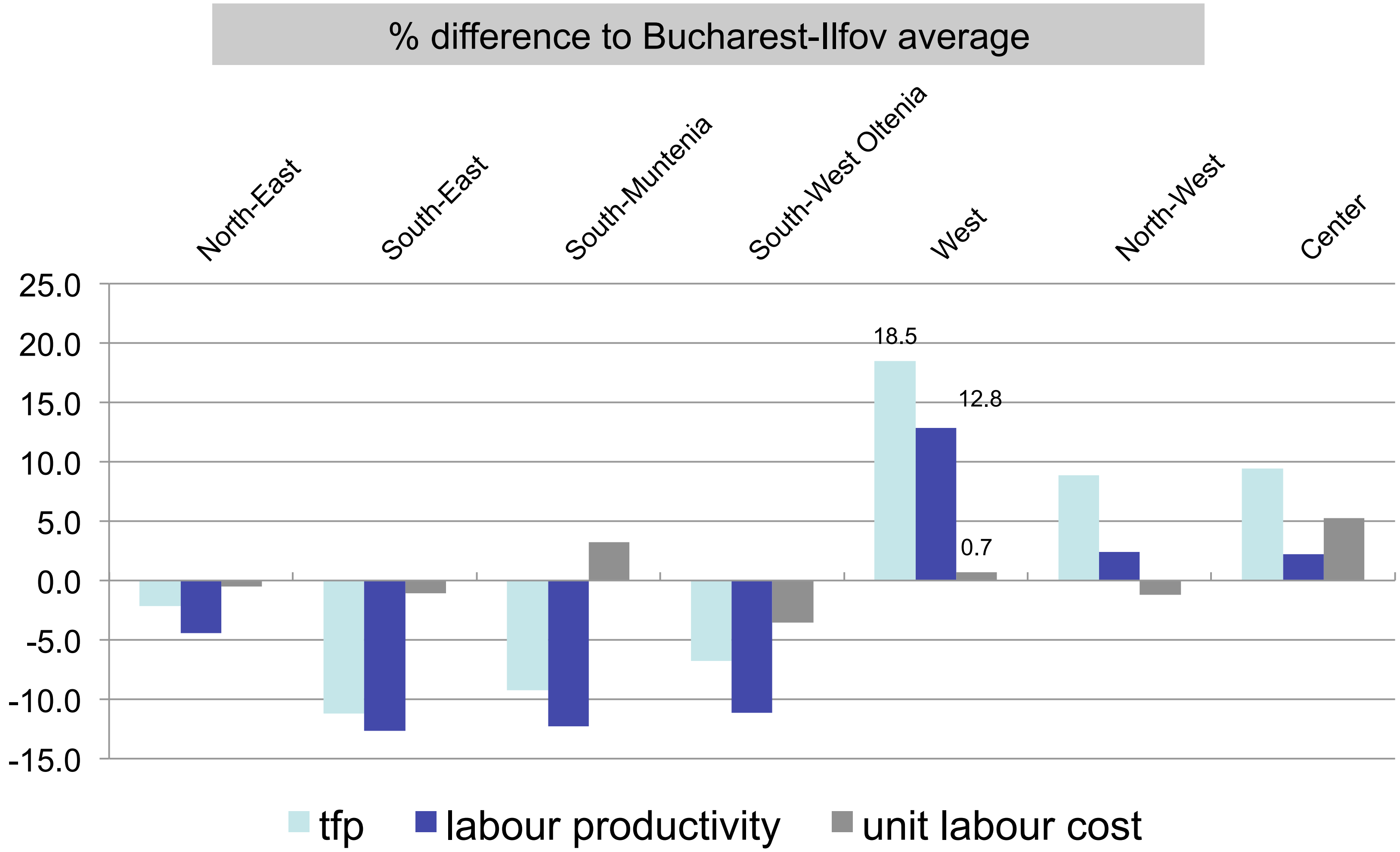
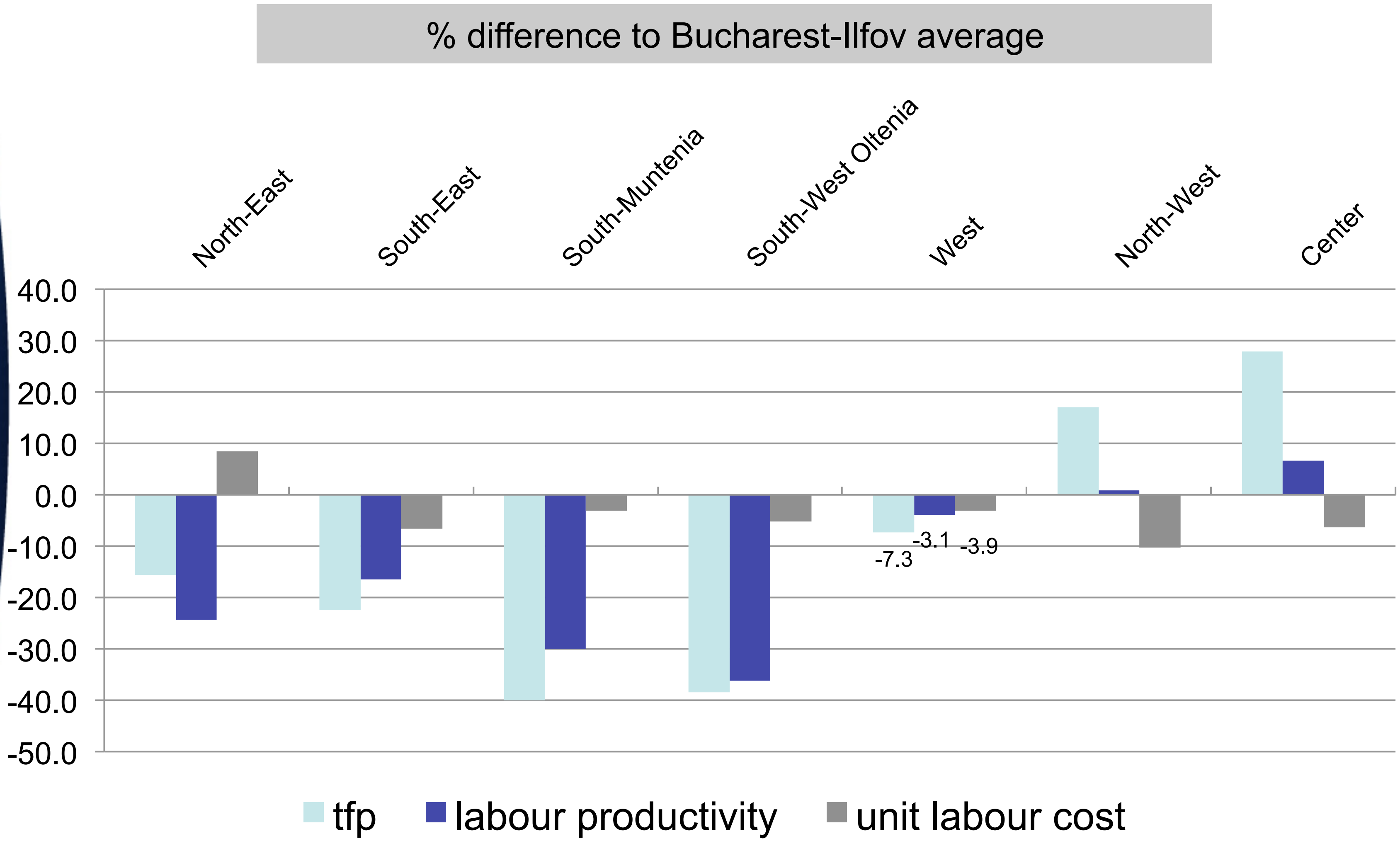
- Largest subsectors (footwear, outwear) in decline
- But many smaller sectors related to textiles still in growth despite national decline
- Are these sectors in terminal decline? Do workers in these sectors transition well into growing sectors (e.g. automotive)?

Textiles* productivity comparison (2010)

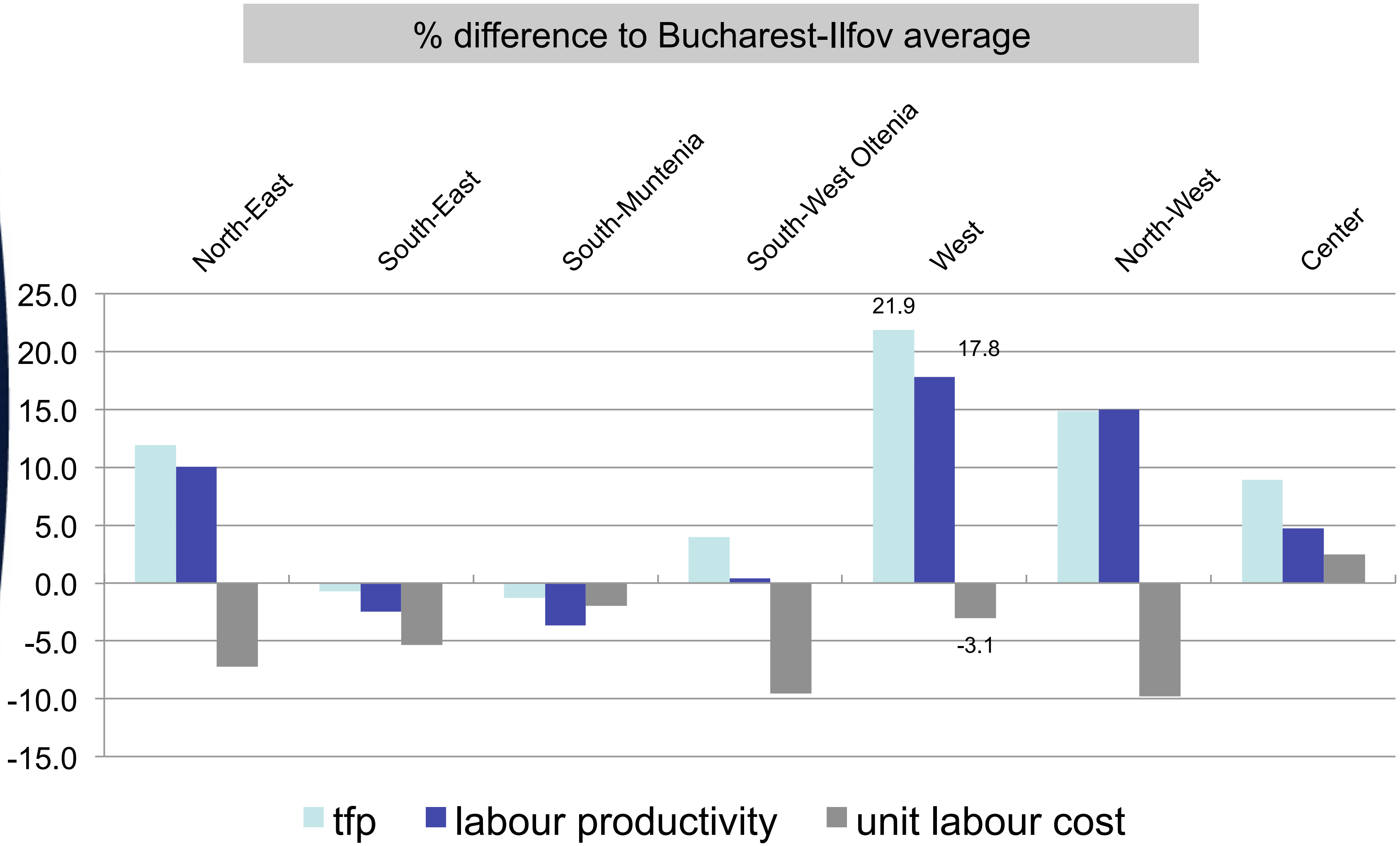


NACE 13 (except 1392), NACE 14 and NACE15

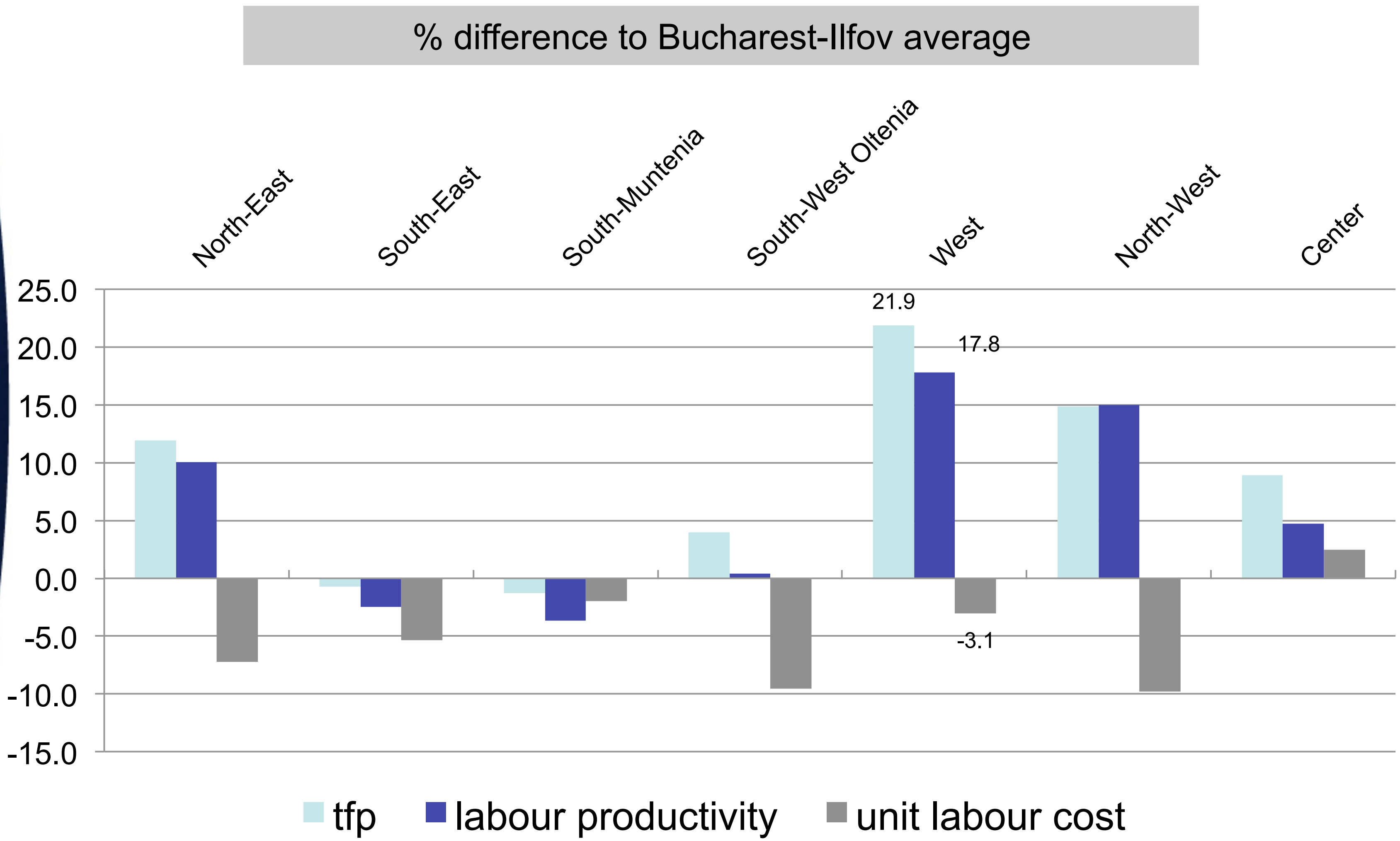
(NACE 13 – 1392): Man. of Textiles, 2010



(NACE 14): Man. of Wearing Apparel, 2010

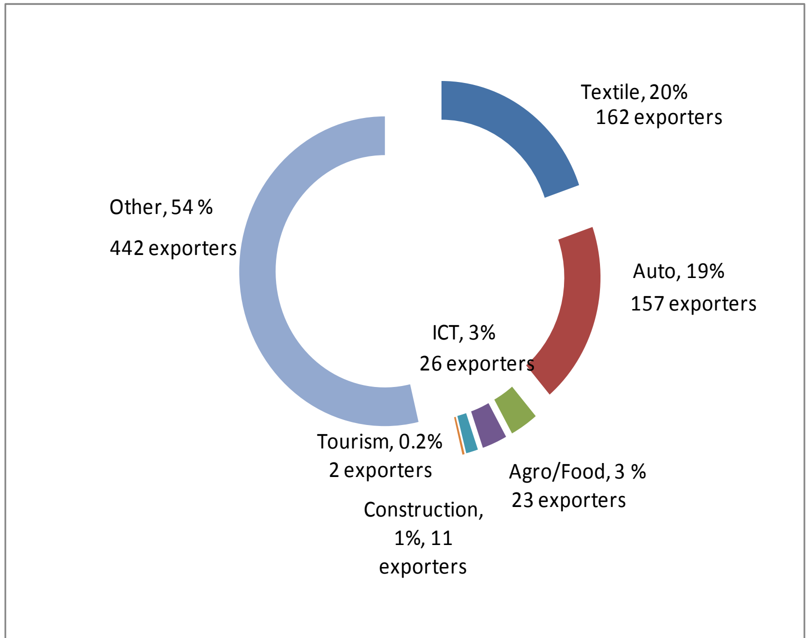


(NACE 15): Man. of Leather, 2010

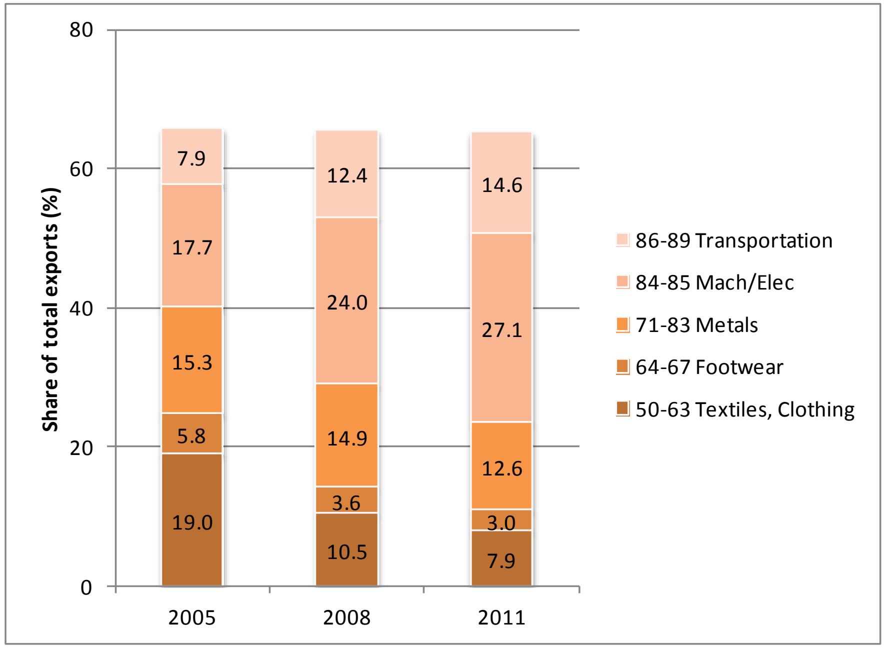


High concentration of exporters in textiles

West Region Exporters (2011)



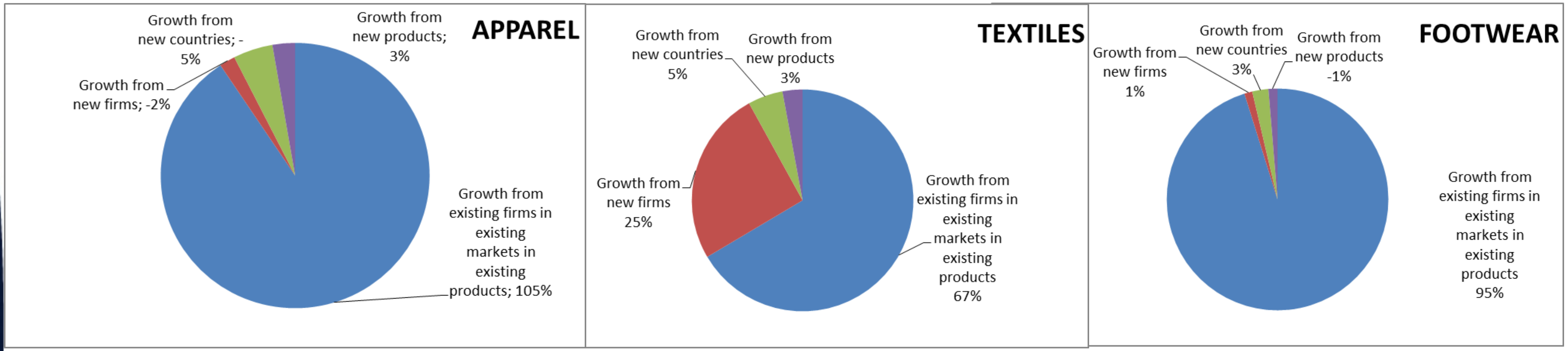
West Region main exports in value (%)



- Textiles and auto sector account for 40% of all West Region's exporters, the other strategic sectors account for a marginal share of exporters.
- Electrical machinery is the most important sector in terms of export value (27%), followed by transport equipment (14.6%) and metals (12.6%). Textiles and footwear cover 10.9% together.
- Lack of dynamism on products and markets may be linked to value chain structures in these sectors

Textiles: margins of exports

Export Growth: intensive vs. extensive margin (2010)



Textiles: Exports dominated by large foreign owned firms

Number of exporters

	2008	2009	2010
big (> 250 employees)	26	22	19
mid (50 to 250 employees)	115	92	93
small (< 50 employees)	65	79	74
Total	**206**	**193**	**186**

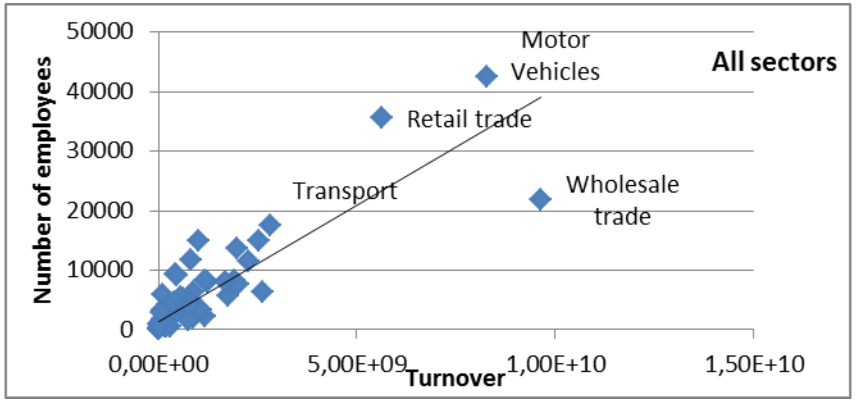
	2008	2009	2010
domestic	54	47	47
fully foreign	111	102	96
some foreign	27	24	19
N.A.	14	20	24
Total	**206**	**193**	**186**

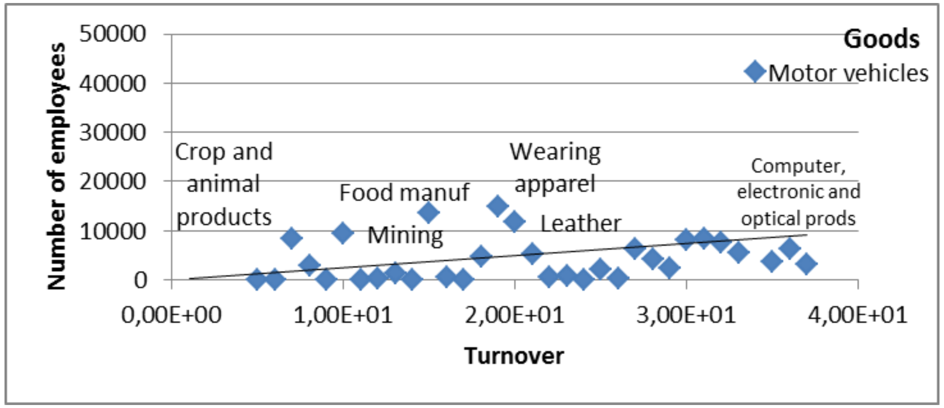
Share (%) of export value

	2008	2009	2010
big (> 250 employees)	48.7	40.9	39.9
mid (50 to 250 employees)	42.9	47.0	45.3
small (< 50 employees)	8.4	12.1	14.9
Total	**100.0**	**100.0**	**100.0**

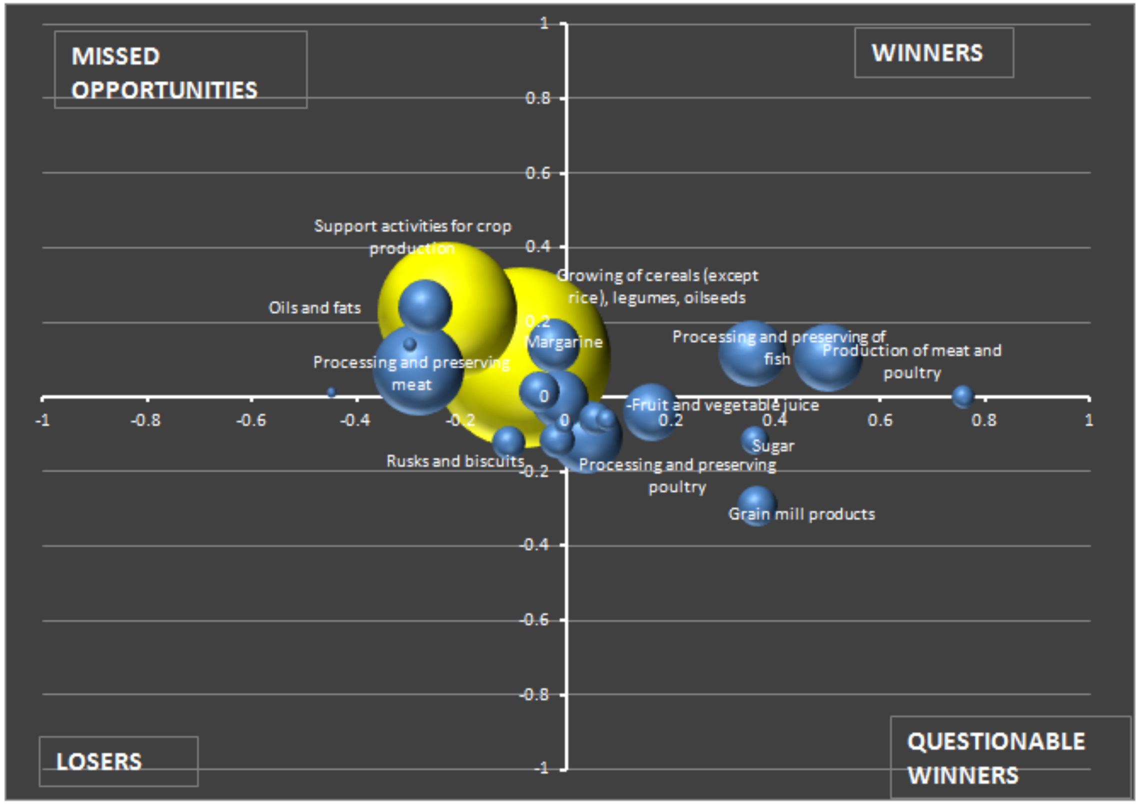
	2008	2009	2010
domestic	15	17	16
fully foreign	68	67	72
some foreign	16	15	11
N.A.	2	1	1
Total	**100**	**100**	**100**

Agri-food: employment and turnover (2010)





Agri-food: shift-share (2008-2010)



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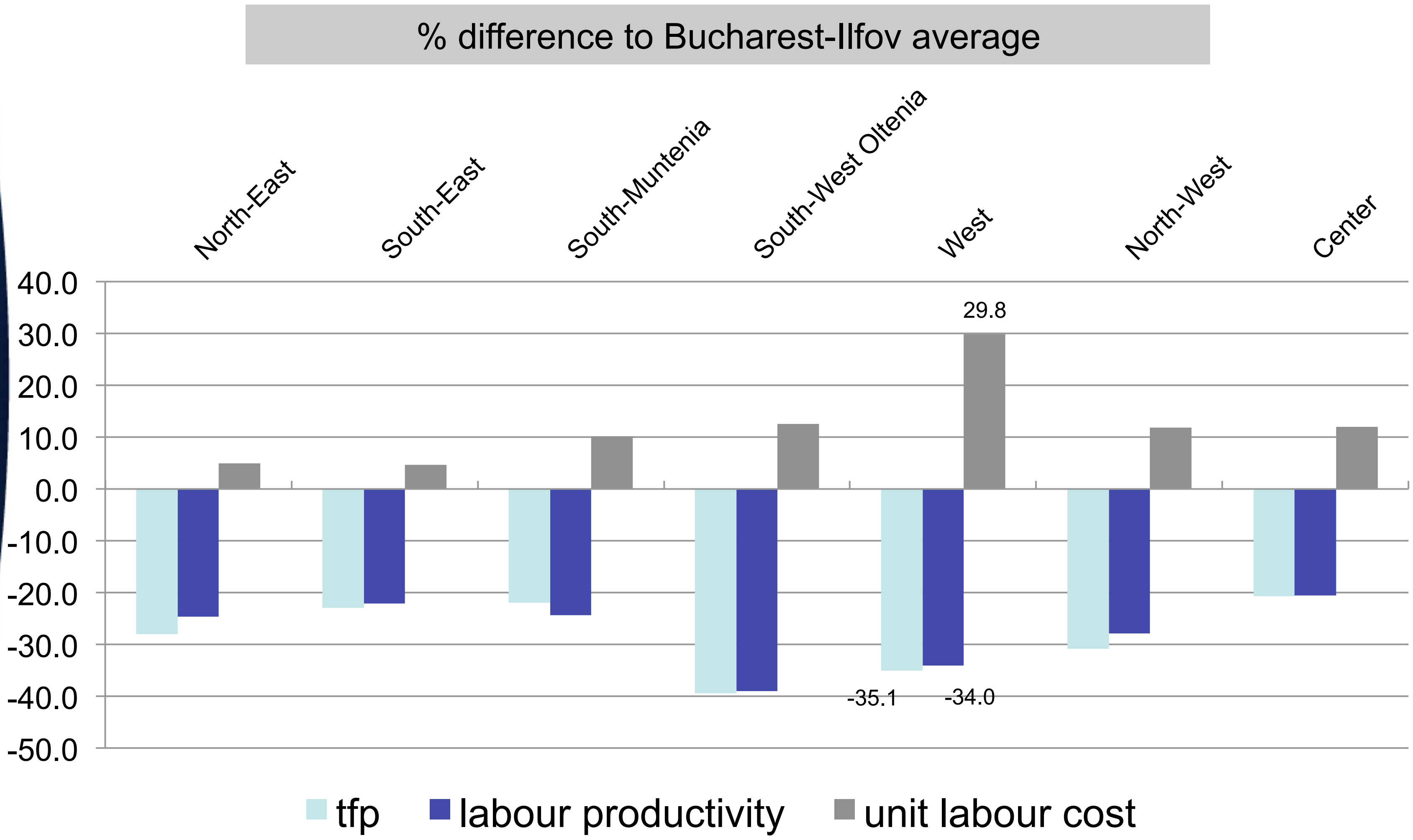
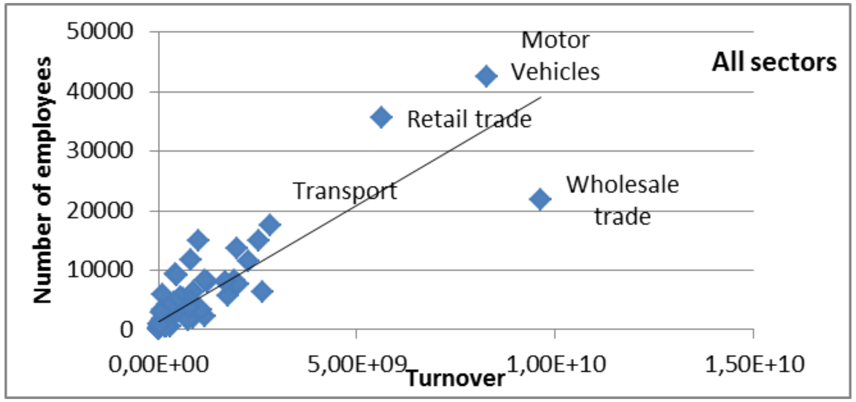
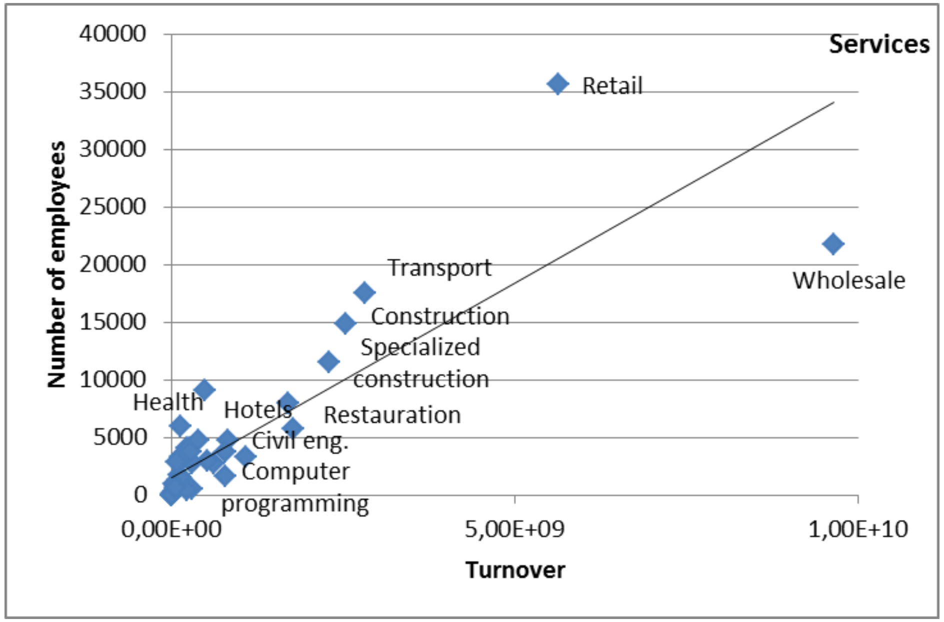
- Largest subsectors are stagnant or in decline, but a number activities showing dynamism, including meat and poultry production and fish processing

Agri-food productivity comparison (2010)

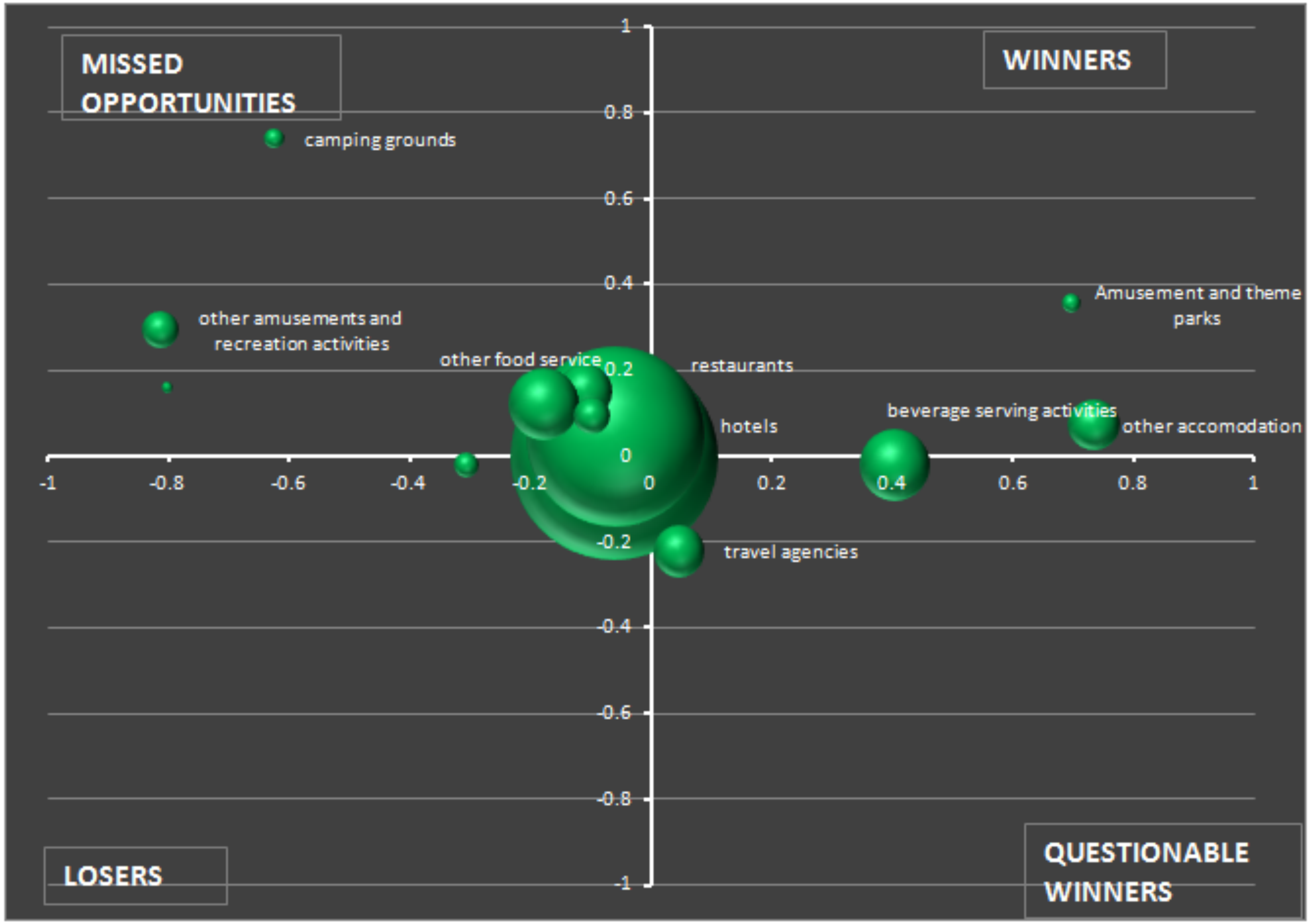


Tourism: employment and turnover (2010)

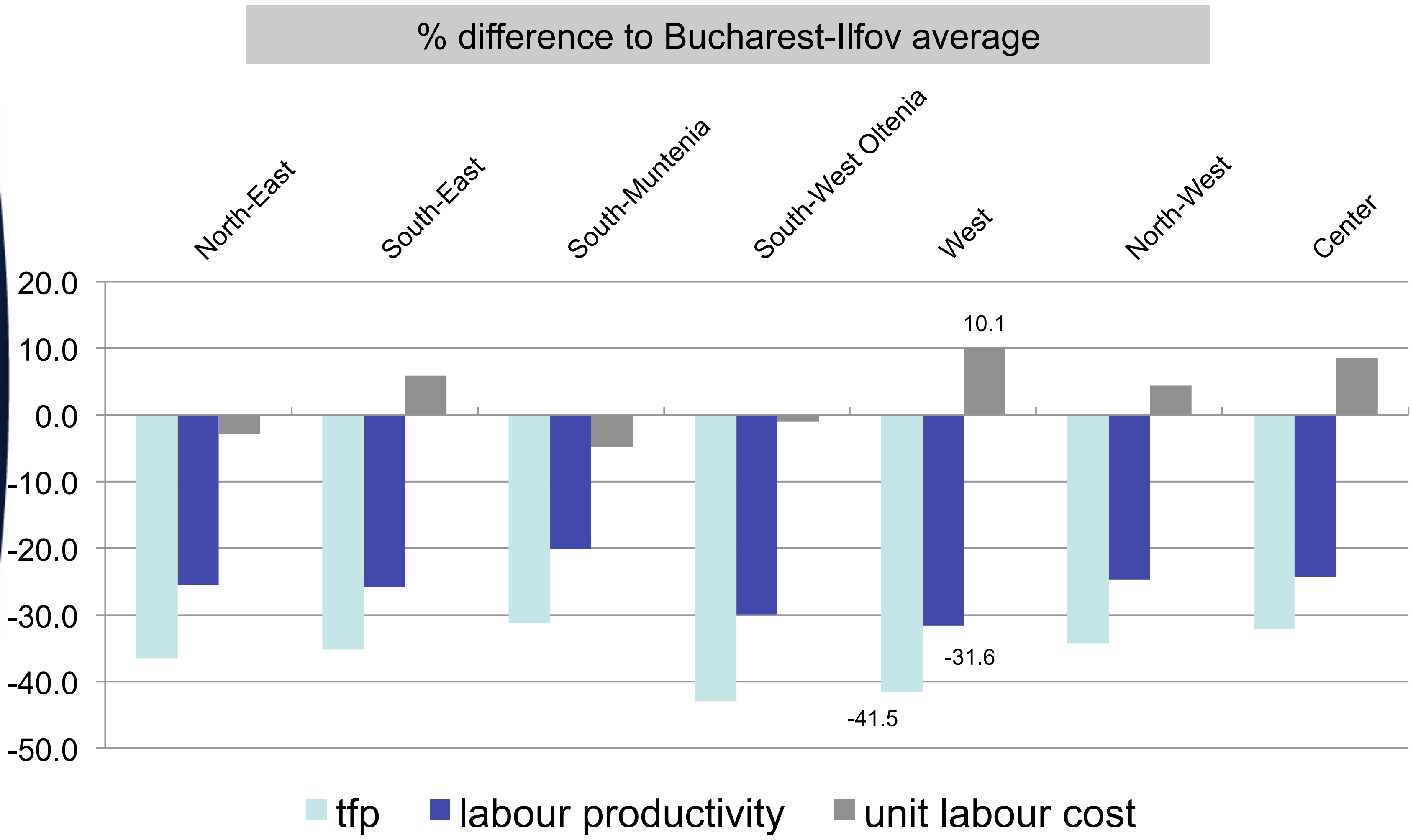




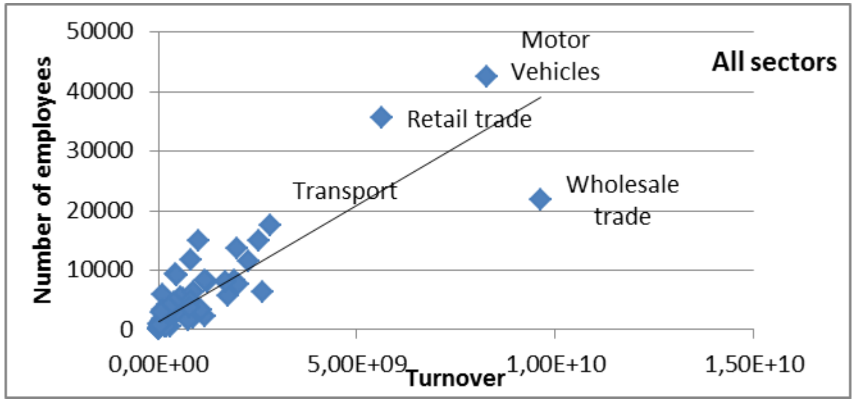
Tourism: shift-share (2008-2010)

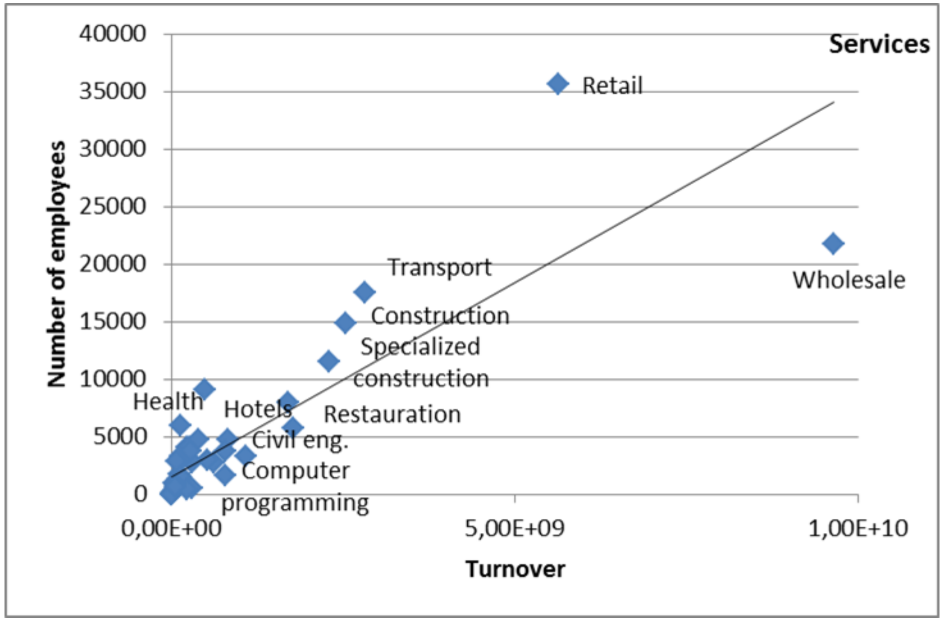


Tourism productivity comparison (2010)

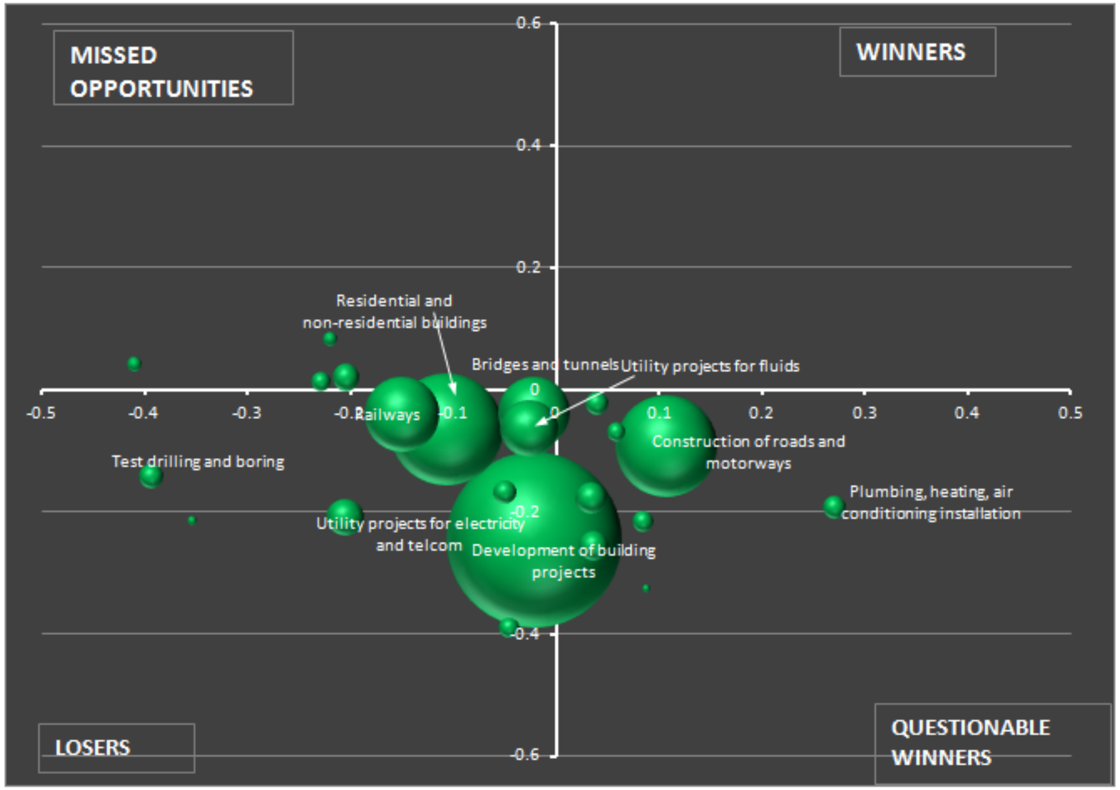


Construction: employment and turnover (2010)





Construction: shift-share (2008-2010)



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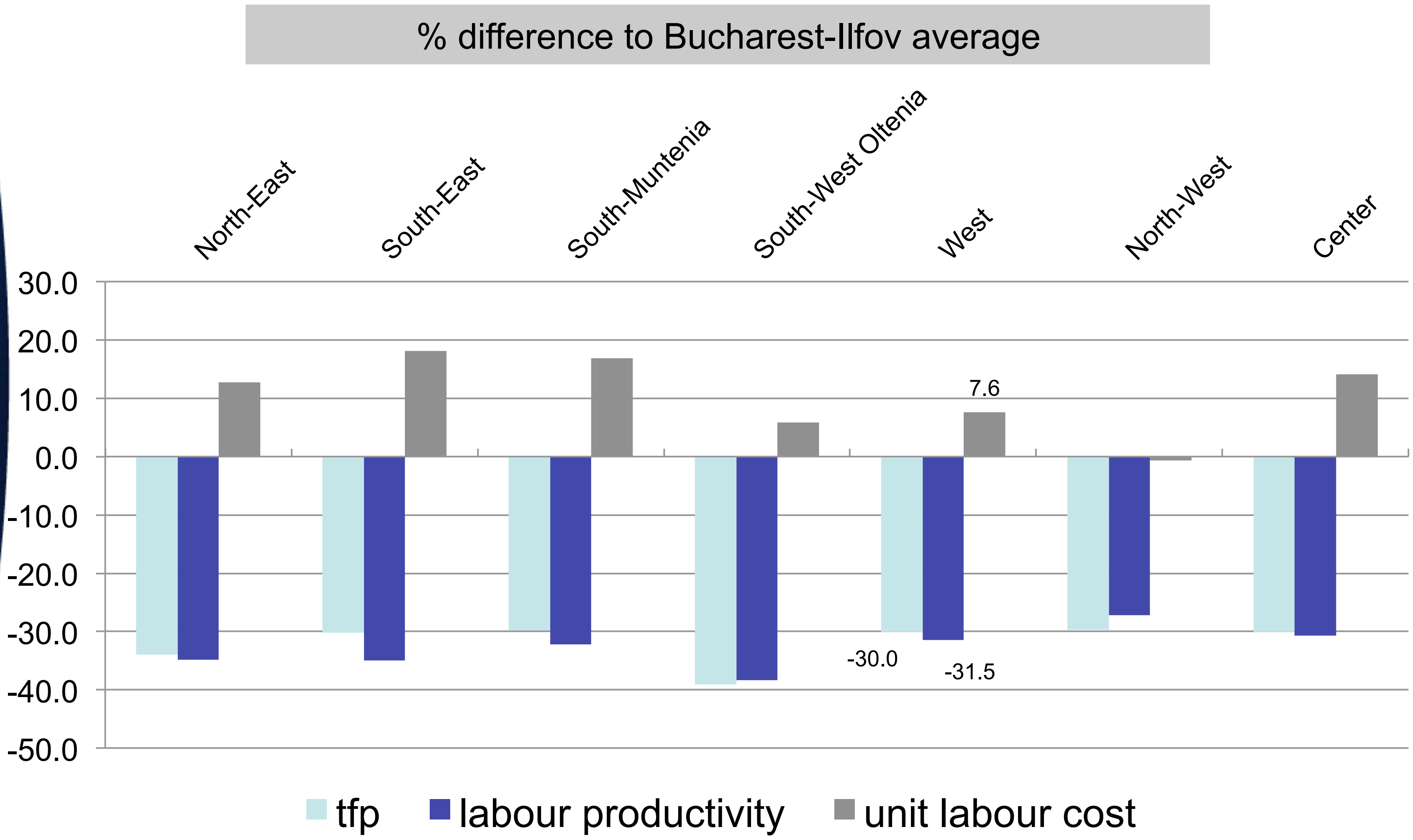
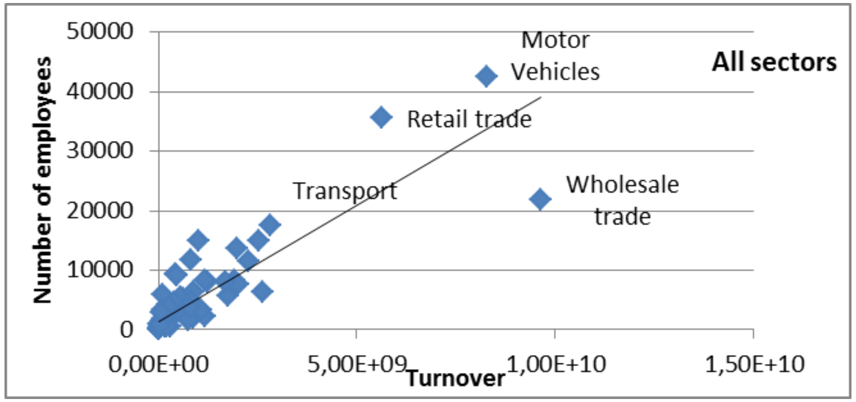
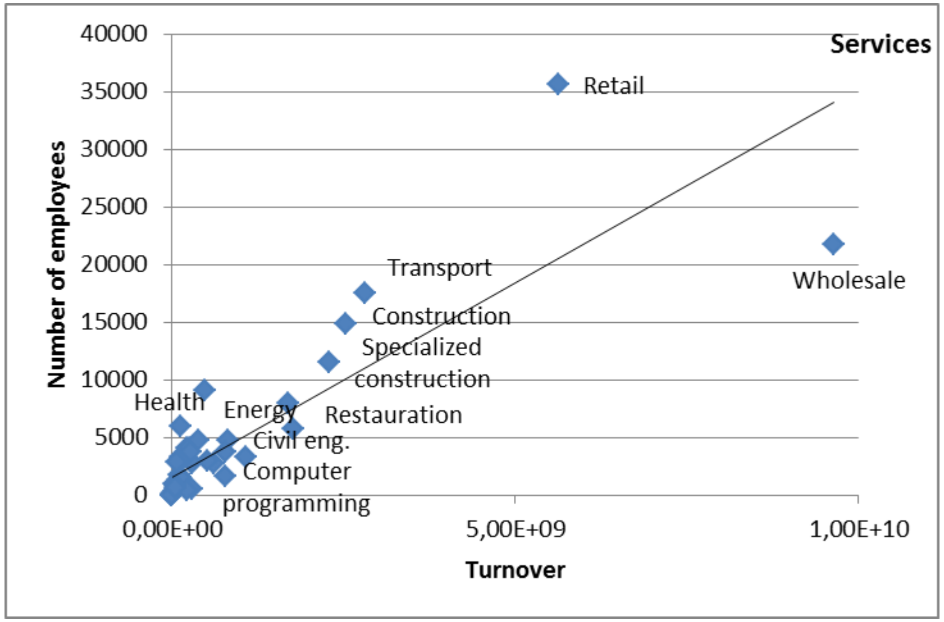
- Declining performance in the construction sector may reflect the economic crisis period more than anything else

Construction productivity comparison (2010)

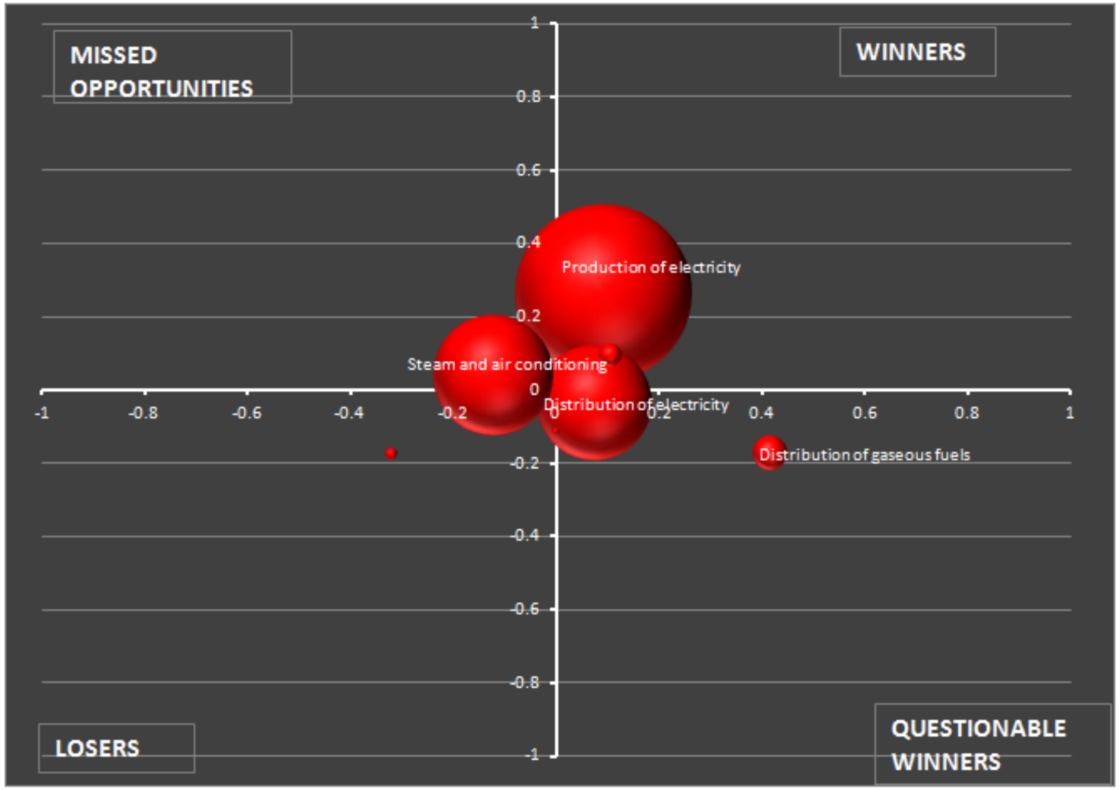


Energy: employment and turnover (2010)





Energy: shift-share (2008-2010)



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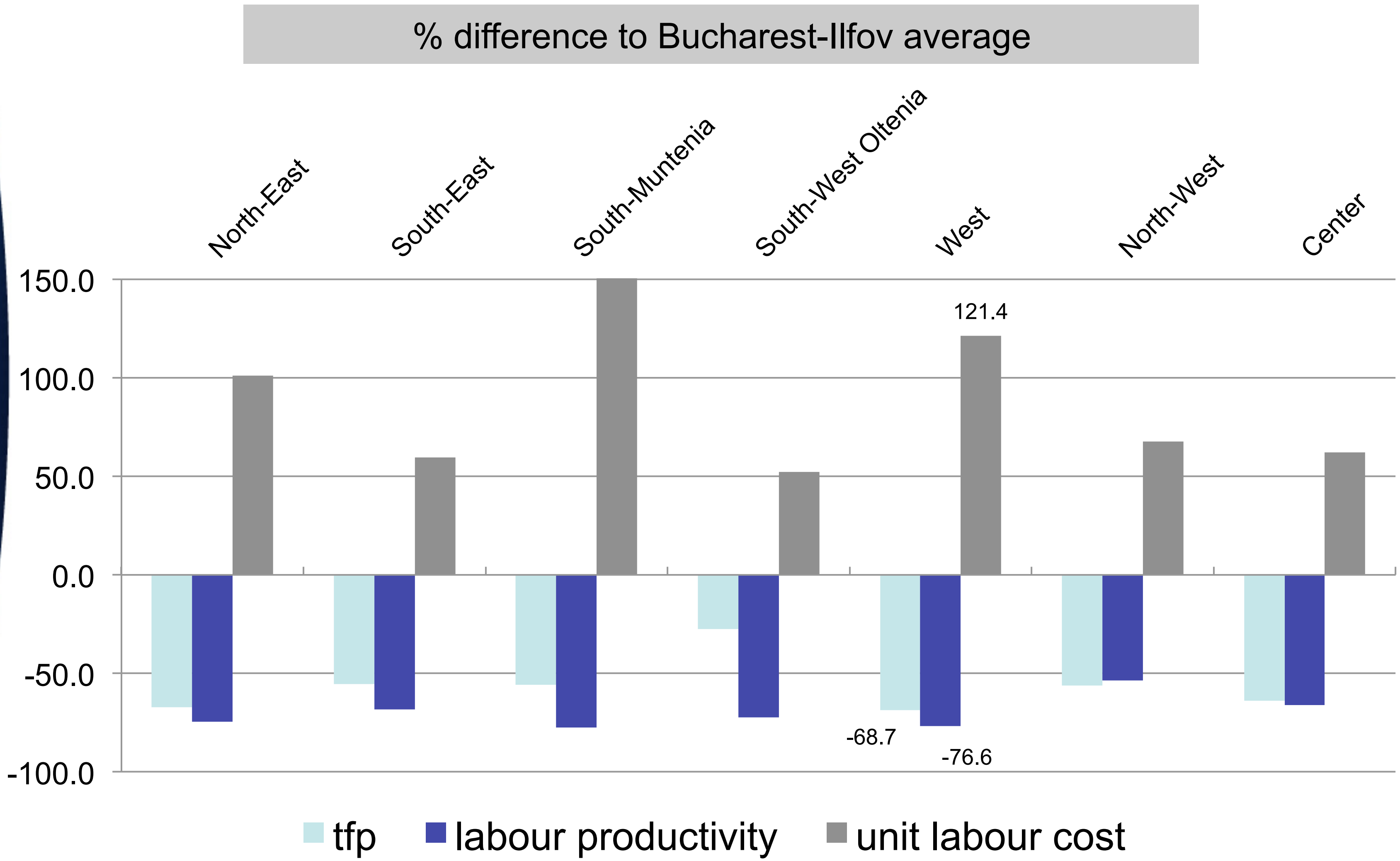
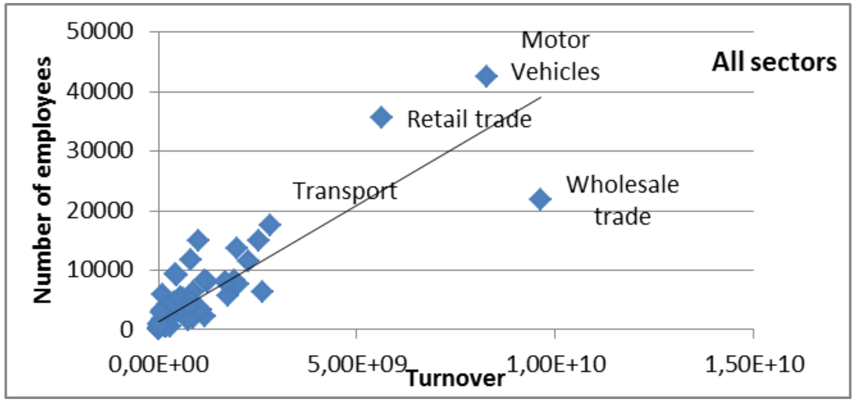
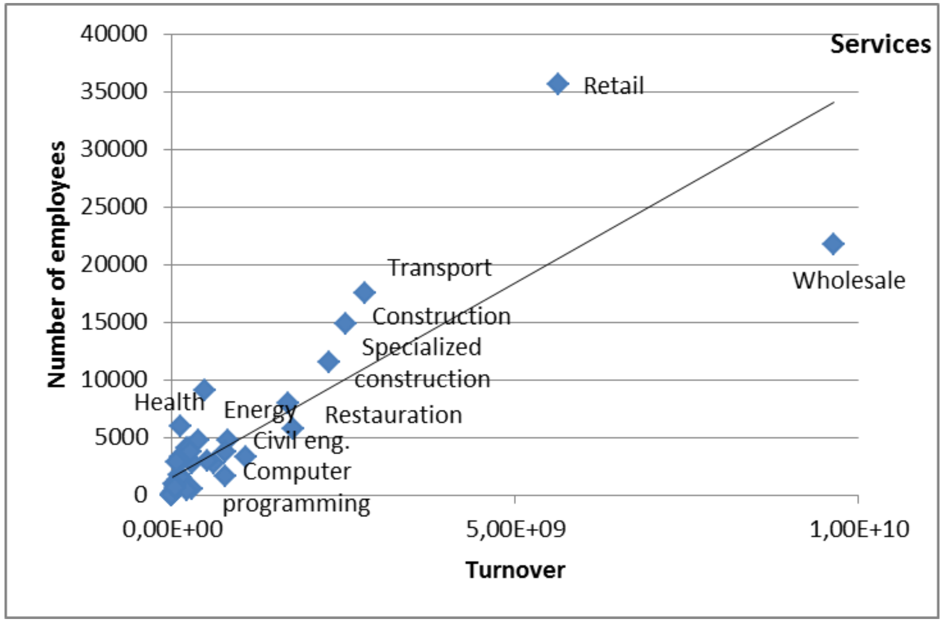
- No significant trends of growth or decline at NACE 2 level

Energy productivity comparison (2010)

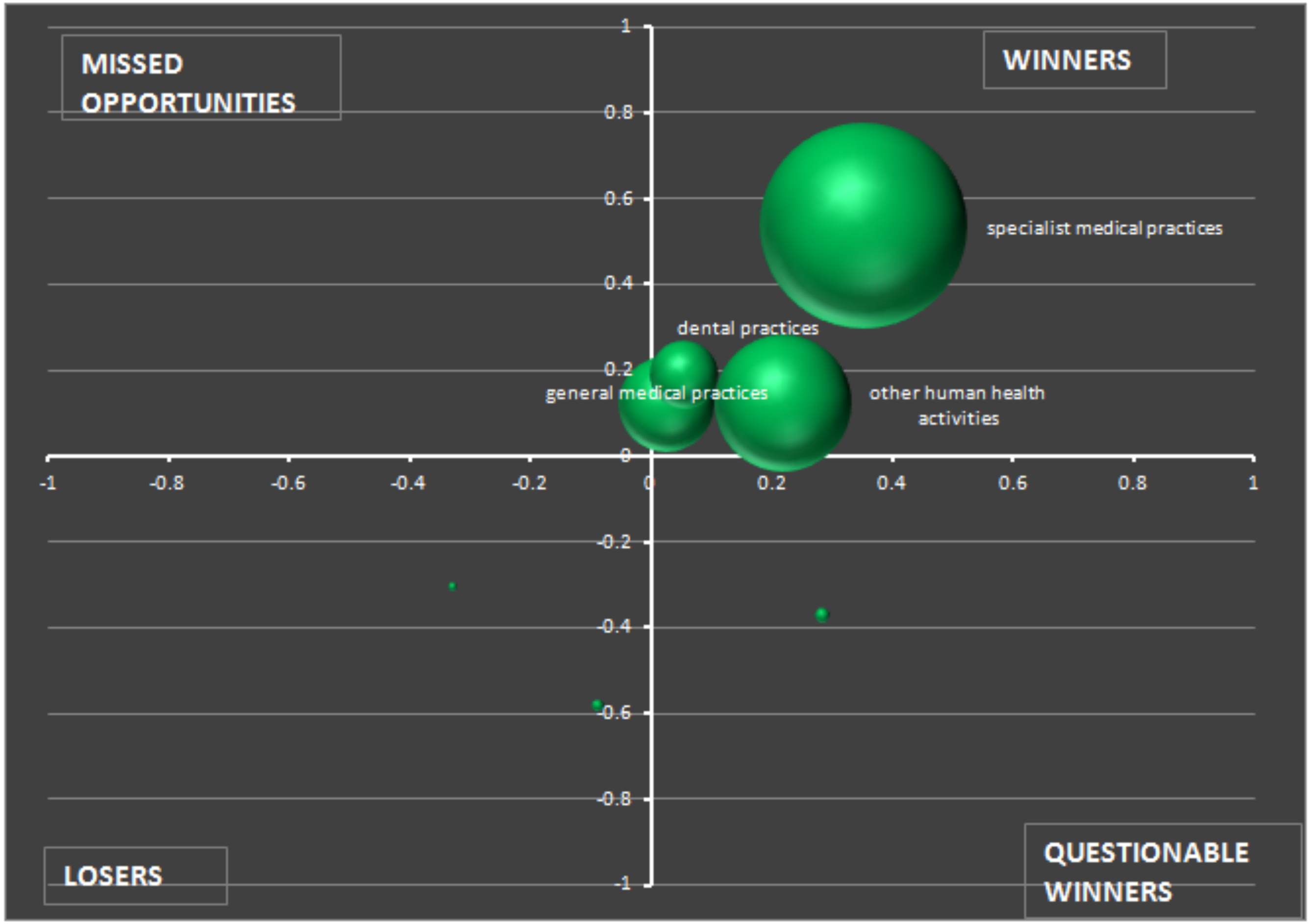


Health: employment and turnover (2010)



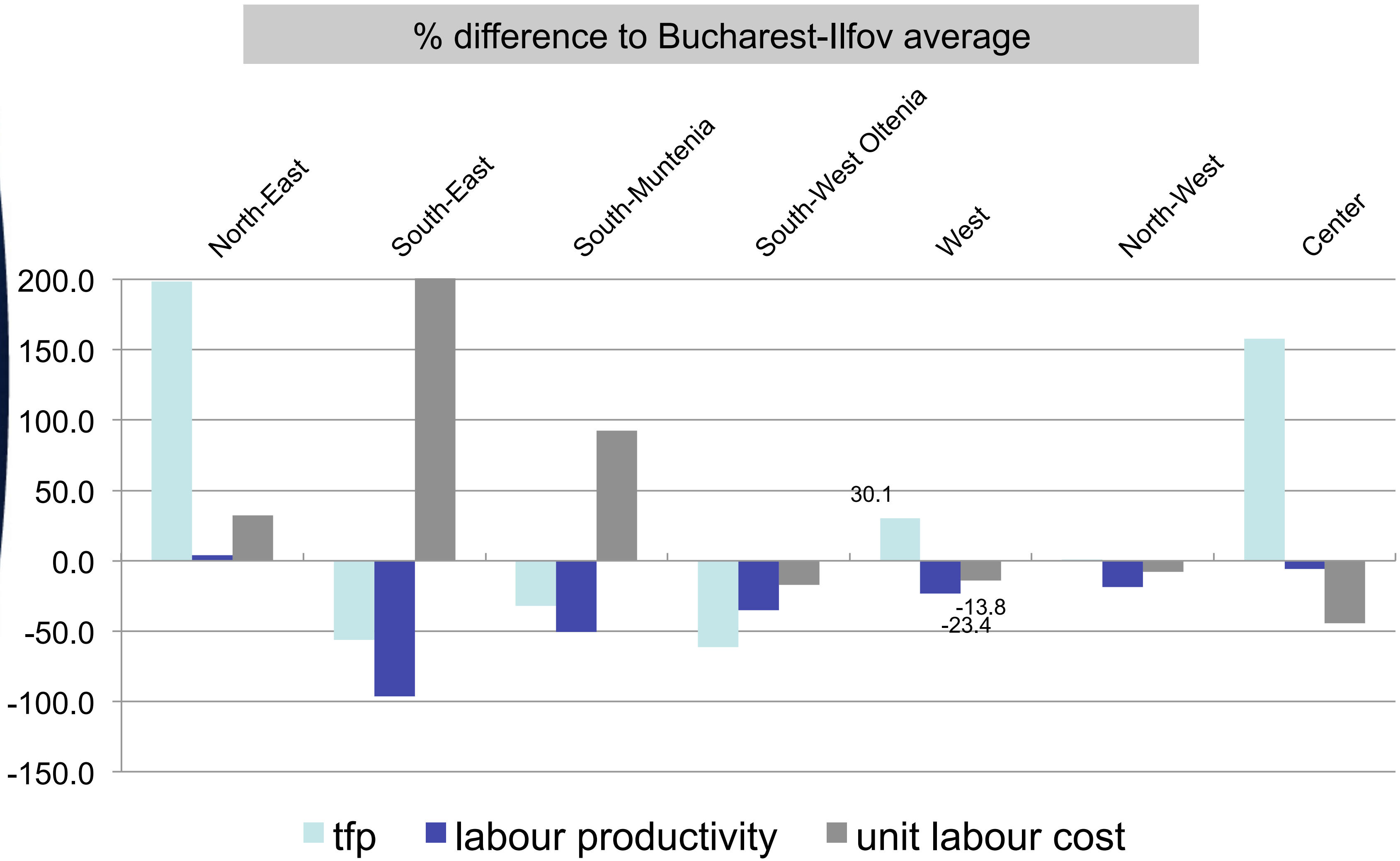


Health: shift-share (2008-2010)



Note: Figure presents Shift-share of West region v Romania at NACE 4 ; component NACE 4 sectors of key West region clusters shown; bubble size reflects 2010 sectoral employment in West region; color reflects broad sector (yellow=primary; blue=manufacturing; red=utilities; green=services; orange=sectors not labeled in this figure)

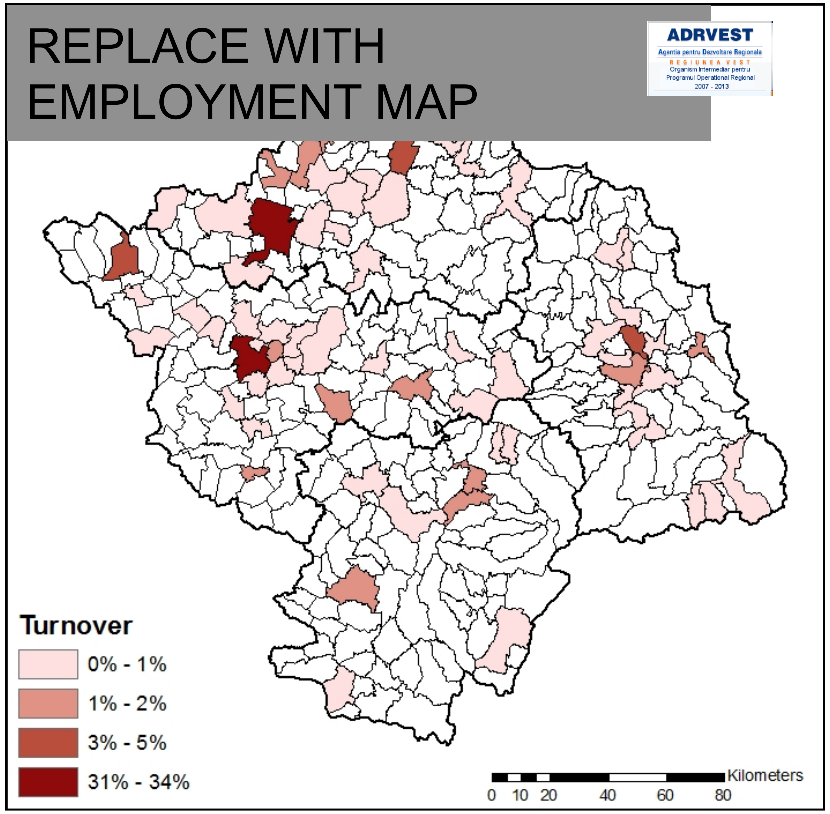
Health productivity comparison (2010)

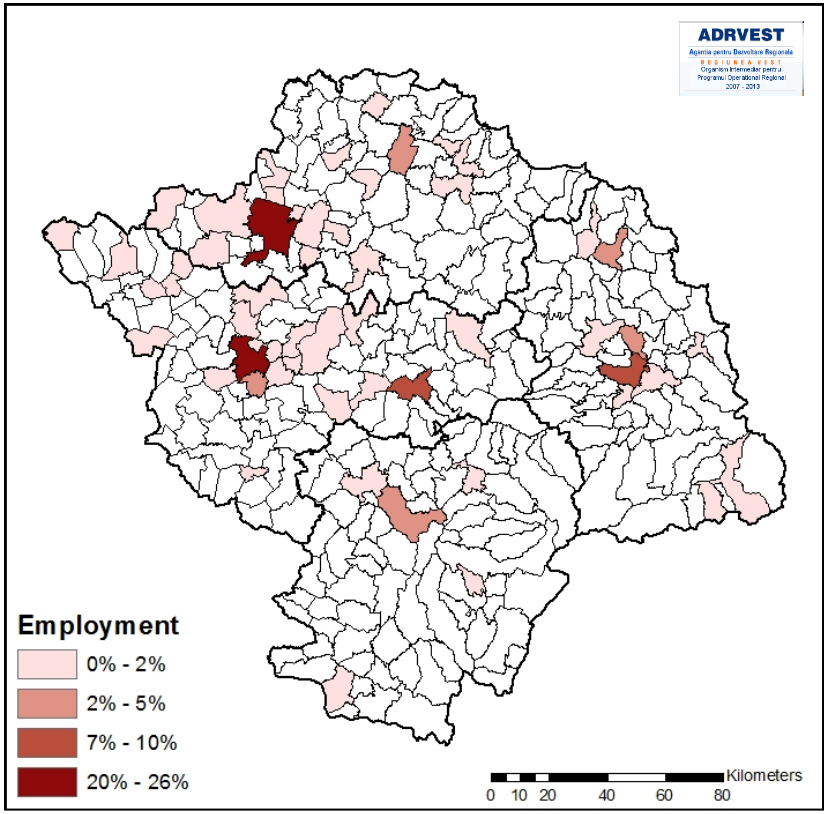


Values are not statistically significant

A2: COUNTIES

Where are the jobs in strategic sectors: auto and textiles?

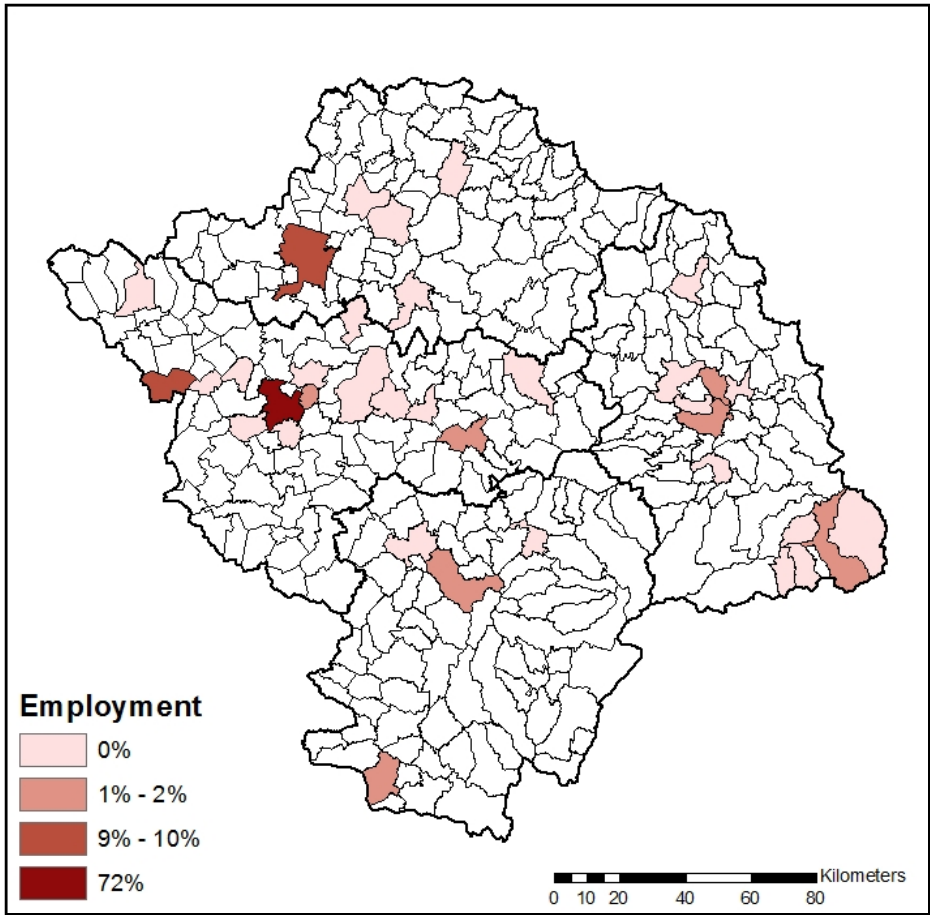




Source: Maps copyright of ADR West

- ADD

Where are the jobs in strategic sectors: ICT?



Source: Maps copyright of ADR West

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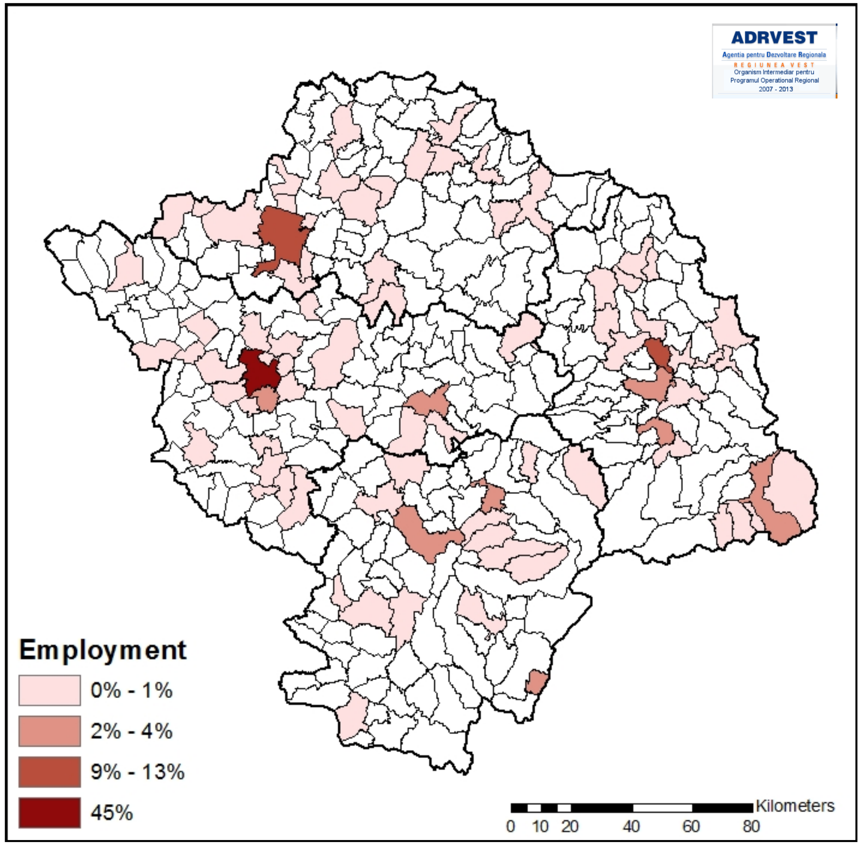
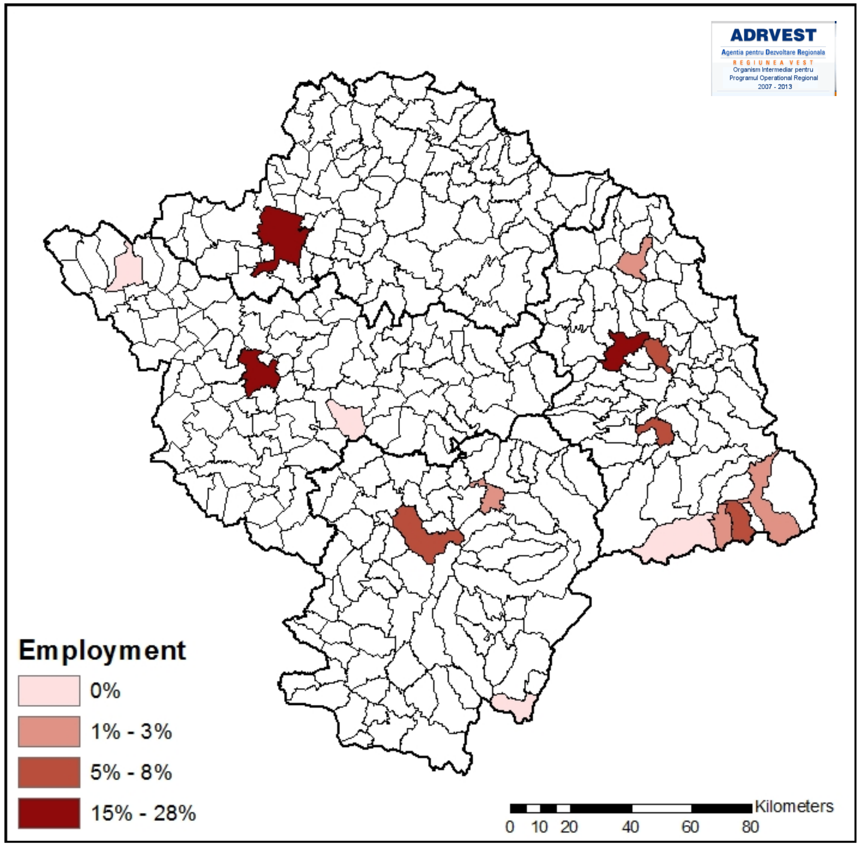
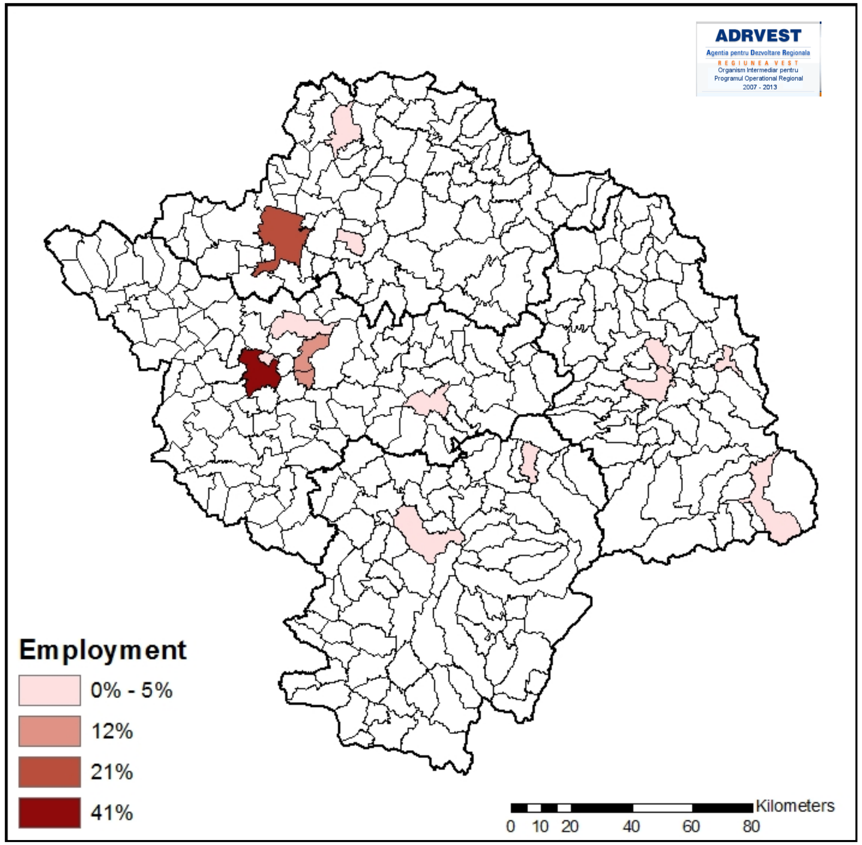
Where are the jobs in strategic sectors: construction and energy?

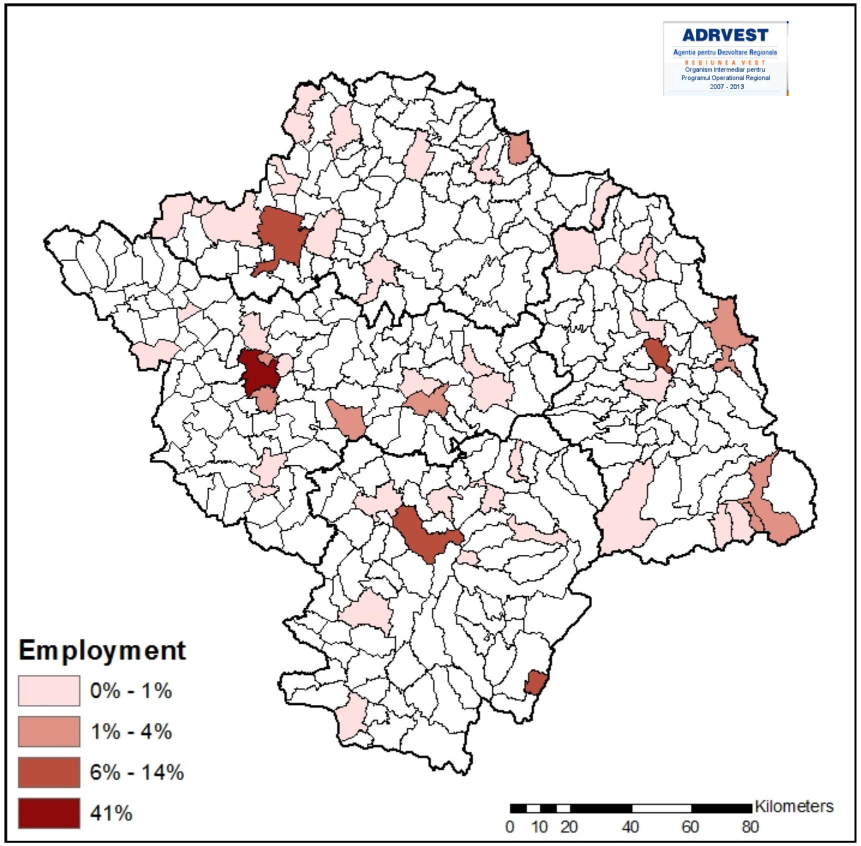




Source: Maps copyright of ADR West

Where are the jobs in strategic sectors: healthcare and tourism?

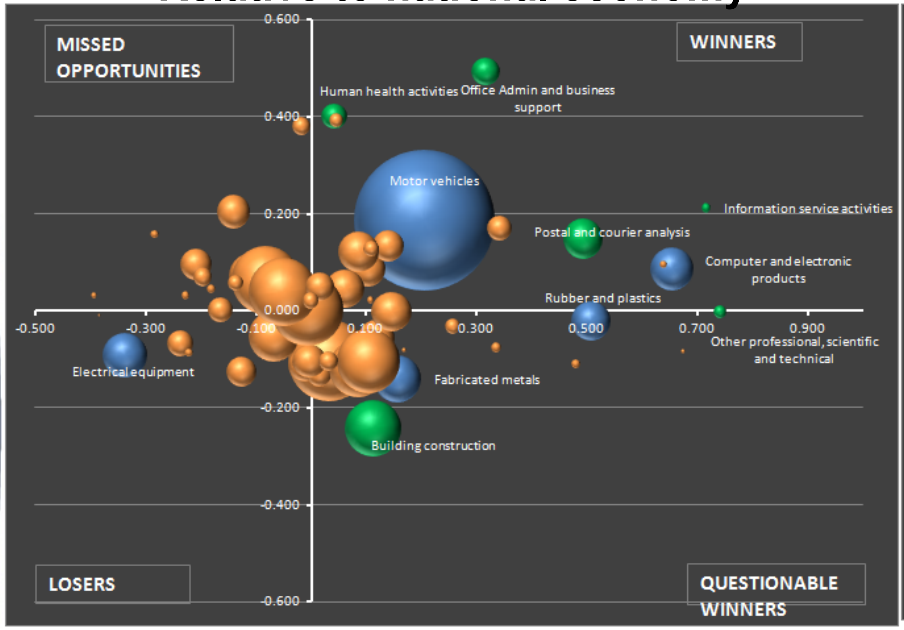




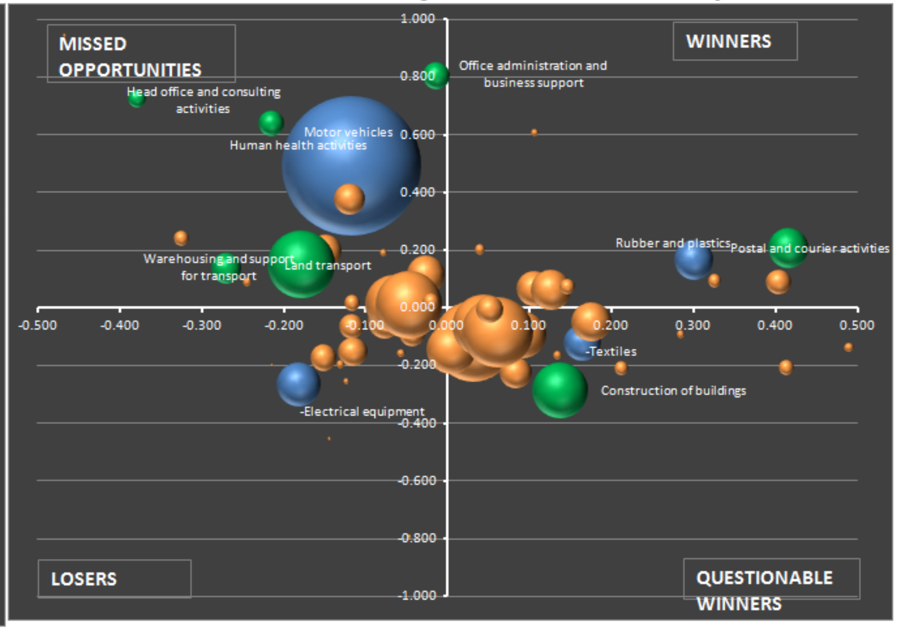
Source: Maps copyright of ADR West

Shift-share: Arad

Relative to national economy



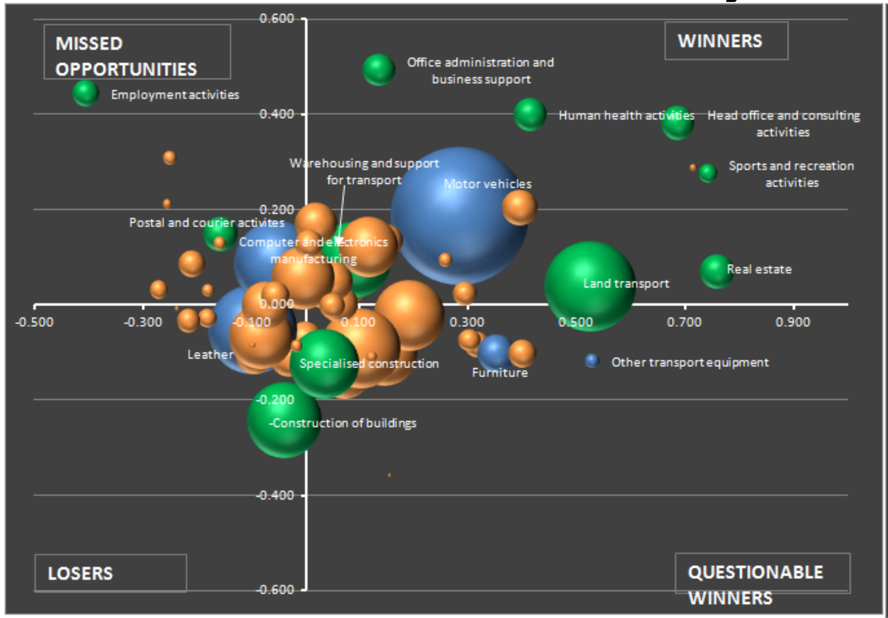
Relative to regional economy



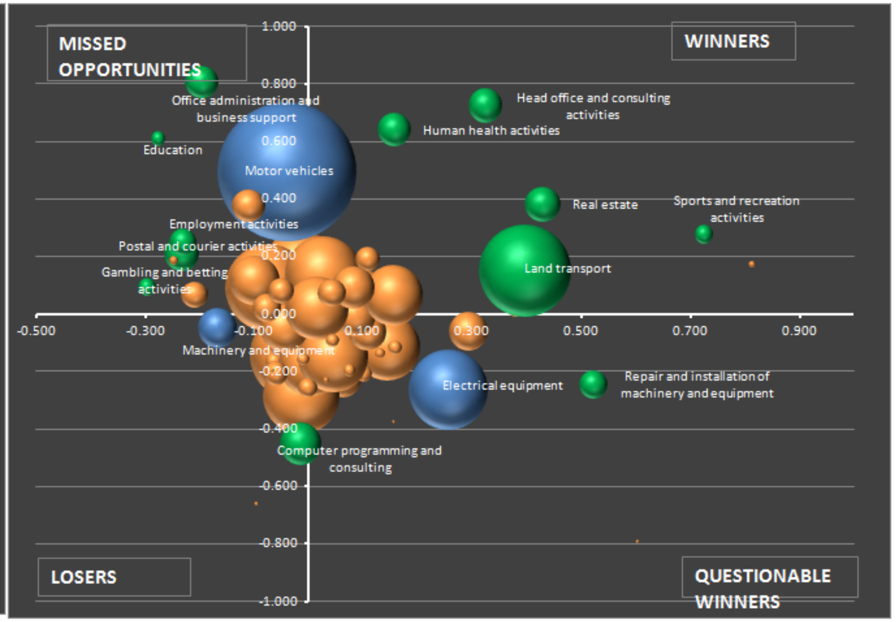
- Mixed performance – strong growth in national context in many high potential sectors, but relatively weaker performance at the regional level, where the county is growing slower than other parts of the region in some important growth sectors, while growing faster in sectors that are otherwise in decline in the region

Shift-share: Timis

Relative to national economy



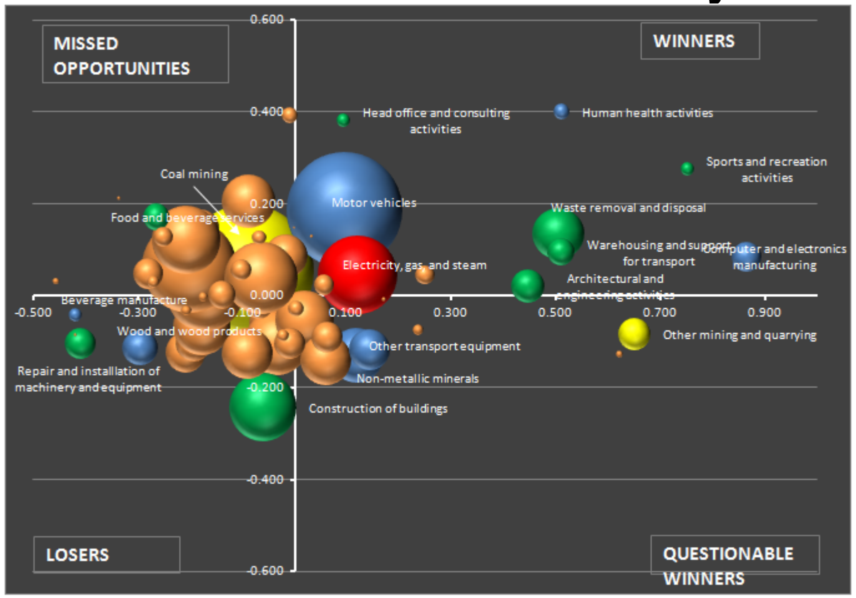
Relative to regional economy



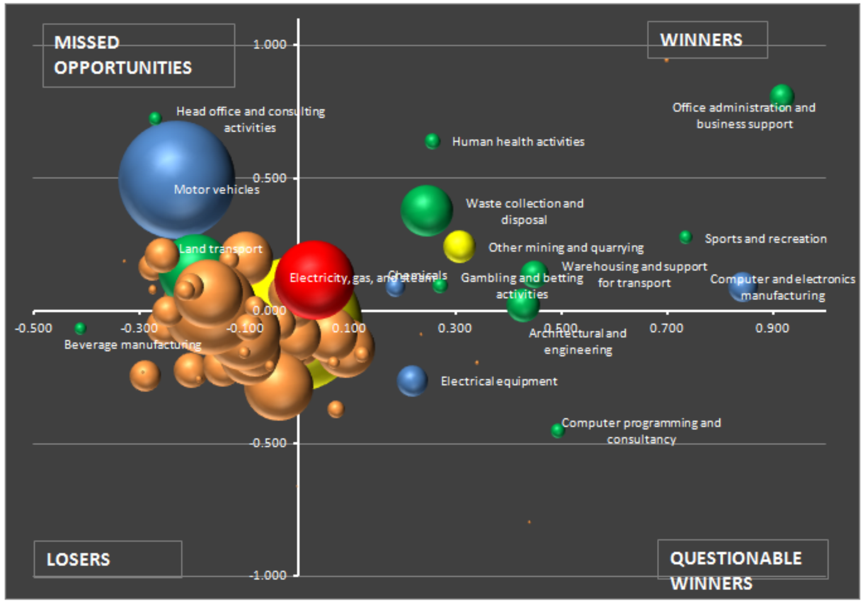
- Strong competitive performance relative to national economy in most key sectors
- At regional level, major sectors largely growing at regional average
- Emerging services sectors (some knowledge-intensive) an area of potentially growing competitive advantage

Shift-share: Hunedoara

Relative to national economy



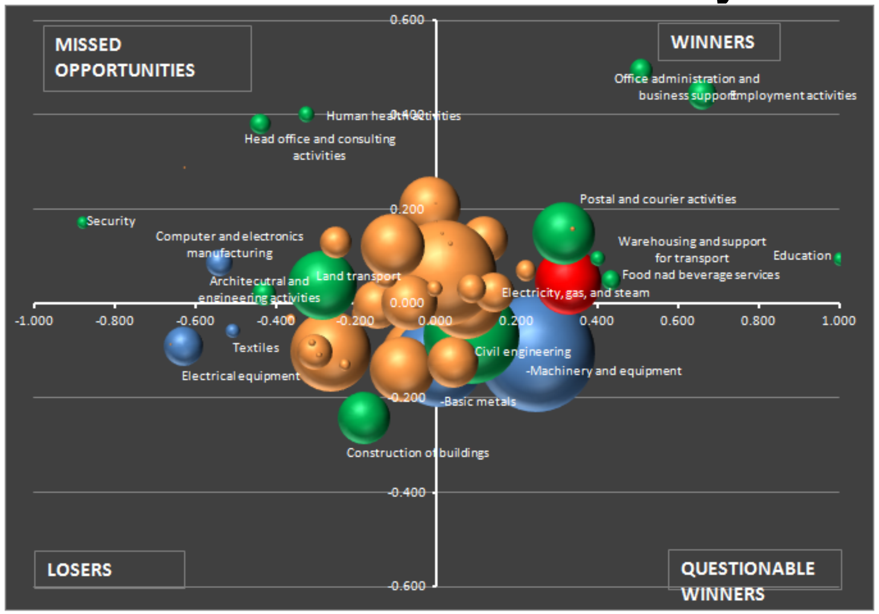
Relative to regional economy



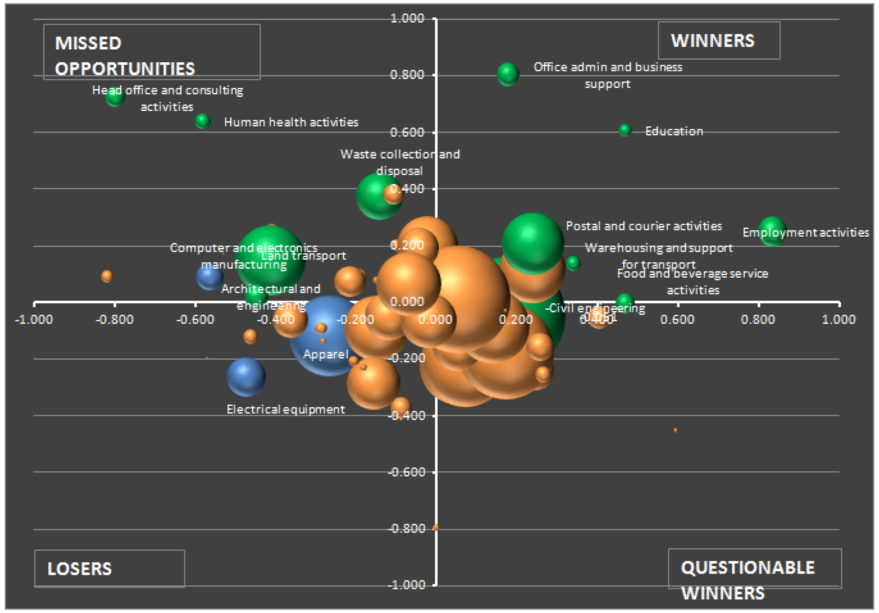
- Largest sectors in relative decline from both a national and regional perspective
- Some areas of growth in manufacturing and tourism

Shift-share: Caras-Severin

Relative to national economy



Relative to regional economy

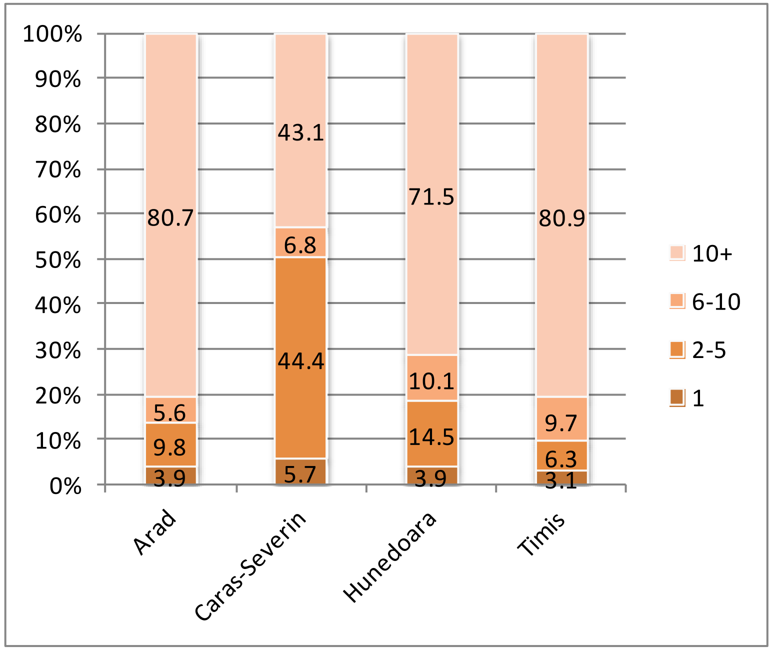


- Mixed performance in key sectors, with some evidence of minor growth in regional context
- Relative growth in basic services sectors with weaker performance in more knowledge-intensive sectors

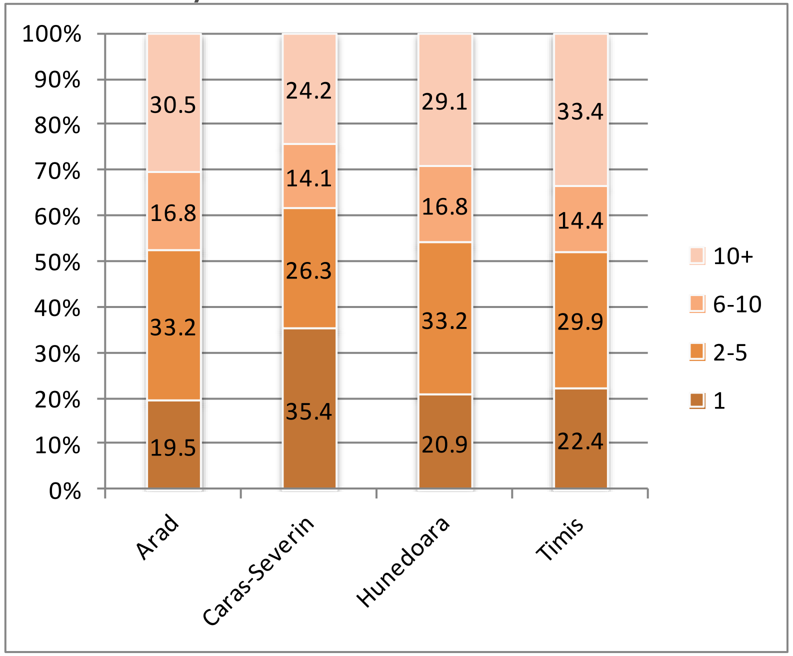
RESERVE SLIDES

The lion's share of exports goes to the highly diversified exporters

Value of exports by number of exported products (2011, % of total)



Exports by number of exported products (2011, % of total)



- Exporters with 10 or more export products account are 24 to 33% of the total but account for 43 to 81% of exports in each of the counties.
- Note that Caras-Severin figures driven by sector specialization

Larger share of firms exposed internationally than in other regions

2010 (% of firms)

Region	Importers only	Exporters Only	Importer & Exporter	Non Exporter & Non Importer	Total
North-East	8.07	12.96	8.51	11.04	10.61
South-East	9.88	10.39	6.44	11.87	11.11
South-Muntenia	9.32	9.28	8.7	11.83	11.21
South-West Oltenia	6.56	4.87	5.1	8.00	7.48
West	**7.9**	**11.38**	**11.36**	**9.61**	**9.7**
North-West	13.76	22.43	15.8	12.63	13.39
Center	15.21	16.51	19.6	11.58	12.86
Bucharest-Ilfov	29.29	12.17	24.5	23.45	23.64
Total	100	100	100	100	100

2010 (% of firms)

Region	Importers only	Exporters Only	Importer & Exporter	Non Exporter & Non Importer	Total
North-East	6.51	4.44	7.86	81.19	100.00
South-East	7.61	3.40	5.68	83.31	100.00
South-Muntenia	7.12	3.00	7.61	82.27	100.00
South-West Oltenia	7.51	2.36	6.68	83.46	100.00
West	**6.97**	**4.26**	**11.48**	**77.29**	**100.00**
North-West	8.80	6.08	11.56	73.55	100.00
Center	10.13	4.66	14.94	70.27	100.00
Bucharest-Ilfov	10.60	1.87	10.16	77.37	100.00
Total	8.56	3.63	9.80	78.01	100.00