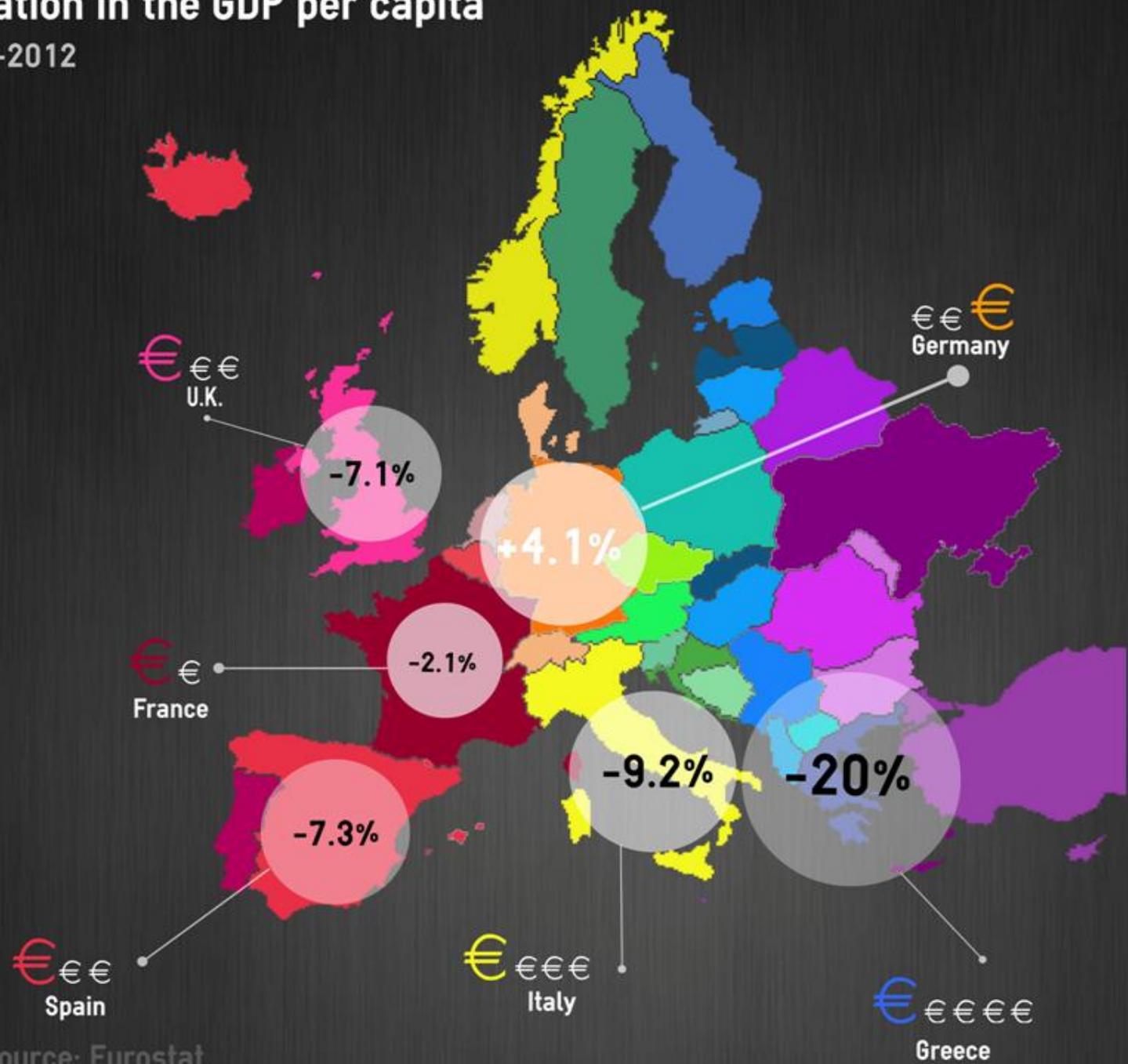


# Measuring the Effects of the 2008-09 Crisis on the Competitiveness of Italian Provinces

R. Papa - C. Gargiulo - S. Franco - L. Russo

# Variation in the GDP per capita

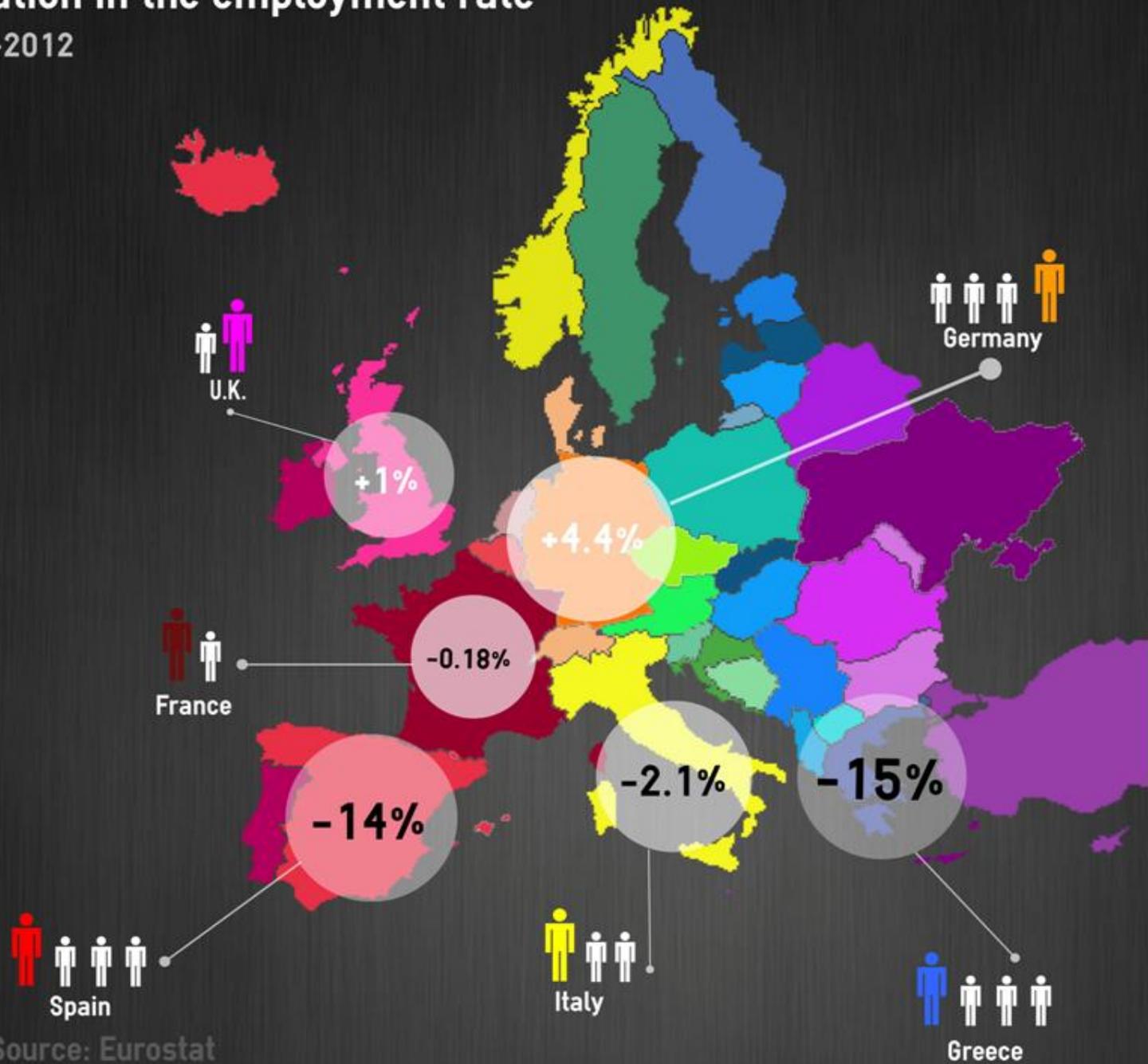
2007-2012



Data Source: Eurostat

# Variation in the employment rate

2007-2012



Data Source: Eurostat

# Did the various territories react in the same way?



A. Defining Territorial Competitiveness

B. Developing a composite indicator

C. Benchmarking 2007-2012

D. Principal Component Analysis



# A. Defining Territorial Competitiveness

B. Developing a composite indicator

C. Benchmarking 2007-2012

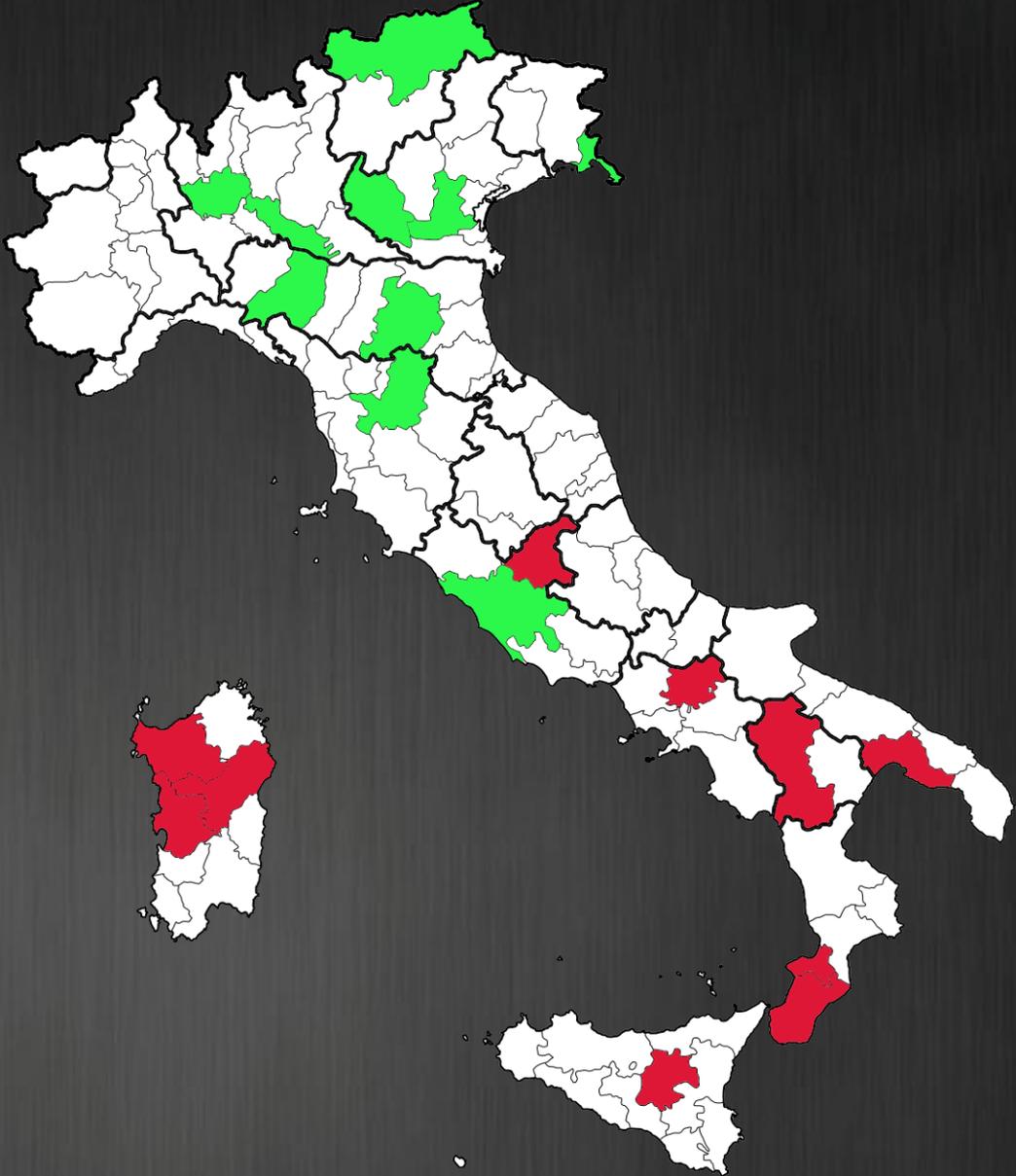
D. Principal Component Analysis



ECONOMY

PROVINCE	INCOME PER CAPITA	BANK DEPOSIT PER PERSON	EXPORT PER 1000 POP.	LAYOFF HOURS PER EMPLOYED
Agrigento	10.691,870	17,9%	4,7	0,235
Alessandria	18.882,199	21,369	2,747	4,084
Ancona	19.447,170	21,424	-0,049	7.544,421
Arezzo	21.598,689	83,923	0,302	4.703,603
Ascoli Piceno	16.707,930	29,611	25.905,080	0,481
Astano	17.442,635	36,425	1,000	8.826,490
Bari	11.912,037	28,877	-0,039	2.320,695
Belluno	13.378,532	19,798	0,18	0,209
Benevento	19.984,529	34,620	0,065	-0,150
Bergamo	12.183,320	27,637	4,423	-1,025
Bologna	21.049,935	59,446	0,1	8,181
Bolzano	23.766,285	60,531	0,061	-0,825
Brescia	14.547,700	32,738	0,099	0,112
Brunico	10.624,765	94,287	1,200	2,247
Cagliari	12.049,508	90,777	1,000	1,000
Calabria	13.380,739	15,657	2,23	-1,070
Campobasso	15.553,240	21,803	0,013	11,693
Capri	15.881,980	97,429	0,061	-0,247
Caserta	12.992,570	93,759	0,072	-0,544
Catania	17.743,688	92,964	0,135	0,865
Cavallotti	11.079,906	160,06	0,391	1,934
Cesena	19.470,112	101,218	1,830	11,226
Chieti	10.840,22	102,958	0,688	0,256
Cinque	17.321,820	32,250	-0,189	6,770
Cuneo	21.668,439	12,795	1,160	8,925
Ferrara	11.859,830	17,661	-0,114	0,087
Firenze	21.600,650	25,887	0,016	-0,914
Frosinone	13.670,830	16,301	-0,664	8,728
Genova	20.571,289	18,139	-0,144	5,170
Giulia	16.819,4820	58,858	0,096	9,776
Imperia	16.819,4820	2,228	-0,147	1,260
Ischia	14.547,700	32,738	0,099	0,112
Lecce	10.624,765	94,287	1,200	2,247
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- B. Developing a composite indicator
- C. Benchmarking 2007-2012
- D. Principal Component Analysis



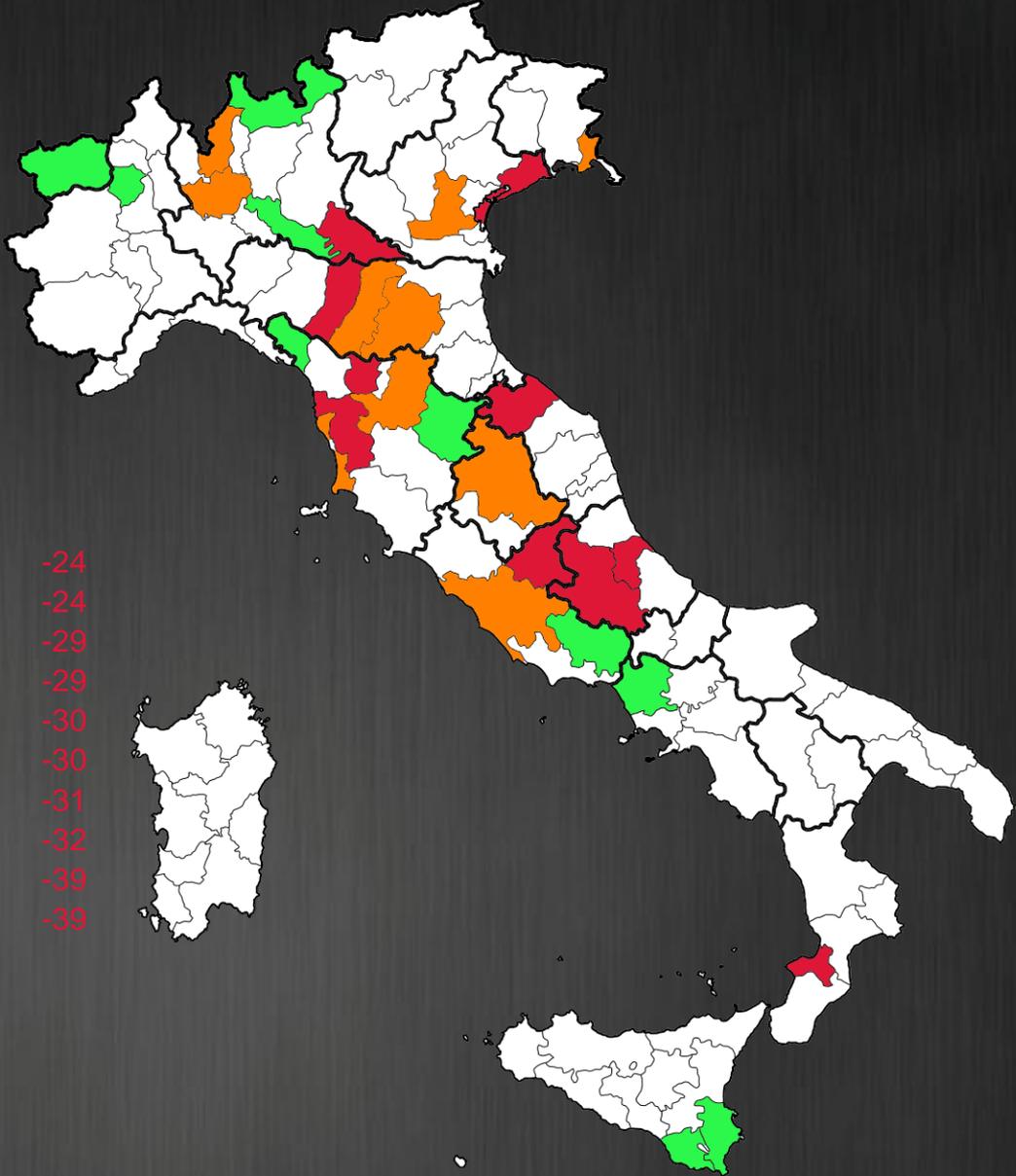
**2007**

**Competitiveness Index (CI)**

1	Milano
2	Milano
3	Asolo Piceno
4	Bologna
5	Manova
6	Roma
7	Padova
8	Bologna
9	Verona
10	Treviso
...	...
94	Benevento
95	Ragusa
95	Catanzaro
96	Rieti
96	Benevento
97	Nuoro
97	Verbania
98	Enna
98	Catanzaro
99	Sassari
99	Nuoro
100	Oristano
100	Lecce
101	Potenza
101	Trapani
102	R. Calabria
102	Biella
103	Vibo Valentia
103	Cosenza



- A. Defining Territorial Competitiveness
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Cremona	+41	Livorno	+1	Mantova	-24
Frosinone	+39	Padova	+1	Prato	-24
Siracusa	+38	Florence	+1	Pesaro e Urbino	-29
Arezzo	+30	Bologna	0	Venice	-29
Biella	+27	Como	0	Pisa	-30
Ragusa	+27	Modena	0	Reggio Emilia	-30
Caserta	+26	Rome	0	Rieti	-31
Aosta	+25	Gorizia	-1	Vibo Valentia	-32
Sondrio	+25	Milan	-1	Pescara	-39
Massa-Carrara	+24	Perugia	-1	L'Aquila	-39



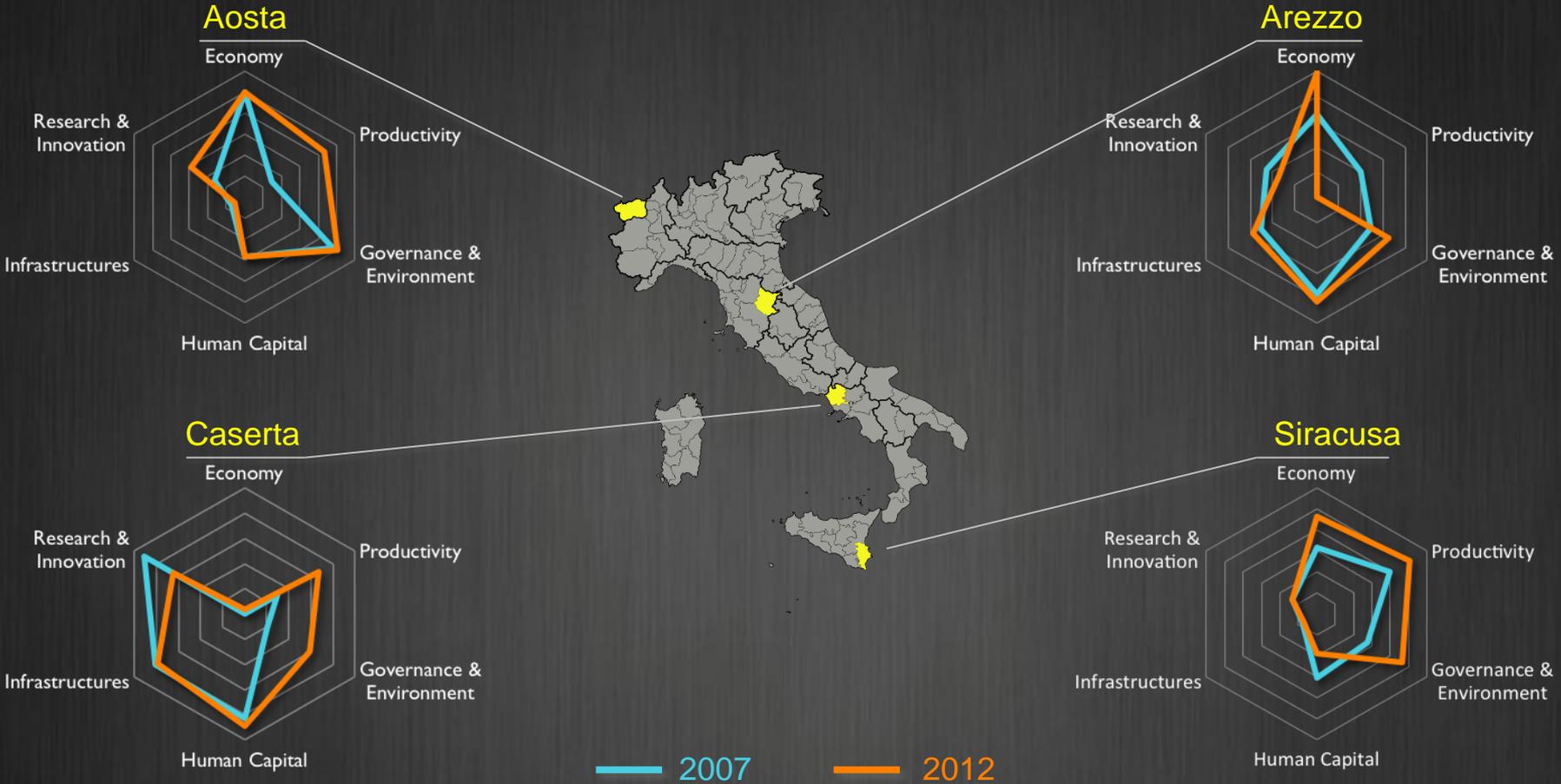
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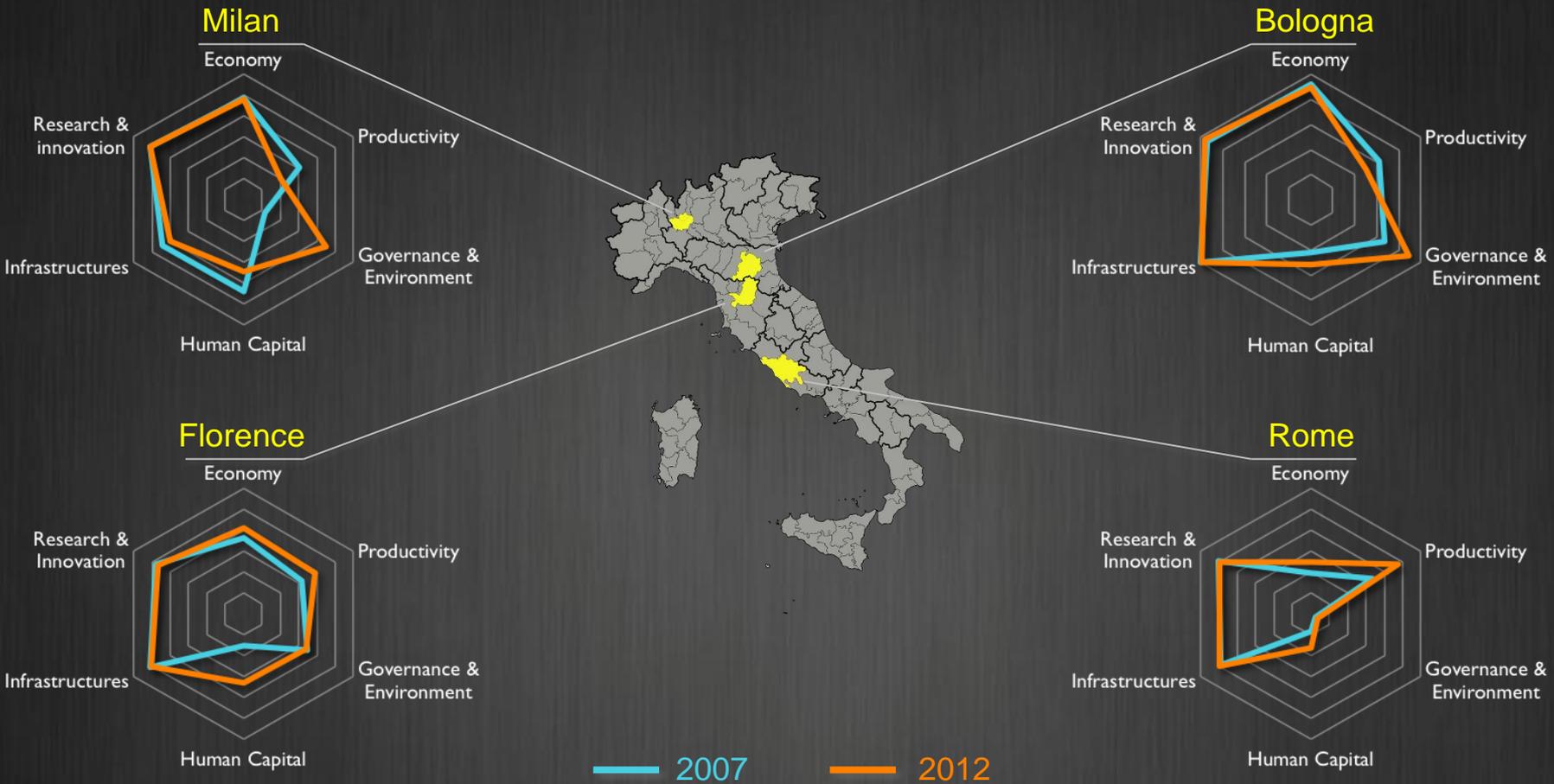
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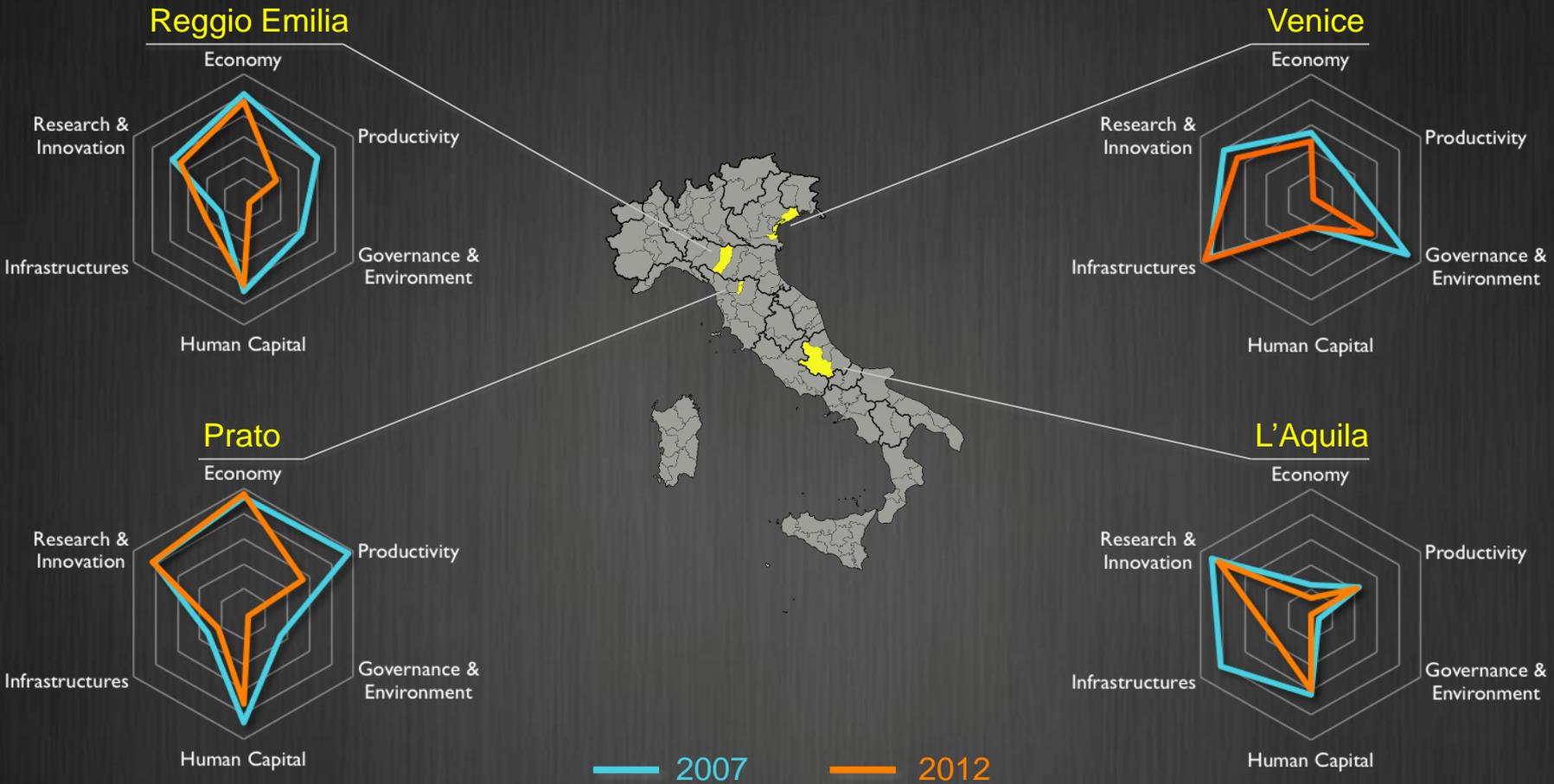
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**D. Principal Component Analysis**

**2007**

PC	Eigenvalues	% of variance	Cumulative %
1	7,291	24,304	24,304
2	3,981	13,270	37,574
3	2,280	7,600	45,174
4	1,797	5,991	51,166
5	1,727	5,757	56,923
6	1,578	5,260	62,183
7	1,422	4,742	66,924
8	1,076	3,587	70,512
9	,970	3,233	73,744
10	,884	2,948	76,693
11	,823	2,742	79,435
12	,700	2,332	81,767
13	,676	2,253	84,020
14	,600	1,999	86,019
15	,536	1,785	87,804
16	,493	1,642	89,446
17	,452	1,507	90,953
18	,410	1,367	92,321
19	,360	1,200	93,521
20	,349	1,164	94,685
21	,274	,915	95,600
22	,244	,814	96,414
23	,227	,755	97,169
24	,199	,664	97,834
25	,184	,614	98,447
26	,153	,510	98,957
27	,125	,416	99,372
28	,077	,258	99,630
29	,069	,231	99,861
30	,042	,139	100,000

**2012**

PC	Eigenvalues	% of variance	Cumulative %
1	7,139	23,797	23,797
2	3,822	12,741	36,539
3	2,471	8,236	44,775
4	1,891	6,304	51,079
5	1,721	5,736	56,815
6	1,521	5,071	61,885
7	1,392	4,641	66,526
8	1,154	3,847	70,373
9	1,041	3,470	73,844
10	,962	3,206	77,049
11	,881	2,935	79,985
12	,801	2,669	82,654
13	,708	2,359	85,013
14	,619	2,063	87,076
15	,546	1,819	88,895
16	,508	1,694	90,588
17	,461	1,538	92,126
18	,363	1,210	93,336
19	,302	1,006	94,342
20	,279	,931	95,273
21	,268	,893	96,165
22	,220	,734	96,899
23	,191	,637	97,536
24	,161	,538	98,074
25	,146	,487	98,561
26	,121	,404	98,965
27	,101	,337	99,302
28	,100	,333	99,635
29	,060	,201	99,836
30	,049	,164	100,000



A. Defining Territorial Competitiveness

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2007

2012

PC1

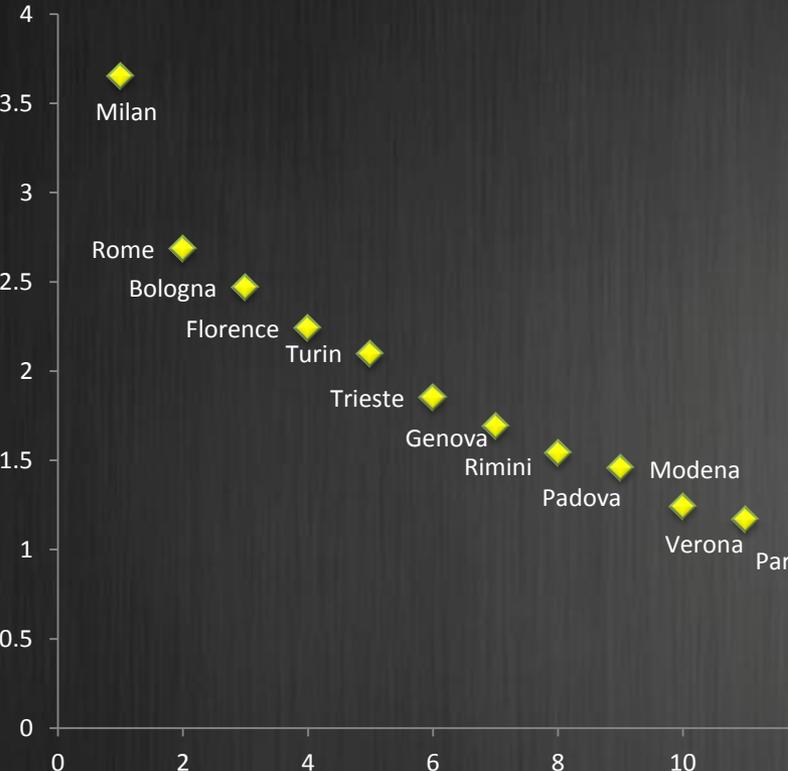
PC1

AV per capita	,868	AV per capita	,846
Number of patents	,730	Number of patents	,781
Income per capita	,724	Income per capita	,771
Share of foreign residents	,723	Crimes per 1000 pop	,697
Crimes per 1000 pop	,712	Export per 1000 pop	,695
Health facilities	,700	Health facilities	,691
Export per 1000 pop	,694	Share of foreign residents	,682
Cultural facilities	,642	Cultural facilities	,672
R&D firms expenditure	,586	R&D firms expenditure	,637
Recycling	,547	R&D employed per 1000 pop	,597
Networks for telephony and telematics	,522	Education facilities	,550
R&D employed per 1000 pop	,522	Networks for telephony and telematics	,519
Exhibitions per 1000 pop	,477	Exhibitions per 1000 pop	,498
Internal financial level	,468	Rail network	,492
Education facilities	,457	Electricity consumption for productive use	,323
Passenger on flights per 1000 pop	,447	Passenger on flights per 1000 pop	,319
Electricity consumption for productive use	,334	Internal financial level	,315
Share of pop over 65	,318	Share of pop over 65	,300
Rail network	,292	Hotels per 1000 pop	,160
Road network	,174	Road network	,159
Hotels per 1000 pop	,167	Layoff hours per employed	,133
Active firms per 1000 pop	,065	Firms growth rate	,120
Spending capacity of public administration	,047	Active firms per 1000 pop	,085
Firms growth rate	,011	Spending capacity of public administration	,028
Share of "science-based" export	-,042	Share of "science-based" export	-,034
Firms death rate	-,064	Firms death rate	-,064
Layoff hours per employed	-,136	Recycling	-,136
Number of control units for air monitoring	-,259	Banks deposits per 1000 pop	-,266
Banks deposits per 1000 pop	-,322	Number of control units for air monitoring	-,282
Unemployed per 1000 pop	-,609	Unemployed per 1000 pop	-,609

“the productive and innovative dynamism”

var.=23,80%

PC1

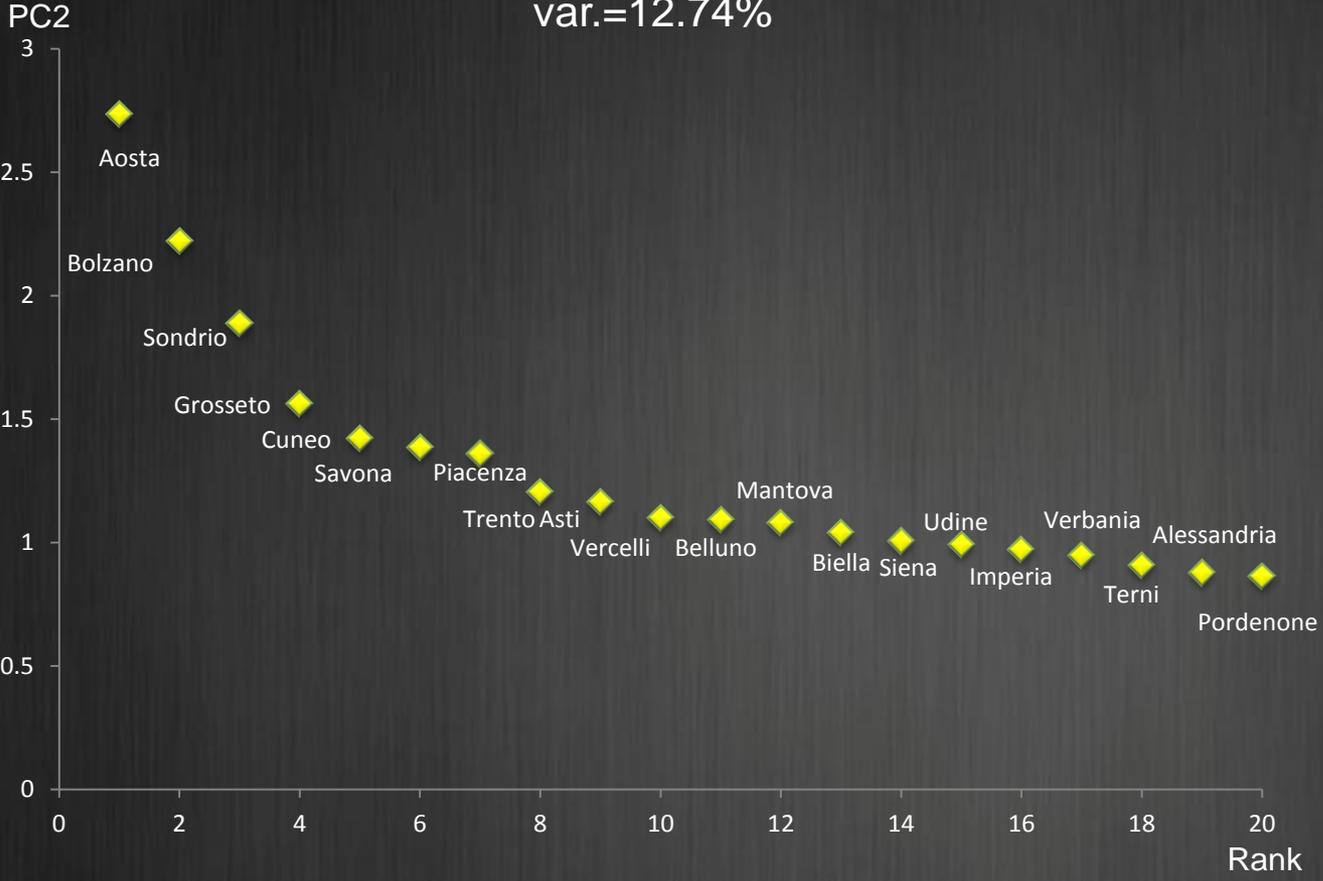


- A. Defining Territorial Competitiveness
- B. Developing a composite indicator
- C. Benchmarking 2007-2012
- D. Principal Component Analysis**

**2012**

**PC2**

“the static prosperity”  
var.=12.74%



Share of pop over 65	,522
Active firms per 1000 pop	,463
Hotels per 1000 pop	,457
Share of foreign residents	,418
Banks deposits per 1000 pop	,414
AV per capita	,403
Income per capita	,403
Number of control units for air monitoring	,387
Electricity consumption for productive use	,348
Internal financial level	,291
Road network	,224
Recycling	,178
Firms death rate	,125
Layoff hours per employed	,079
Exhibitions per 1000 pop	,074
R&D firms expenditure	,038
R&D employed per 1000 pop	,020
Number of patents	-,030
Rail network	-,062
Export per 1000 pop	-,154
Crimes per 1000 pop	-,155
Cultural facilities	-,206
Spending capacity of public administration	-,319
Share of "science-based" export	-,346
Firms growth rate	-,410
Passenger on flights per 1000 pop	-,439
Health facilities	-,532
Unemployed per 1000 pop	-,543
Education facilities	-,579
Networks for telephony and telematics	-,631

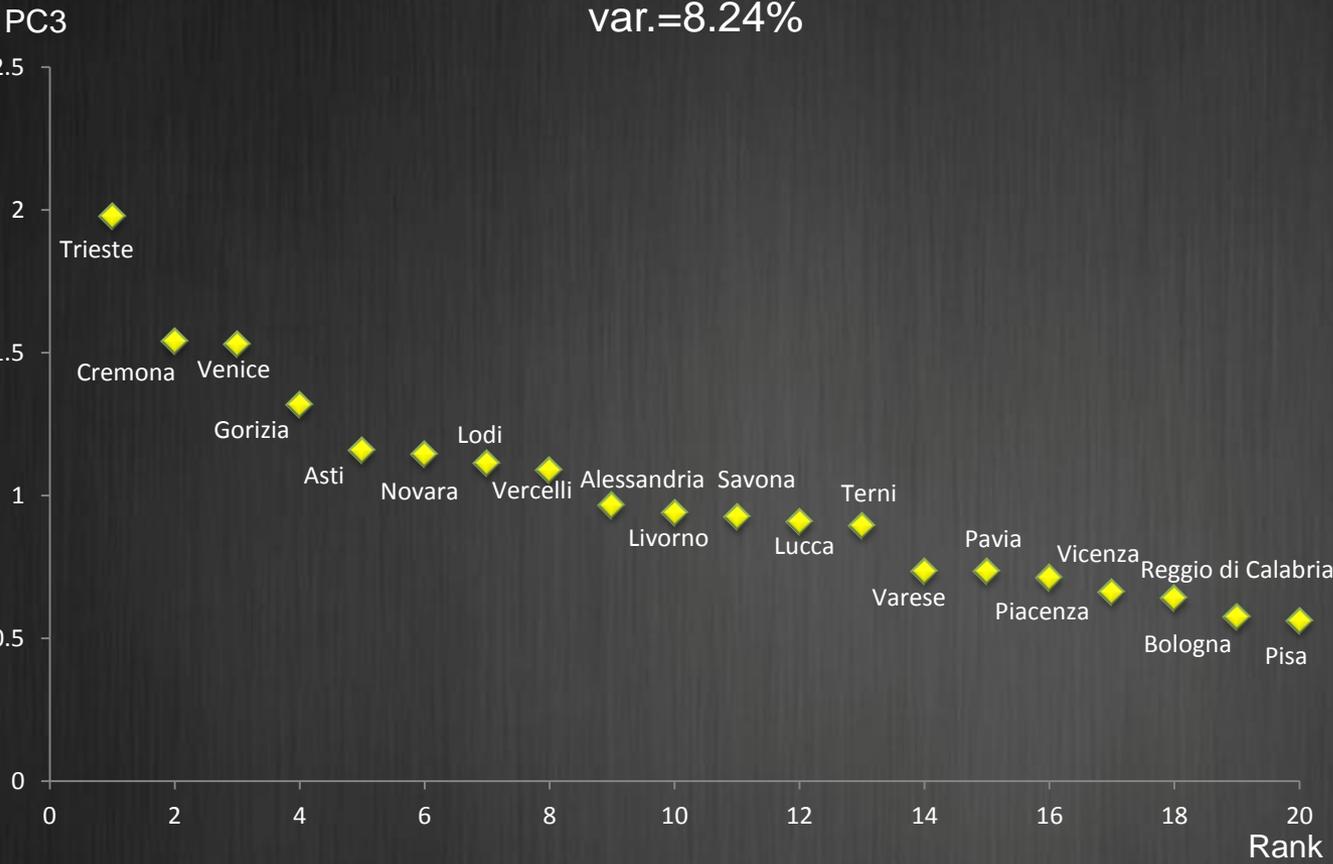


- A. Defining Territorial Competitiveness
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**2012**

**PC3**

“the crisis of the productive system”  
var.=8.24%

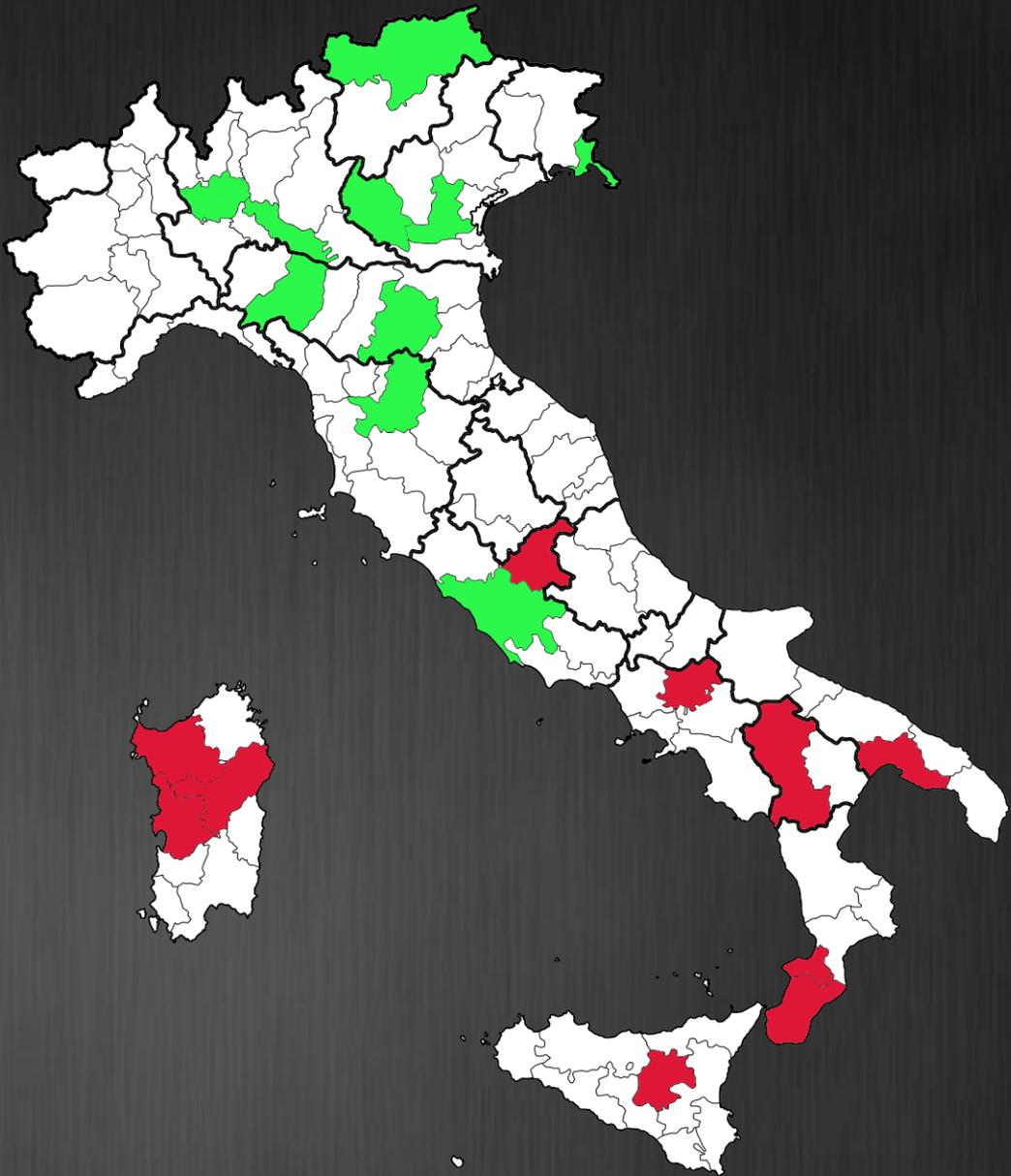


Firms death rate	,645
Spending capacity of public administration	,632
Rail network	,415
Share of pop over 65	,335
Road network	,252
Internal financial level	,192
Networks for telephony and telematics	,162
Electricity consumption for productive use	,157
Share of foreign residents	,138
Health facilities	,137
Education facilities	,130
Cultural facilities	,128
Banks deposits per 1000 pop	,104
Layoff hours per employed	,057
Recycling	,054
Crimes per 1000 pop	,029
Income per capita	,001
Export per 1000 pop	-,019
AV per capita	-,051
Number of patents	-,081
Number of control units for air monitoring	-,085
Passenger on flights per 1000 pop	-,116
Unemployed per 1000 pop	-,137
Share of "science-based" export	-,154
Active firms per 1000 pop	-,232
Exhibitions per 1000 pop	-,278
R&D firms expenditure	-,343
R&D employed per 1000 pop	-,479
Hotels per 1000 pop	-,519
Firms growth rate	-,557



- A. Defining Territorial Competitiveness
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- D. Principal Component Analysis**

- 2012**  
**Competitiveness**  
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# Results and conclusions



1. North-South gap
2. Worst performance for the Northern provinces
3. Bigger provinces fare better



# Did the various territories react in the same way?



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