Boosting A.M. in Europe
through interregional cooperation
Final event - 22 September 2020

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Key aspects of the technical implementation of the action plan in Piedmont

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IRES PIEMONTE

Reflections at the end of this journey

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- Do we have a better understanding of how to connect monitoring and evaluation of individual tools?
- Are we able to evaluate the contribution of strategic policy tools objectives?
- With regards to data analysis are we capable to balance quantitative and qualitative data?
- Have we agreed on the importance of having a data visualization tool?
- Have we managed to take into account the interaction between the different mechanisms by which the policies operate?

Action Plan implementation

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What we have done so far...

The 3 selected indicators

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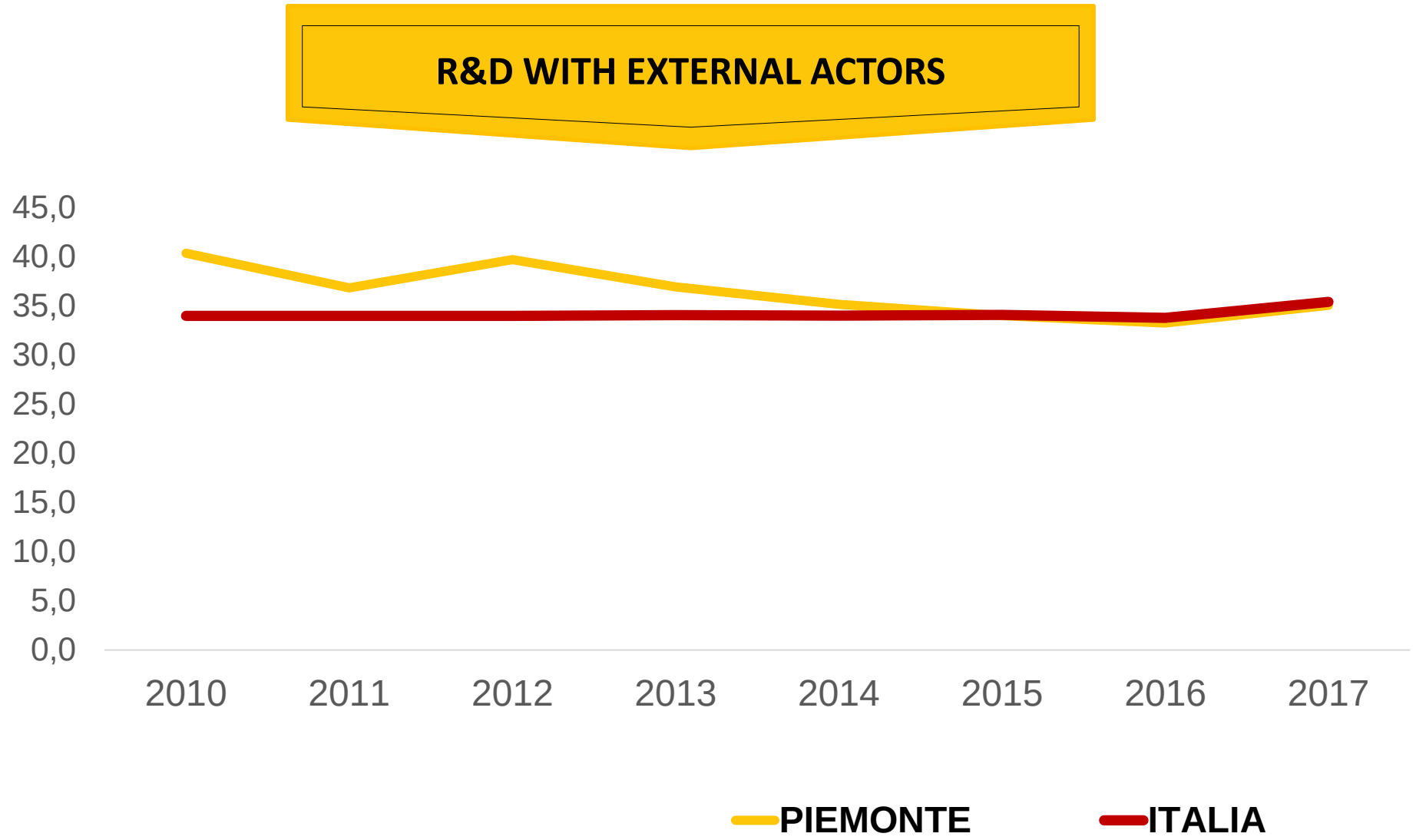
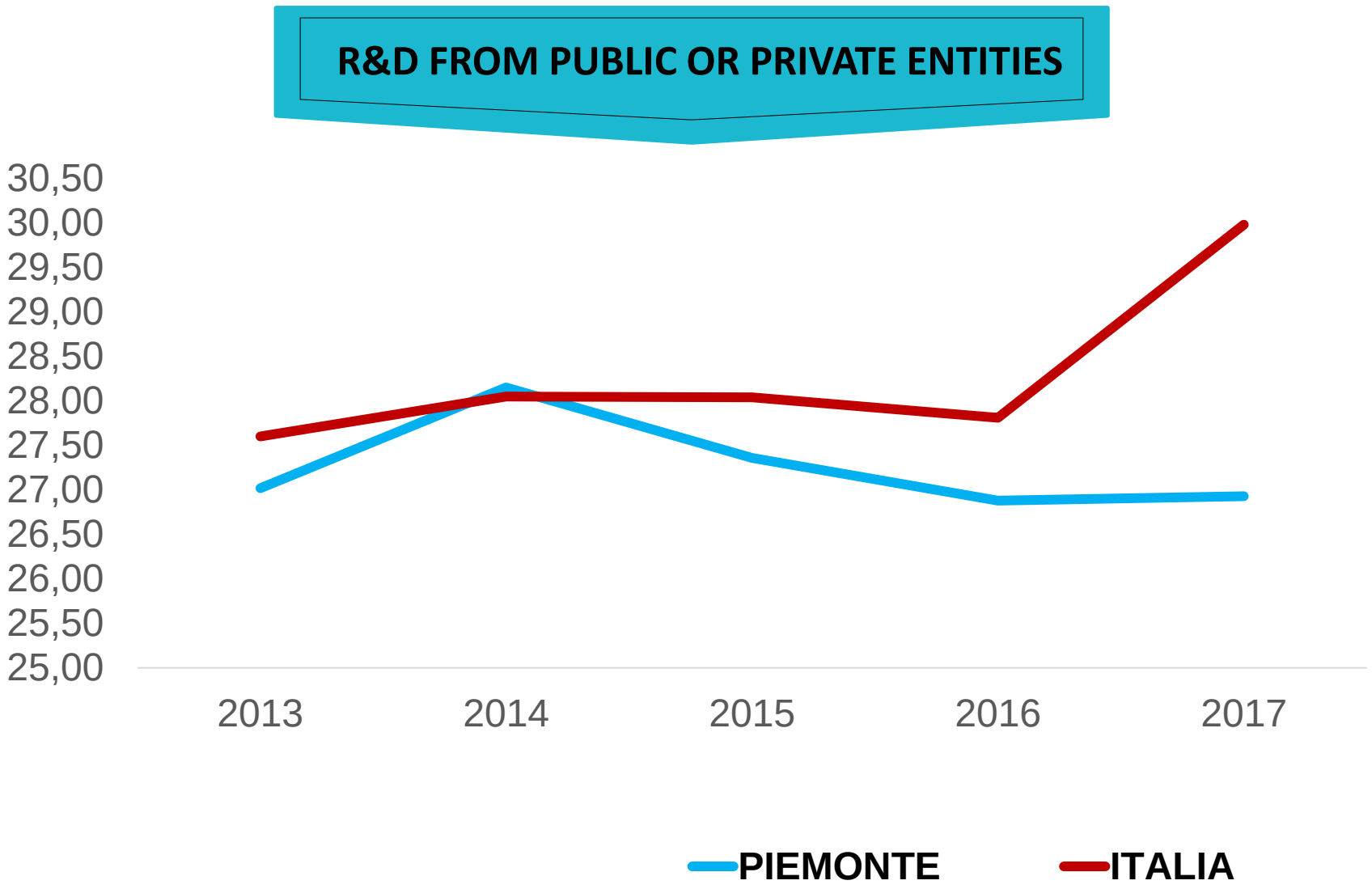
Enterprises that have carried out R&D activities **in collaboration with external actors**	Enterprises that have carried out R&D activities **using public or private R&D infrastructure and services**	Enterprises with more than **10 employees** which introduced **technological innovations** (products and processes)
(%) on the total of enterprises that carry out R&D	(%) on the total of enterprises that carry out internal R&D	(%) on the total of enterprises with more than 10 empl.
R&D collaboration with external partners as key element to strengthen and broaden the innovation capacity of an economic system	Collaboration with academia & RTD centres as key element to strengthen the innovative capacity of an economic system.	Diffusion of innovation. Innovation rate of the manufacturing and service system.

Data from ISTAT [1]



Data from ISTAT [2]



Data from ISTAT [3]

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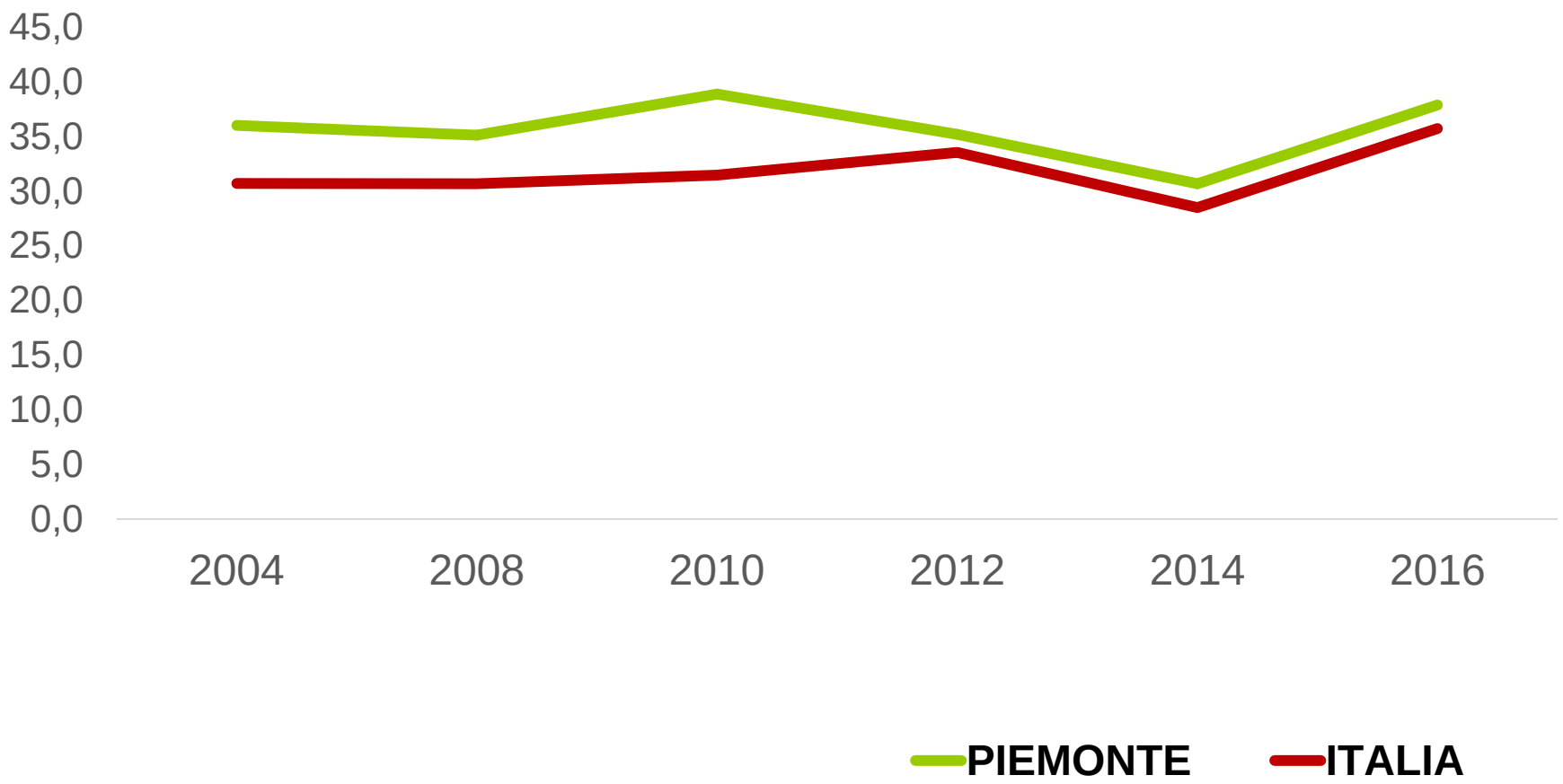
INNOVATION RATE OF THE MANUFACTURING AND SERVICE SYSTEM



The regional surveys

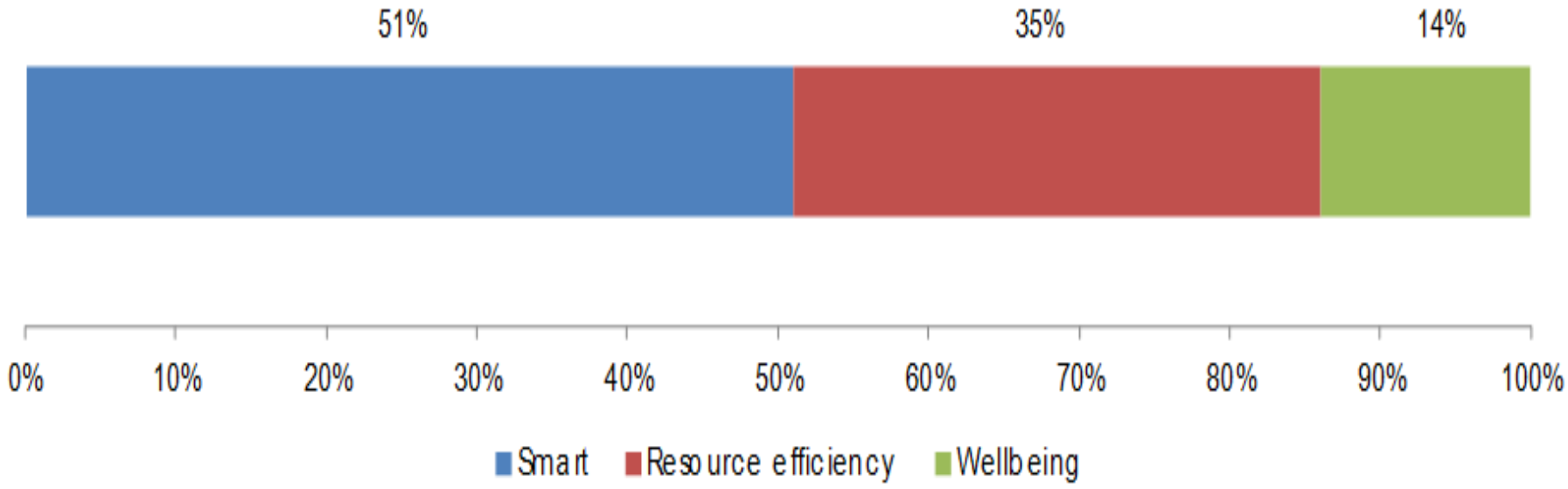
Survey n. 1:
Questionnaire to 300 companies from the innovation clusters

Results:

- 51% of the projects are oriented towards smart solutions
- The aim of most projects are
  - monitoring the territory
  - Internet of things
  - sensors
- 35% of projects have a resource efficiency profile

Survey n.1 – results

Projects per the trajectory of intervention (% in 2020)



Full consistency with the S3 trajectories of S3 in Piedmont

Survey n.1 – results

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Patents as a proxy for measuring innovation

Polo	Biopmed	Clever	Mesap	Agrifood	ICT	Pointex	Cgreen
Brevetto tot	**26**	**18**	**41**	**12**	**9**	**11**	**4**
Nessuno	16	23	27	17	19	13	2
Nazionale	7	7	14	5	4	3	1
Europeo	6	1	**11**	3	1	3	1
Internazionale	13	10	16	4	4	5	2

The MESAP cluster
on MEchatronics and Systems for Advanced Production
is particuarly active in patenting

The regional surveys

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Survey n. 2: Questionnaire to 1000 SMEs (also including those belonging to the innovation clusters)

Objective:

to find out the state of the art for:

- innovation
- internationalization
- employment
- projects for the future

Results:

The confirmation of **weak elements** of the entrepreneurial environment... but highlighted the **competitive advantage** for companies belonging to innovation clusters.

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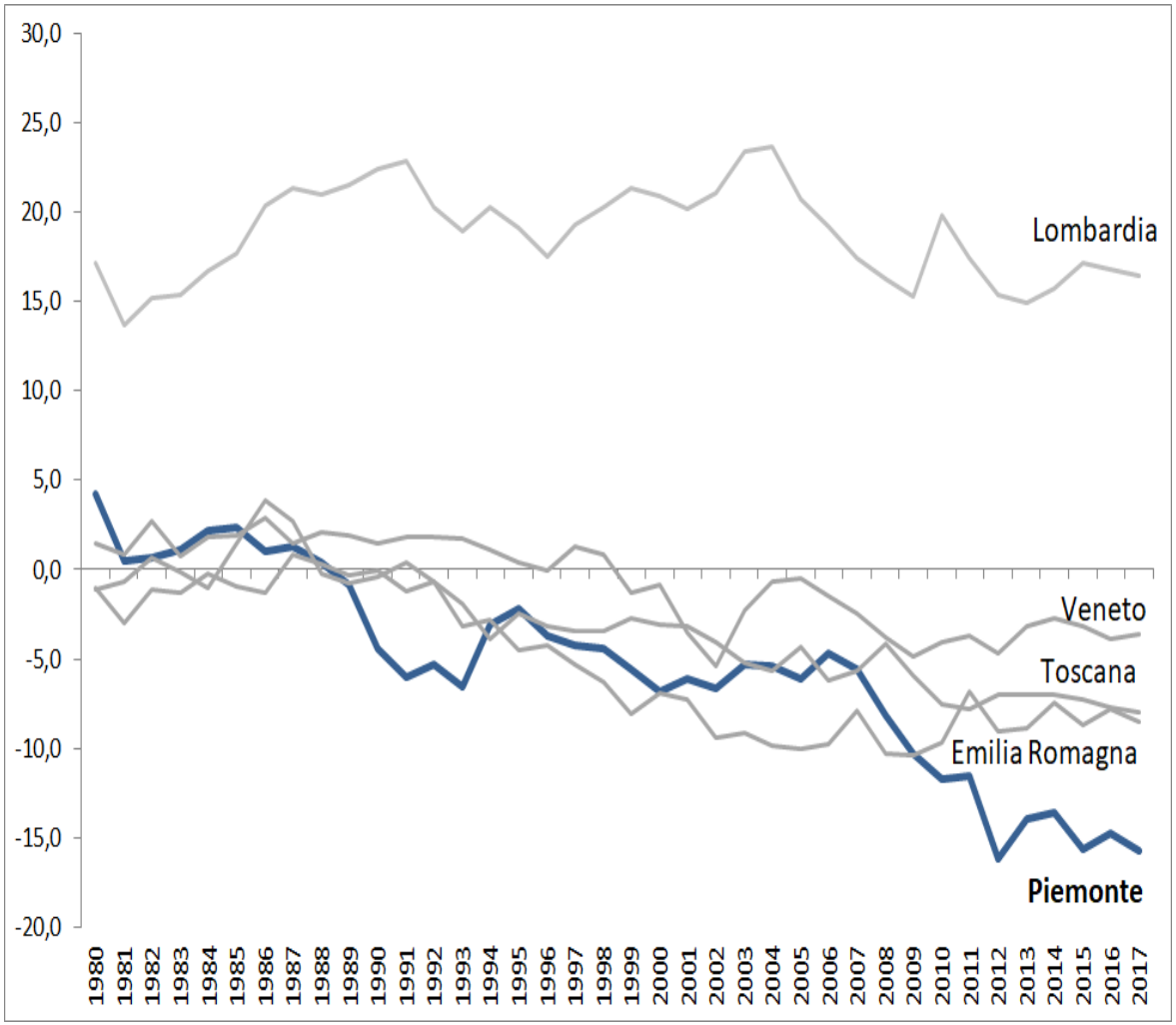
A comprehensive interpretation of the performance of Piedmont in R&D in Advanced Manufacturing

(combining our analysis with other sources)

After the outbreak of the economic crisis… the weakening of the economy

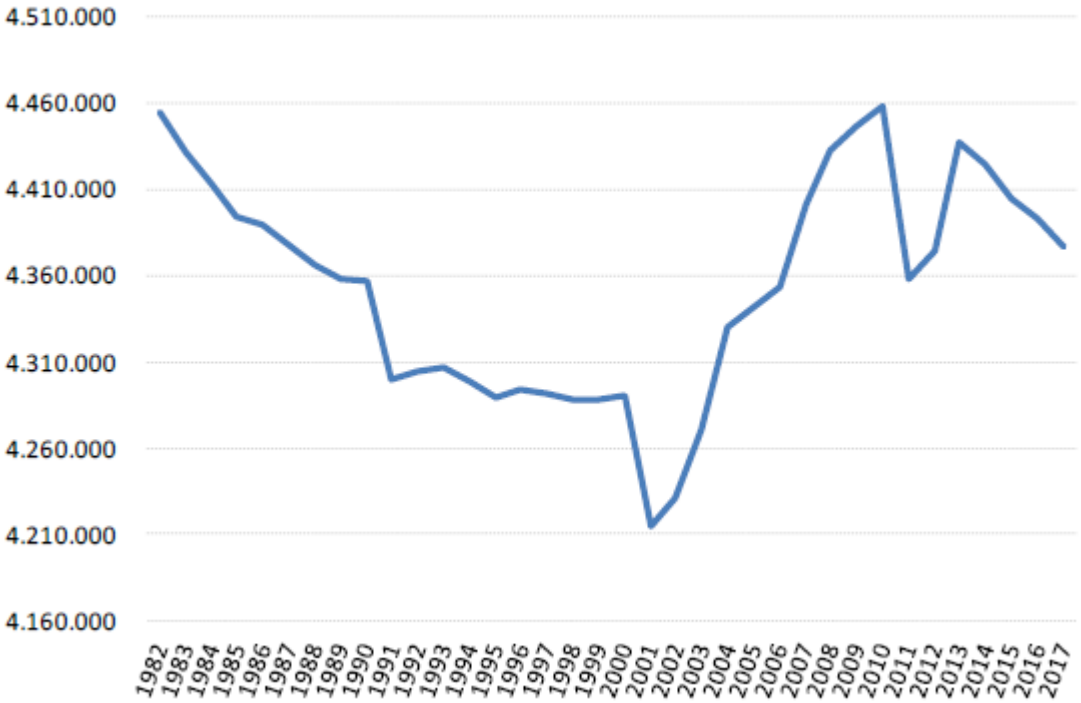


Deterioration of Piedmont external balance

Possible explanations:

- Resizing of big players
- Pivotal role of the Lombardy area
- Loose of pre-existing connections
- Dynamic firms releasing from the region

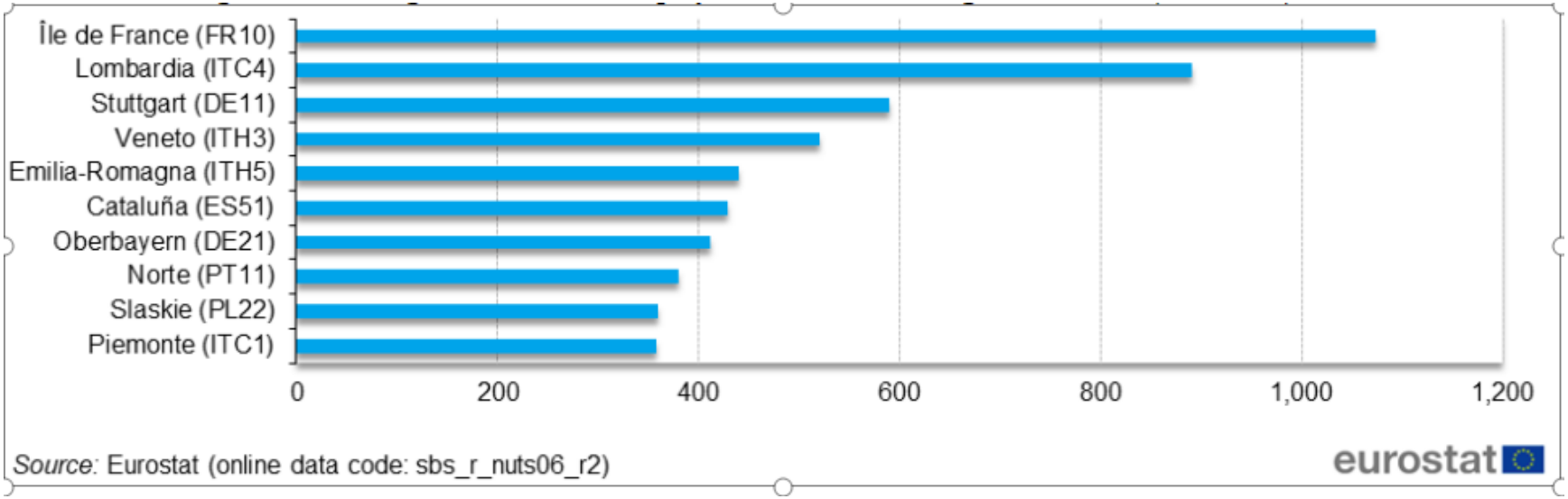
Piedmont population trends



For the fourth year, Piedmont population keeps decreasing.

- natural decrease (-23 thousands residents)
- in relation to the past, weak migration flows
- in the new century growth of migration towards foreign countries (two third of italian origin)
- demographic decline especially in the centre-north regions of Italy

The largest NUTS 2 regions in terms of employment, Manufacturing, EU-27, 2017 (thousands)

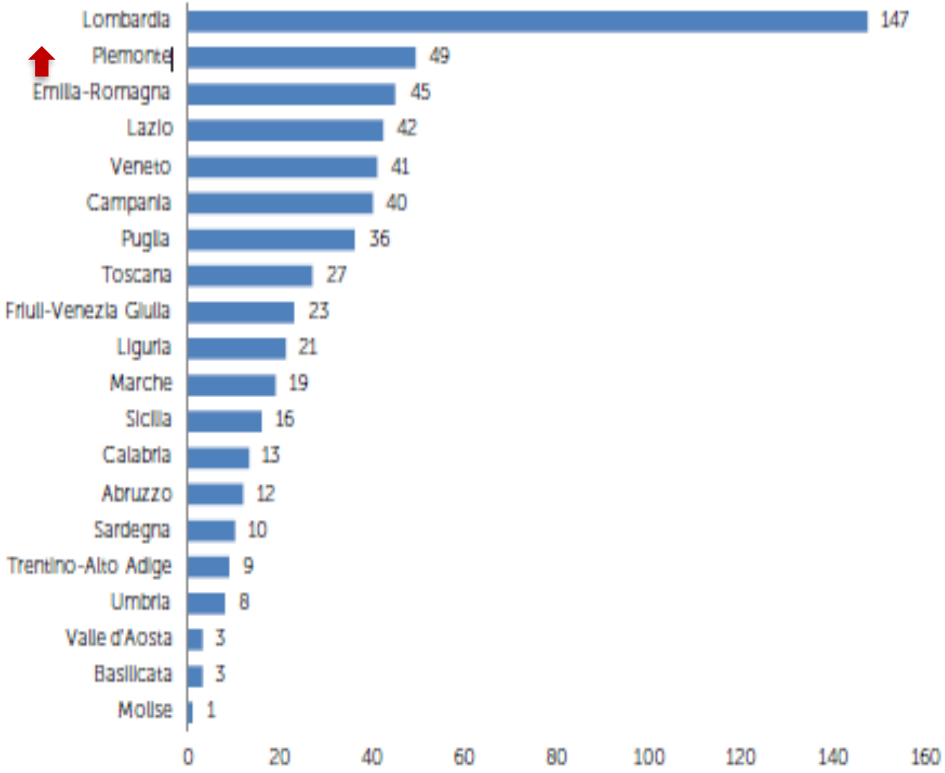


Industrial structure: size of enterprises

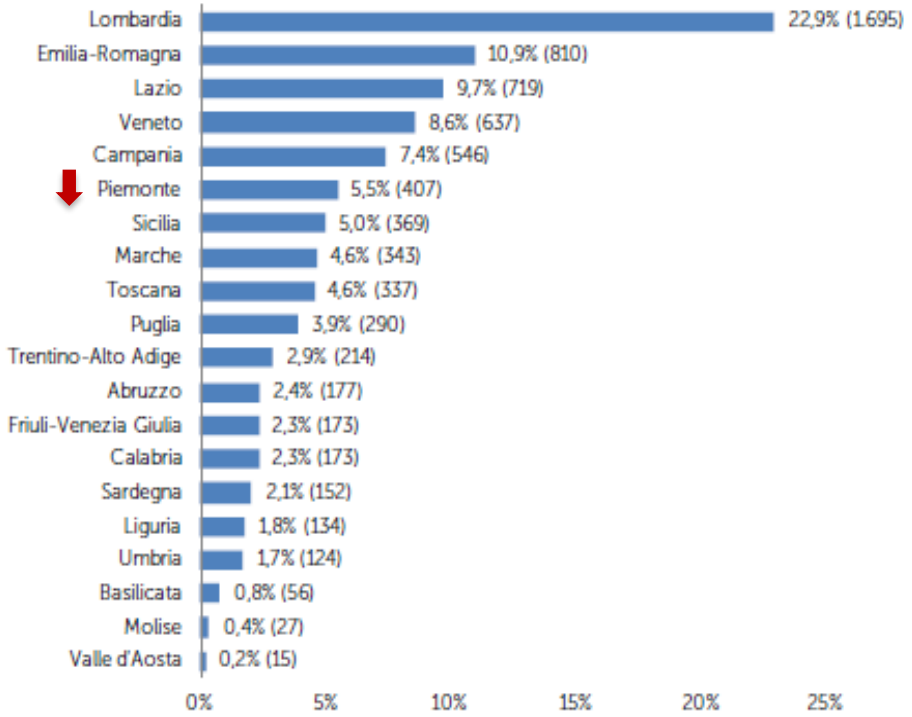
Important role of SME: the Piedmont productive system nowadays is more populated with SMEs than big companies.

However the Piedmont entrepreneurial system could be more dynamic

Innovative SMEs in Italy (2017)

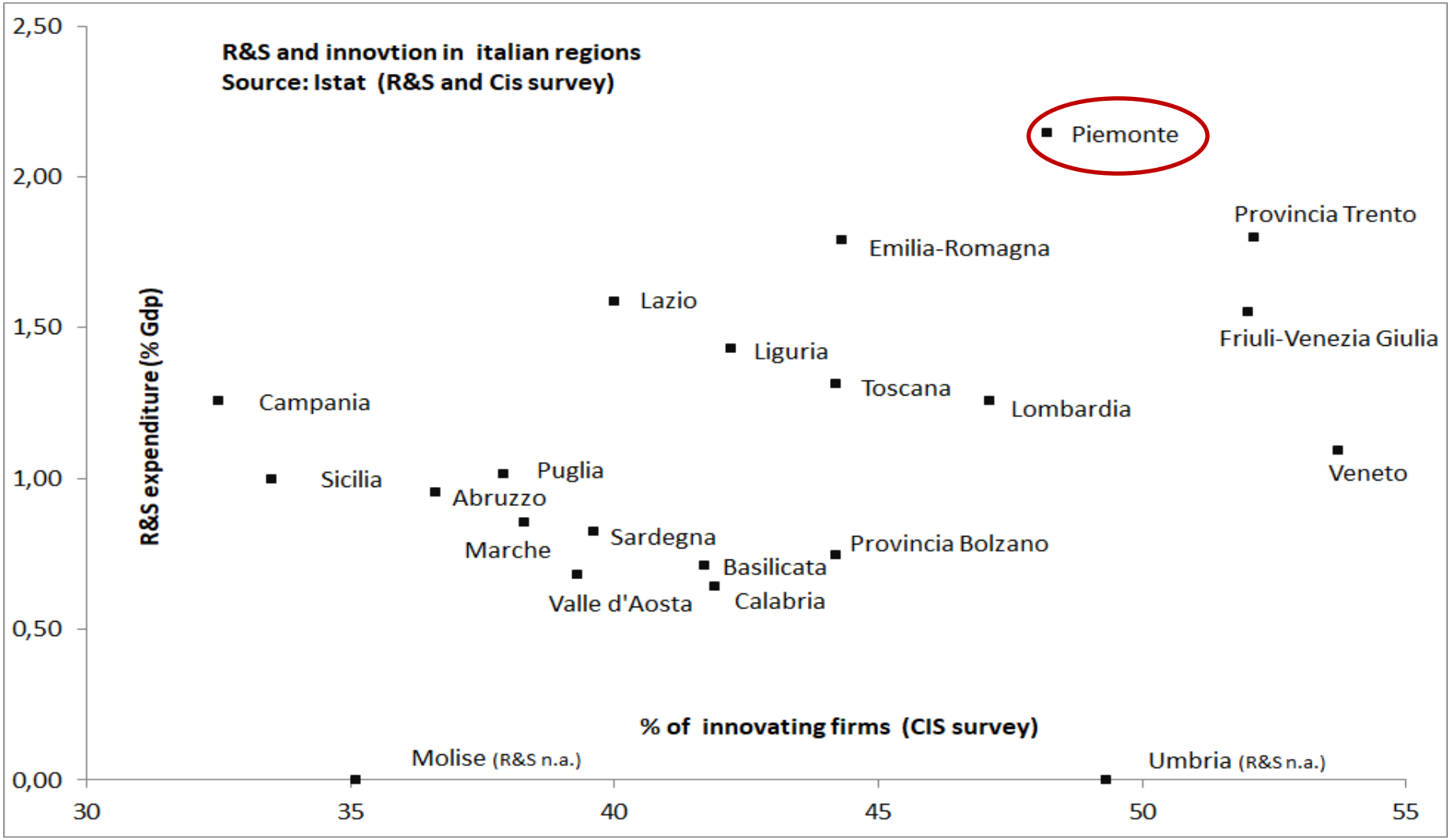


Percentage of Innovative start-up (2017)



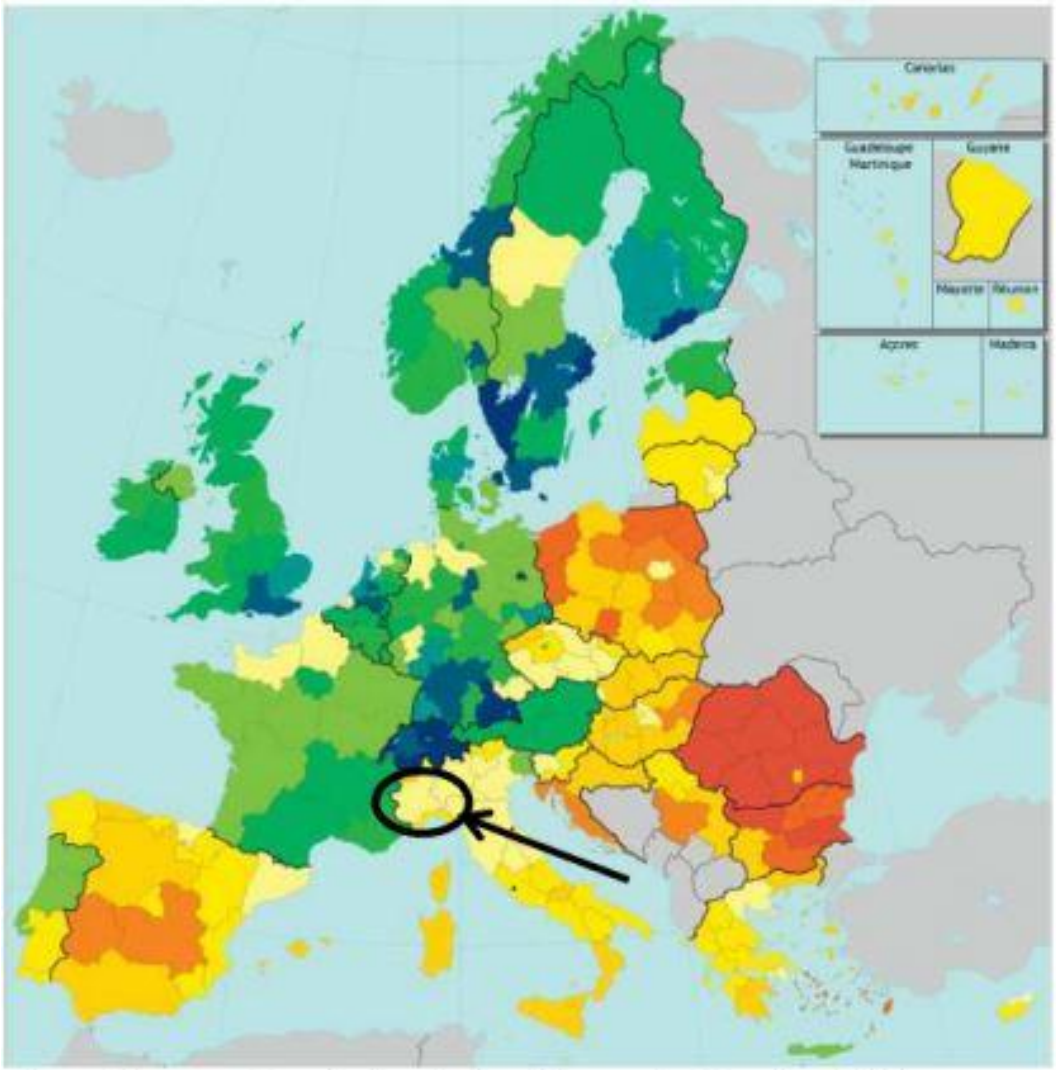
Source: Infocamere, 2017

The gap between R&D and innovation



Good performances on the R&D indicators
do not result in a more effective innovation activity

European innovation scoreboard



Fonte: European Commission, Regional Innovation Scoreboard 2019

Le regioni secondo il Regional Innovation Index (RII)

Leaders: RII superiore a 120 rispetto a media EU=100

Strong: RII tra 90 e 120 rispetto a media EU=100

Moderate: RII tra 50 e 90 rispetto a media EU=100

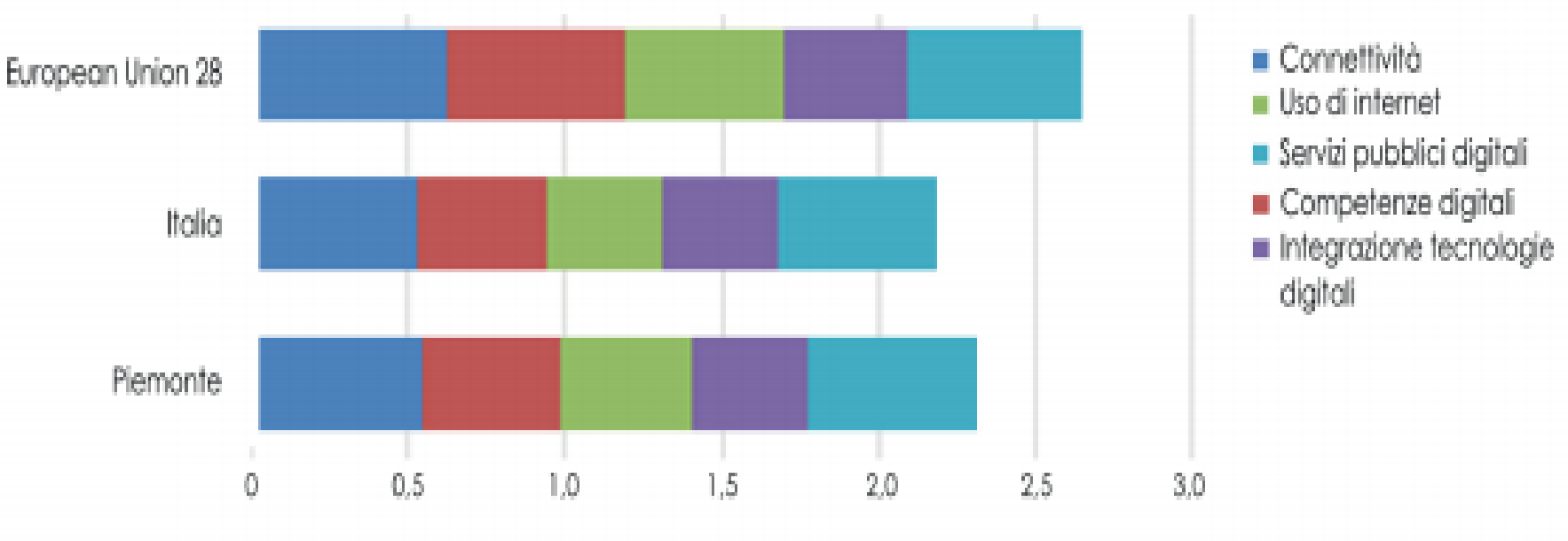
Modest: RII inferiore a 50 rispetto a media EU=100

European regional innovation scoreboard 2019

REGIONAL INNOVATION SCOREBOARD 2019		Population with tertiary education	Lifelong Learning	R&S expenditure business sector	SMEs innovating in-house	Sales of new to market and new to firm innovations
PIEMONTE	Italy	0.217	0.221	0.691	0.673	0.716
NORD PAS DE CALAIS	France	0.377	0.466	0.403	0.463	0.361
NIEDERBAYERN	Germany	0.515	0.705	0.416	0.679	0.464
PAIS VASCO	Spain	0.377	0.466	0.403	0.463	0.361

Fonte: Elaborazioni IRES su dati Regional Innovation Scoreboard 2019

Digital innovation index 2018



244M € of public resources invested in the regional policy-mix.
We put a lot of fuel but the engine is not as brilliant as it should be.

Conclusions

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mission accomplished?

... or still room for improvement?

Food for thought

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- Industries, specifically SMEs, low propensity to collaborate and to work on joint collaborative projects
- Entrepreneurial ecosystem less dynamic than in other comparable (Italian and foreign) regions
- Enterprises with a high propensity towards incremental innovation and little awareness of their innovation potential
- Skills mismatch between a large demand for specialized technicians and the offer of a manufacturing sector scarcely attractive to young generations
- Abundance of technical competences, but lack of managerial skills necessary to migrate towards more modern business models
- Mismatch in the expected timing for innovation from the industry side and the evaluation time of the call for proposals, due to complexities in the administrative procedures

Piedmont challenges

- Continue to sustain apprenticeships for higher education and research

- Contribute to a coordination between the national an regional efforts on A.M.:
  - ✓ Digital Manufacturing Competence Centre
  - ✓ High-Performance Centre for Artificial Intelligence

- Embrace societal and economic goals: promote innovation projects with a social impact

Recommendations for the future

so far so good but...

To make a more effective regional policy evaluation in Piedmont, we recommend to back-up the MANUMIX Action Plan developed so far with future additional actions, such as:

- The further inclusion of new indicators specific to A.M.
- Run ad-hoc analysis focused on venture capital
- Create a data platform for user-friendly visualization
- Run ad-hoc studies on the generational change and on the new generation of A.M. entrepreneurs

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Thank you!

Questions welcome…

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