



European Innovation Scoreboard

Performance Österreichs

Richard Deiss

Europäische Kommission, DG Forschung und Innovation

Strategischer Dialog, 29 Juni 2017 in Wien

EIS Indikatoren

- ❑ 27 Indikatoren (gleiches Gewicht), Summary Innovation Index
- ❑ Auftragnehmer (MERIT, Maastricht University)
- ❑ Revisionen der Indikatoren 2005, 2008, 2010, 2017
- ❑ 2017: 3 Indikatoren gelöscht, 5 neue Indikatoren
- ❑ 5 revidierte Indikatoren (tertiary attainment, foreign doctorate students, trademarks, employment in FGIE, KIS exports)

Gelöscht

Youth with at least upper sec. education

PCT patent appl. in societal challenges

License and patent revenues from abroad

Neu

Lifelong learning

Broadband penetration

Opportunity driven entrepreneurship

Enterprises providing ICT training

Private co-funding of public R&D

European Innovation Scoreboard

- ❑ Jährlich publiziert seit 2001
- ❑ 2010-2015 als Innovation Union Scoreboard
- ❑ Letzte Ausgabe am 20 Juni 2017 veröffentlicht
- ❑ Verfügbar online und als 100 Seiten Broschüre

http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en



Die 27 Indikatoren ab 2017

FRAMEWORK CONDITIONS

Human resources

- 1.1.1 New doctorate graduates
- 1.1.2 Population completed tertiary education
- 1.1.3 Lifelong learning

Attractive research systems

- 1.2.1 International scientific co-publications
- 1.2.2 Scientific publications among top 10% most cited
- 1.2.3 Foreign doctorate students

Innovation-friendly environment

- 1.3.1 Broadband penetration
- 1.3.2 Opportunity-driven entrepreneurship

INVESTMENTS

Finance and support

- 2.1.1 R&D expenditure in the public sector
- 2.1.2 Venture capital investments

Firm investments

- 2.2.1 R&D expenditure in the business sector
- 2.2.2 Non-R&D innovation expenditure
- 2.2.3 Enterprises providing ICT training

INNOVATION ACTIVITIES

Innovators

- 3.1.1 SMEs with product or process innovations
- 3.1.2 SMEs with marketing or organisational innovations
- 3.1.3 SMEs innovating in-house

Linkages

- 3.2.1 Innovative SMEs collaborating with others
- 3.2.2 Public-private co-publications
- 3.2.3 Private co-funding of public R&D expenditures

Intellectual assets

- 3.3.1 PCT patent applications
- 3.3.2 Trademark applications
- 3.3.3 Design applications

IMPACTS

Employment impacts

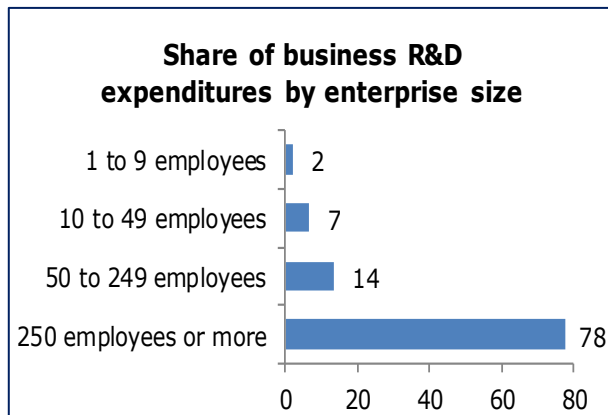
- 4.1.1 Employment in knowledge-intensive activities
- 4.1.2 Employment fast-growing firms innovative sectors

Economic effects

- 4.2.1 Medium & high tech product exports
- 4.2.2 Knowledge-intensive services exports
- 4.2.3 Sales of new-to-market/new-to-firm innovations

Kontextindikatoren

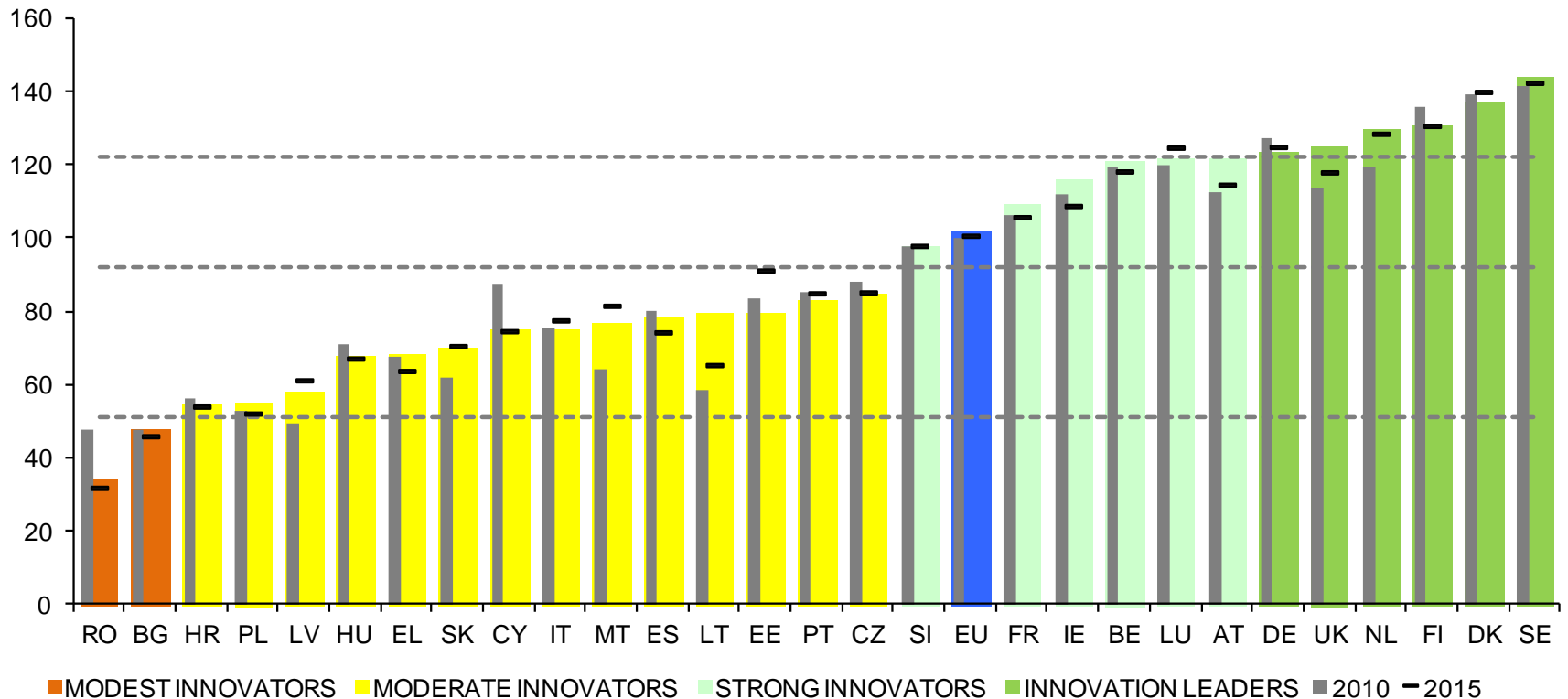
Neu (seit 2017) 23 Kontextindikatoren für den EU-Vergleich



*EIS Text: Structural differences
Notable differences are
a larger share of SMEs in turnover,
a lower share of large enterprises in turnover,
a higher number of Top R&D spending enterprises
a lower average R&D spending of these enterpri.,
higher GDP per capita,
and higher population density.*

	AT	EU
Structure of the economy		
Composition of employment, average 2011-15		
- Agriculture & Mining (NACE A-B) (%)	4.7	5.1
- Manufacturing (NACE C) (%)	15.8	15.6
of which High and Medium high-tech (%)	36.8	36.4
- Utilities and Construction (NACE D-F) (%)	9.9	8.6
- Services (NACE G-N) (%)	62.7	63.6
of which Knowledge-intensive services (%)	54.4	58.0
- Public administration, etc. (NACE O-U) (%)	6.8	7.1
Business indicators		
Composition of turnover, average 2011-2014		
- Micro enterprises (0-9 employees) (%)	17.1	17.3
- SMEs (10-249 employees) (%)	48.8	38.0
- Large enterprises (250+ employees) (%)	34.1	44.1
Share of foreign controlled enterprises, 2014 (%)	3.16	1.18
Top R&D spending enterprises		
- average number per 10 mln population, 2011-15	49.7	29.9
- average R&D spending, mln Euros, 2011-15	35.7	165.8
Enterprise births (10+ empl.) (%), avg 2012-14	1.5	1.5
Buyer sophistication 1-7 (best), 2013-14	3.7	3.6
Ease of starting a business, Doing Business 2017	78.9	76.5
Socio-demographic indicators		
GDP per capita, PPS, avg 2011-13	32,900	25,400
Change in GDP between 2010 and 2015, (%)	5.4	5.4
Population size, avg 2011-15 (millions)	8.5	505.5
Change in population between 2010 and 2015 (%)	2.7	1.1
Population aged 15-64, avg 2011-2015 (%)	67.5	66.1
Population density, average 2011-15	103.1	116.4
Degree of urbanisation, average 2011-15 (%)	63.8	74.4

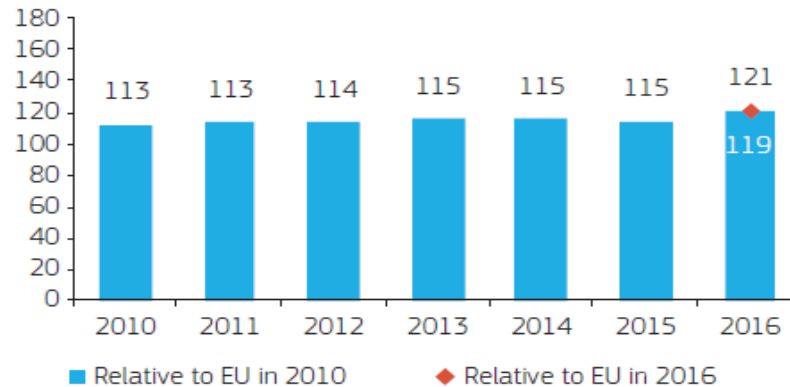
EIS 2017 ranking (EU)



Innovation leaders: Schweden, Dänemark, Finnland, Niederlande, UK, Deutschland (Europaweit: Schweiz, Welt: Südkorea)

Österreichs Ranking

**März 2011
Annahme der
FTI-Strategie
Innovation
leader in
Österreich**



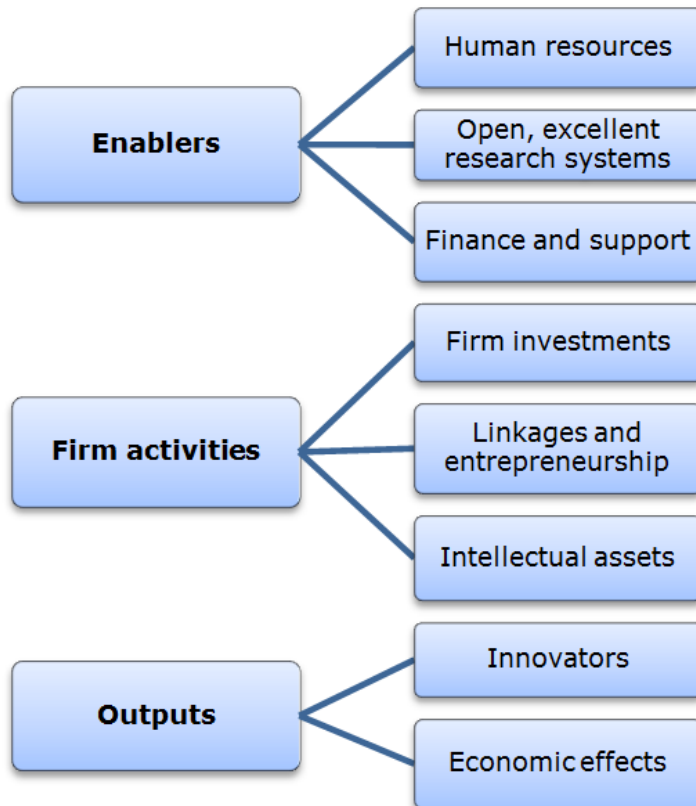
**Indikatoren-Time lag:
bis 2015 3 Jahre,
seither auf 2 Jahre
reduziert.
Wirkungsverzögerung:
bis über 10 Jahre.**

	2010 (2010)	2011 (2011)	2012 (2013)	2013 (3/2014)	2014 (2/2015)	2015 (6/2016)	2016 (6/2017)
Jeweiliger Bericht	7	8	9	10	11	10	7
Bericht 2017	9	9	9	9	9	9	7

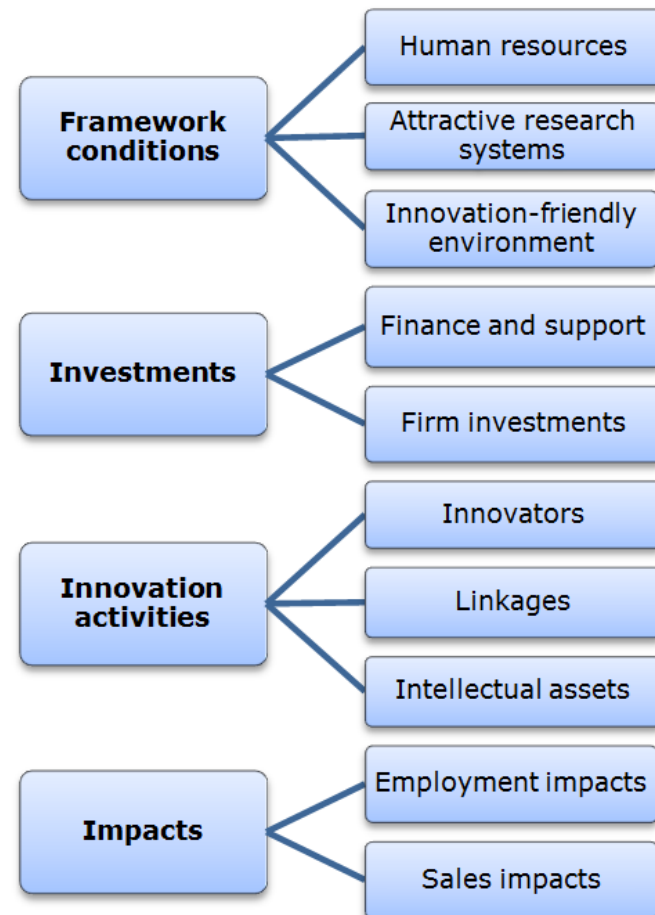
Österreich gehört zu den Ländern mit den größten Fortschritten (8 Punkte seit 2010), nach UK (11 Punkte), NL (11).
Rückgang seit 2010 in FI (-5), DE (-4), DK (-3).

Änderung im Messrahmen 2017

EIS 2016 measurement framework



EIS 2017 measurement framework



Human resources

	2010	2011	2012	2013	2014	2015	2016	Score points
New doctorate graduates (per 1000 pop 25-34)	2.1	2.3	2.2	2.2	<u>2.0</u>	2.0	1.9 (2015)	130.7 (-15.5)
Population completed tertiary education (% , 25-34)	20.7	20.9	22.8	24.9	<u>38.4</u>	38.6	39.7 (2016)	140.1 (+125.0)
Lifelong learning (% , 25-64)	13.8	13.5	14.2	14.1	14.3	14.4	14.9 (2016)	144.2 (+11.6)

Österreich über dem EU-Durchschnitt

- ❑ **New doctorate graduates:** Rückgang seit 2014 (ISCED –Revision?)
- ❑ **Tertiary attainment:** Zeitreihenbruch 2014 (ISCED)
- ❑ **LLL:** leichte Aufwärtstendenz in den letzten Jahren, Indikator reagiert kaum auf Politikmaßnahmen

Attractive research systems

	2010	2011	2012	2013	2014	2015	2016	Score points
International scientific co-publications (per million pop.)	890.2	971.9	1037.6	1123.8	1179.9	1236.8	1335.9 (2016)	157.6 (+152.7)
Scientific publications among top 10% most cited (%)	11.4	10.5	11.5	11.2	11.1	12.0	11.7 (2014)	116.9 (+3.6)
Foreign doctorate students (%)	27.5	24.3	24.6	26.0	27.5	25.1	27.0 (2015)	114.9 (-2.1)

Österreich über dem EU-Durchschnitt

- ❑ **Co-publications:** Gute Performance, hohes Wachstum
- ❑ **Most-cited publ.:** Gute Performance, leichtes Wachstum
- ❑ **Foreign doctorate students:** leichter Rückgang

Innovation friendly environment

	2010	2011	2012	2013	2014	2015	2016	Score points
Broadband penetration (% of enterprises)	12.0	12.0	12.0	12.0	12.0	10.0	12.0 (2016)	133.3 (0.0)
Opportunity-driven entrepreneurship (Ratio)	8.7	8.7	3.5	3.5	3.5	3.4	3.2 (2016)	94.4 (-86.5)

Österreich insgesamt noch gut, aber Rückgang der Leistung

- ❑ **Broadband:** Gute Performance, kein Wachstum
- ❑ **Entrepreneurship:** starker Rückgang von einst hohem Niveau

Finance and support

	2010	2011	2012	2013	2014	2015	2016	Score points (Change)
R&D expenditure in the public sector (% of GDP)	0.8	0.9	0.8	0.9	0.9	0.9	0.9 (2015)	130.2 (+12.4)
Venture capital investments (% of GDP)	0.041	0.038	0.049	0.041	0.042	0.029	0.051 (2015)	52.5 (+9.7)

Österreich insgesamt leicht unterdurchschnittlich, aber Verbesserung

- ❑ **Public R&D expenditure:** Gute Performance, weitere Verbesserung
- ❑ **Venture Capital:** Unter dem Durchschnitt, aber Verbesserung
(Zeitverzögerung durch 3-Jahres-Durchschnitte, jüngster Aufschwung wird die nächsten Jahre durchschlagen, 2016 noch nicht enthalten)

Firm investments

	2010	2011	2012	2013	2014	2015	2016	Score points
R&D expenditure in the business sector (% of GDP)	1.8	1.9	1.8	2.1	2.1	2.2	2.2 (2015)	185.0 (+34.3)
Non-R&D innovation expenditure (% of turnover)	0.5	0.5	0.4	0.4	0.5	0.5	0.5 (2014)	61.5 (+0.5)
Enterprises providing ICT training (%)	29.0	29.0	29.0	29.0	34.0	33.0	37.0 (2016)	228.6 (+57.1)

Österreich stark überdurchschnittlich, weitere Verbesserung

- ❑ **Business R&D expenditure:** Gute Performance, Verbesserung
- ❑ **Non-R&D expenditure:** Unter dem Durchschnitt, Stagnation
- ❑ **Enterprises providing ICT training:** Gute Leistung, Verbesserung

Innovators

	2010	2011	2012	2013	2014	2015	2016	Score points
SMEs with product or process innovations (%)	39.6	39.6	40.7	40.7	35.7	35.7	40.7 (2014)	124.0 (+6.4)
SMEs with marketing or organisational innovations (%)	42.8	42.8	42.3	42.3	44.7	44.7	46.1 (2014)	121.3 (+11.4)
SMEs innovating in-house (%)	34.4	34.4	36.1	36.1	31.8	31.8	35.0 (2014)	121.6 (+2.7)

Österreich überdurchschnittlich, leichte Verbesserung

- ❑ **SME with product, process inno.:** Gute Performance, Verbesserung
- ❑ **SME with marketin, org. inno.:** Gute Performance, Verbesserung
- ❑ **SME innov. in-house:** Gute Performance, leichte Verbesserung

ERA priority
Optimal access to,
transfer and circulation
of scientific knowledge

Linkages

	2010	2011	2012	2013	2014	2015	2016	Score points
Innovative SMEs collaborating with others (%)	14.7	14.7	20.5	20.5	15.3	15.3	20.5 (2014)	193.3 (+57.9)
Public-private co-publications (per mio. population)	59.4	64.7	66.9	62.4	60.5	67.6	57.6 (2015)	127.9 (-2.2)
Private co-funding of public R&D expenditures (% of GDP)	0.044	0.044	0.041	0.041	0.042	0.042	0.042 (2015)	79.5 (-2.8)

Österreich überdurchschnittlich, leichte Verbesserung

- ❑ **SME collaborating:** Gute Performance, starke Verbesserung
- ❑ **Public-private co-public.:** Gute Performance, leichter Rückgang
- ❑ **Private co-funding:** unterdurchschnittlich, leichter Rückgang

Intellectual assets

	2010	2011	2012	2013	2014	2015	2016	Score points
PCT patent applications (per billion GDP)	4.4	5.0	5.3	5.2	4.8	5.0	4.9 (2014)	115.5 (+6.0)
Trademark applications (per billion GDP)	13.7	13.4	13.3	13.6	13.2	12.8	12.9 (2015)	163.4 (-7.0)
Design applications (per billion GDP)	8.2	8.1	8.3	8.1	7.8	7.4	7.1 (2015)	154.3 (-24.0)

Österreich überdurchschnittlich, aber Rückgang

- ❑ **PCT patents:** Gute Performance, leichte Verbesserung
- ❑ **Trademarks:** Gute Performance, leichter Rückgang
- ❑ **Designs:** Gute Performance, aber Rückgang

Employment impacts

	2010	2011	2012	2013	2014	2015	2016	Score points
Employment in knowledge-intensive activities (%)	14.4	14.0	14.2	14.6	14.7	14.5	14.6 (2016)	114.1 (+2.6)
Employment fast-growing firms innovative sectors (%)	2.9	2.9	2.9	2.9	2.9	3.1	2.9 (2014)	52.5 (+0.2)

Österreich unterdurchschnittlich, aber leicht positive Tendenz

- Employment KIA:** Gute Performance, leichte Verbesserung
- Employment FGIE:** Schwache Performance, Stagnation

Sales impacts

	2010	2011	2012	2013	2014	2015	2016	Score points
Medium & high tech product exports (% of goods exports)	54.3	54.2	53.9	55.1	56.6	57.0	57.6 (2015)	106.6 (+9.0)
Knowledge-intensive services exports (% of services exports)	45.1	45.1	45.1	45.1	44.8	45.1	44.4 (2015)	54.1 (-1.5)
Sales of new-to-market and new-to-firm innovations (% of turnover)	11.2	11.2	11.9	11.9	9.8	9.8	12.0 (2014)	87.3 (+7.2)

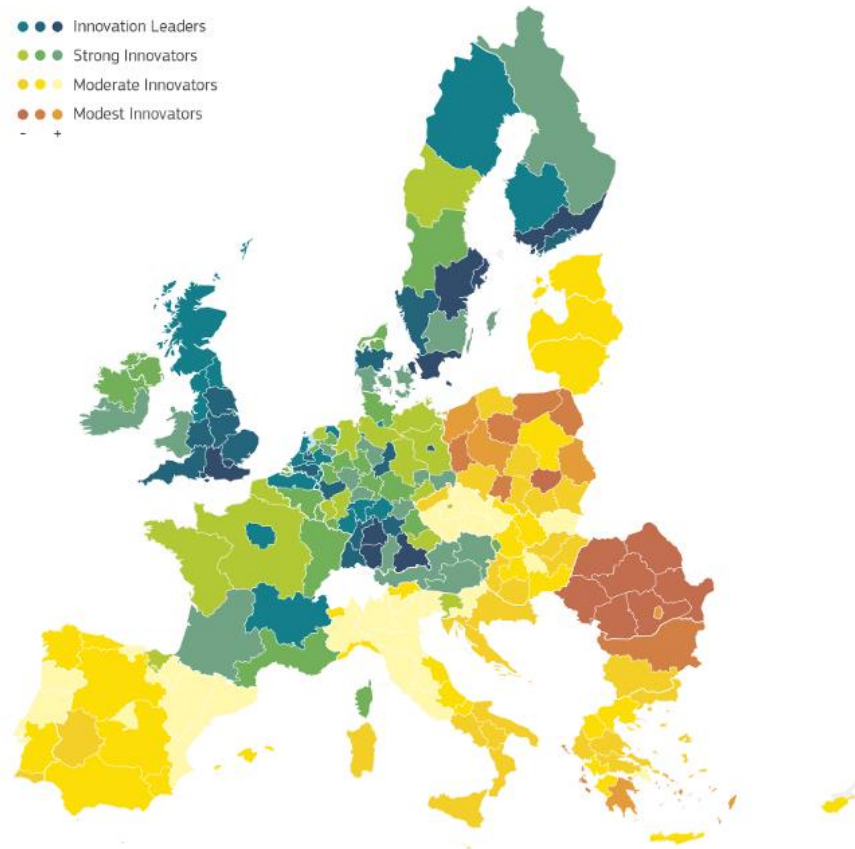
Österreich unterdurchschnittlich, aber leicht positive Tendenz

- ❑ **MHT exports:** Gute Performance, leichte Verbesserung
- ❑ **KIS exports:** Schwache Performance, Stagnation
- ❑ **Sales of ntm innov.:** Unterdurchschnittlich, Verbesserung

Regional Innovation Scoreboard

Österreichs Regionen

Alle 3 Regionen
(Ost-, Süd-,
Westösterreich)
Strong+
innovators



Vielen Dank für Ihre Aufmerksamkeit!



Since 2010, the innovation performance improved in 15 EU countries and worsened in 13 EU countries:

Für Fragen: Richard.Deiss@ec.europa.eu