

AUSTRIA'S PERSPECTIVES ON THE DEVELOPMENT OF RTI

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AUSTRIA: HARD FACTS – SOFT INDICATORS

Source: statistic Austria 2013

- **R&D-Quote:** 3 % GDP
- **R&D employed persons:** 110.463
- **R&D employed persons FTE:** 66.186
- **Universities:** 22
- **Applied Universities:** 21
- **Private Universities:** 12
- **PhD granting institutions:** 27
- **Students in WS 2014/15:**
 - Universities:** 314.216
 - AppU:** 48.051
- **Students from Austria:**
 - Universities:** 260.969
 - ApU:** 42.872
- Population 8.2 mio. R&D expenses: ~ 10.4 billion 2015
- Employed persons 4.33 mio. ~ 2.5 % in R&D

R&D 2013

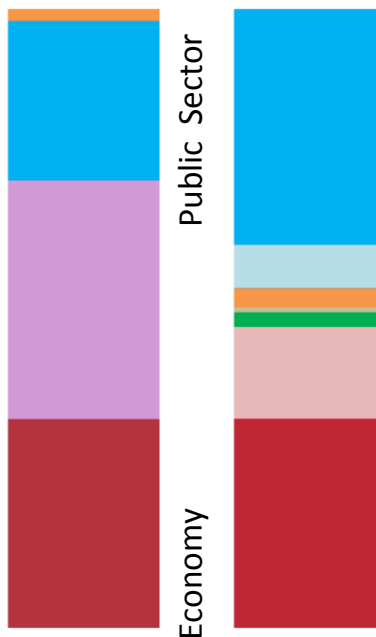
R&D according to type of research

total: 9.571.282

public hospitals estimated:	158.058
basic research:	1.806.318
applied research:	3.402.988
experimental development:	4.203.918

expenses financing

in 1.000 EUR:



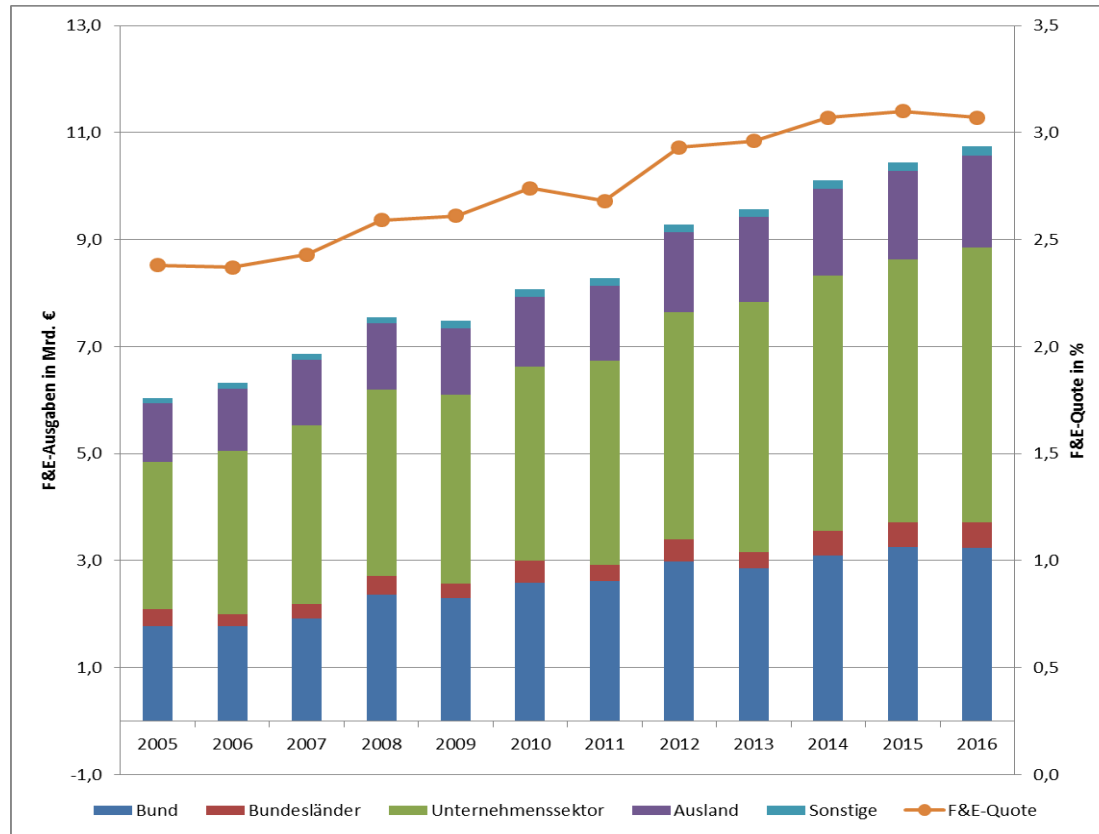
R&D according to financing sectors

total: 9.571.282

Federal:	2.428.439
FWF, FFG, others:	526.283
Provinces incl. public hospitals estimated:	307.450
cities, villages:	7.678
non-profit sector:	45.473
European Union:	180.660
From abroad:	1.409.551
enterprises:	4.665.748

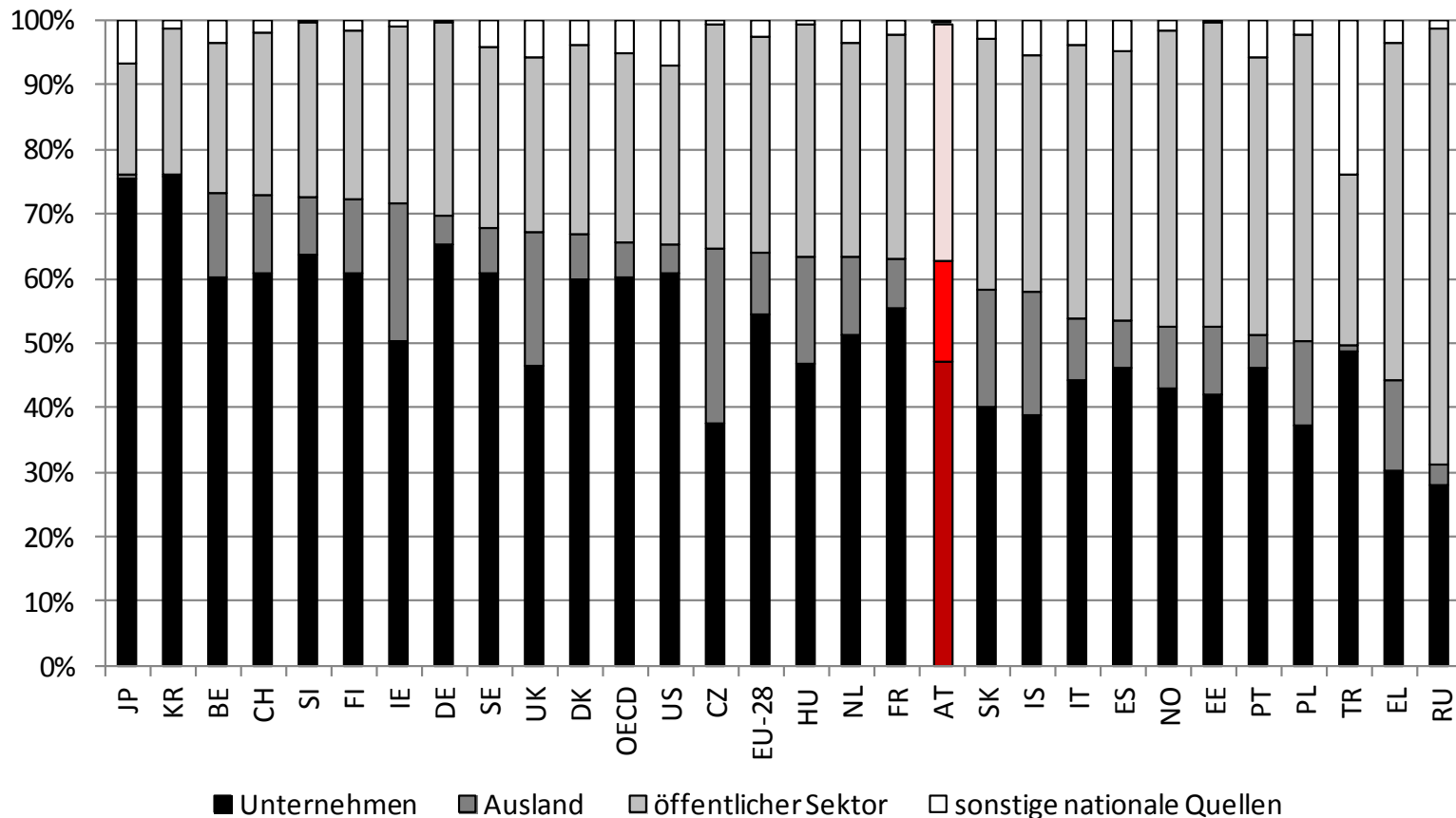
GDP 2015 ~ € 337,2 billion (+2,4 %), € 39.380 € per inhabitant

Expenses R&D



Source: Statistik Austria, global estimation (20160420) nominal values.

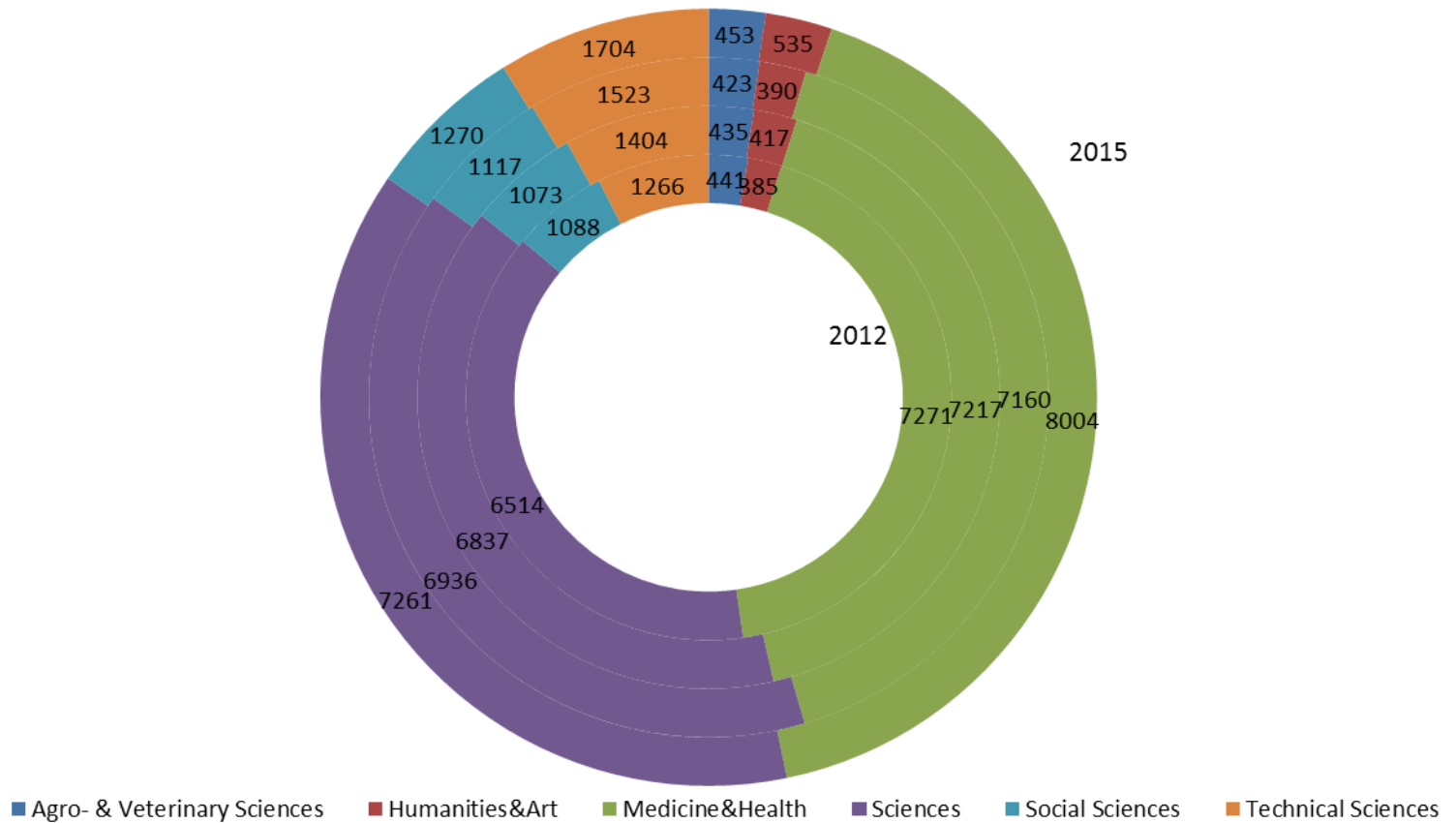
FINANCING STRUCTURE INTERNATIONAL COMPARISON 2013



Note: some countries estimations only

Source: OECD - MSTI, Statistik Austria. Calculation: WIFO.

NUMBER OF PUBLICATIONS 2012 - 2015

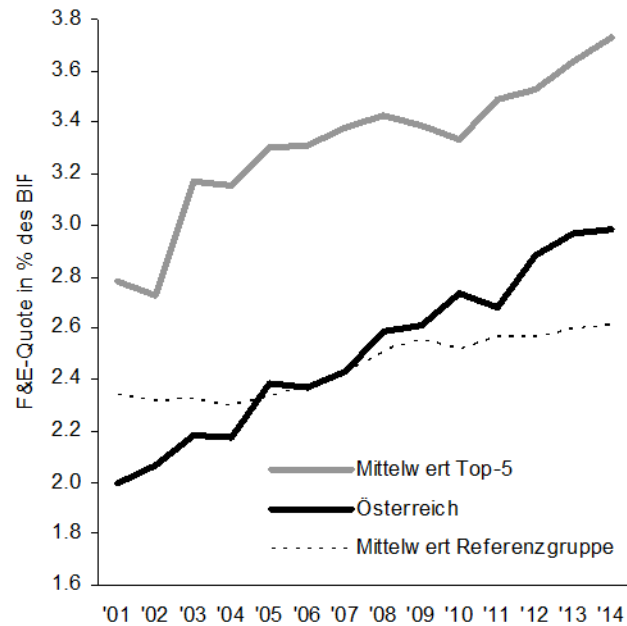


**Bibliometric data from top 30 countries 2004–2014
(ranked by citations per 1000 population)**

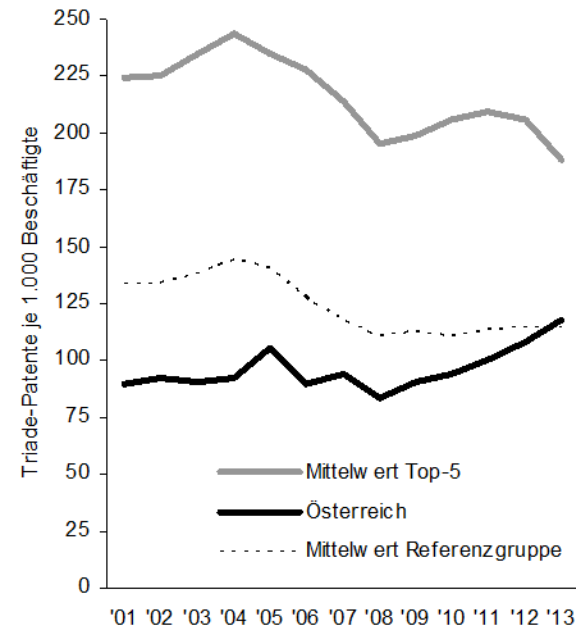
Rank	Country	Papers	Citations	Ø Population in 1000 (2013)	Citations per paper	Papers per 1000 population	Citations per 1000 population
1	Switzerland	231.039	4.392.219	7.996	19,0	28,9	549,3
2	Iceland	7.460	142.022	315	19,0	23,7	450,9
3	Denmark	126.752	2.209.515	5.556	17,4	22,8	397,7
4	Sweden	214.749	3.486.765	9.119	16,2	23,5	382,4
5	Netherlands	320.694	5.682.803	16.805	17,7	19,1	338,2
6	Finland	106.476	1.582.192	5.266	14,9	20,2	300,5
7	Norway	96.955	1.378.771	4.723	14,2	20,5	291,9
8	United Kingdom	1.030.137	17.208.461	63.396	16,7	16,2	271,4
9	Belgium	176.201	2.794.752	10.444	15,9	16,9	267,6
10	Canada	563.530	8.410.170	34.568	14,9	16,3	243,3
11	Australia	413.971	5.570.154	22.263	13,5	18,6	250,2
12	Israel	126.360	1.798.744	7.707	14,2	16,4	233,4
13	Singapore	92.522	1.221.515	5.460	13,2	16,9	223,7
14	Austria	119.893	1.784.592	8.222	14,9	14,6	217,1
15	New Zealand	73.837	937.895	4.365	12,7	16,9	214,9
16	USA	3.578.524	61.199.762	316.669	17,1	11,3	193,3
17	Ireland	63.479	892.274	4.776	14,1	13,3	186,8
18	Germany	931.369	14.025.676	81.147	15,1	11,5	172,8
19	France	659.786	9.362.660	65.952	14,2	10,0	142,0
20	Slovenia	32.486	279.234	1.993	8,6	16,3	140,1
21	Estonia	12.948	154.046	1.226	11,9	10,6	125,6
22	Italy	541.756	7.328.392	61.482	13,5	8,8	119,2
23	Spain	456.825	5.559.878	47.371	12,2	9,6	117,4
24	Greece	104.876	1.165.557	10.773	11,1	9,7	108,2
25	Portugal	95.313	1.037.833	10.799	10,9	8,8	96,1
26	Taiwan	241.872	2.089.926	23.300	8,6	10,4	89,7
27	Czech Republic	91.127	883.112	10.163	9,7	9,0	86,9
28	Japan	829.263	9.501.629	127.253	11,5	6,5	74,7
29	South Korea	406.976	3.447.680	48.955	8,5	8,3	70,4
30	Hungary	59.797	685.504	9.939	11,5	6,0	69,0

Sources: (1) papers and citations from ISI „Essential Science Indicators“; (2) population data: CIA Factbook 2013.

R&D QUOTA

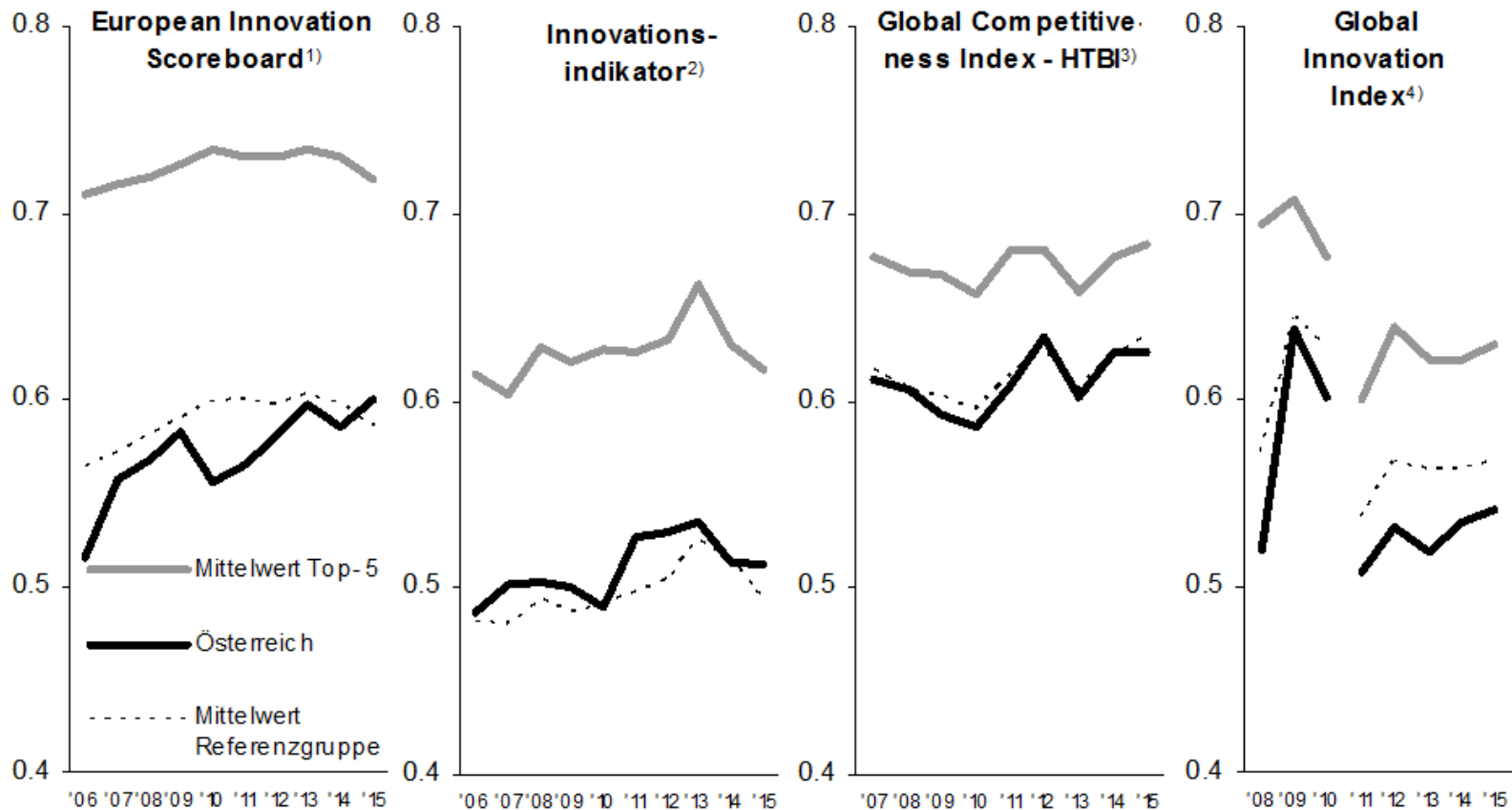


TRIADE-PATENT INTENSITY



Source: OECD: MSTI, 2/2015. Calculation: ZEW.

INNOVATION RANKINGS



Quellen: acatech und BDI (2015); Europäische Kommission (2015); Cornell University et al. (2015); WEF (2015). Assembling and calculations: ZEW

RTI-Governance and focussing

Federal RTI Strategy 2011 + 9 regional RTI Strategies

Federal Task Force high level administrative representatives of ministries for

- Science, Research and Economics
- Traffic and Infrastructure
- Education and Women
- Finances

Advisory Boards on the federal and regional level

- Austrian Council for Research and Technology Development
- Austria Science Board for matters of Universities
- ERA Council Forum Austria
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RTI-GOVERNANCE AND FOCUSING

Performance Agreements with all publicly funded research organisations

- Universities,
- non – university Institutes

- financial security for 3 years
- during the 3 years period regular meetings between research organisations and representatives of the ministry
- yearly financial reports
- quantitative and qualitative reports on the performance

Quite demanding on both sides – universities are autonomous as are the main non university research institutes

RTI-GOVERNANCE AND FOCUSING

Public competitive Funding is mainly administrated by 3 funding agencies

- FWF – for basic research
(2015 ~ € 200 mio.)
- FFG - for applied research and experimental development
(2015 ~ € 467 mio.)
- aws - financing of start-ups etc.
(2015 ~ 5 bio. Loans, guarantees, subsidies,..)

RTI-GOVERNANCE AND FOCUSING

- Support for acquiring EU-funds

	FP7 (Stand 11/2013)	Horizon 2020 (Stand 10/2015)
Austrian participation in all programs	2,5 %	2,8 %
„capacities“ (comparing the success rate per country and Researchers, Scientists and Engineers)	127	131
return in comparison to the Austrian contribution to the EU - Budget	125	126

RTI-GOVERNANCE AND FOCUSING

Based on the RTI Strategy 2011 using the concept of Smart Specialisation the following focal areas arise:

- ICT
- Life Science
- Materials Science
- Bio economy and Sustainability
- Humanities, Social Sciences and Art

Grand Challenges

- Climate Change
- Secure, clean and efficient energy and resource efficiency
- Secure societies quality of living (urban development, mobility, migration)

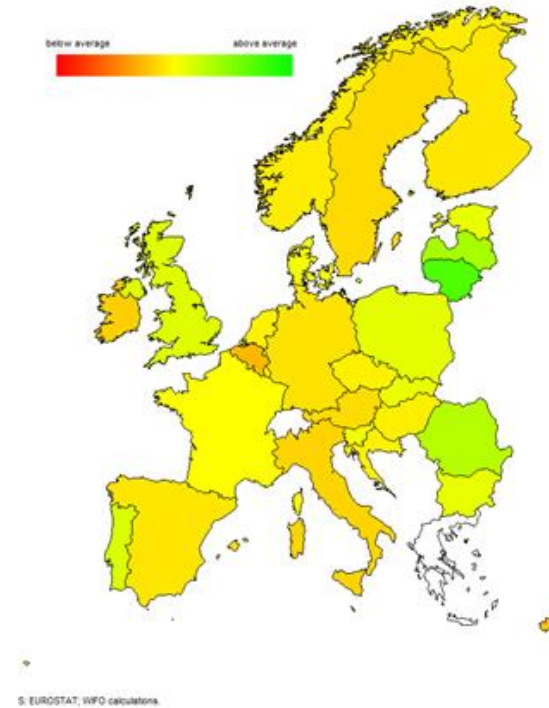
Fast growing business

Anteil schnellwachsender Unternehmen (10%)

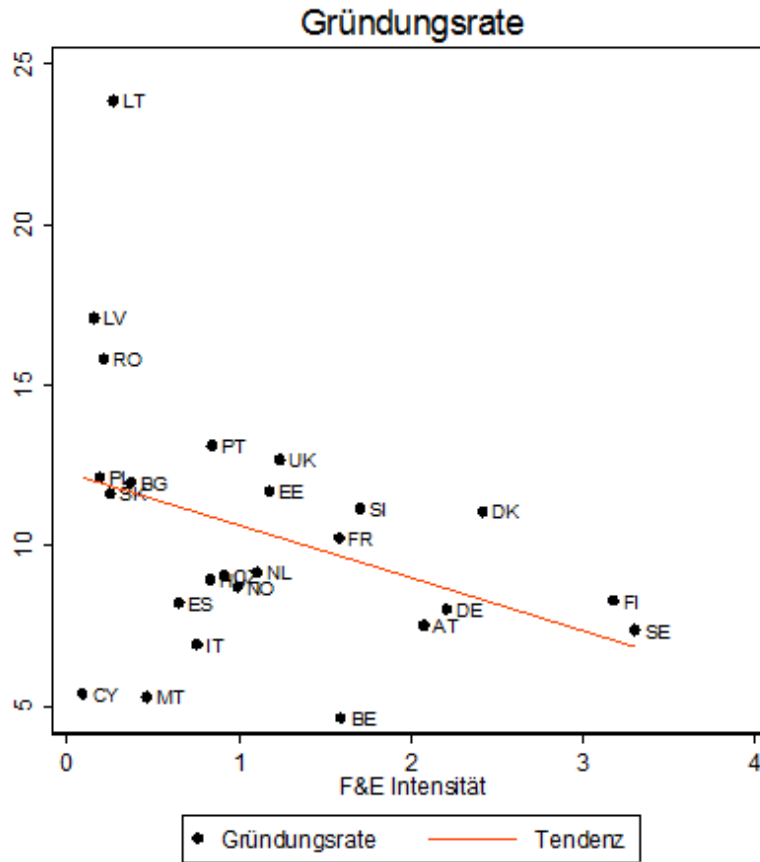


business founding rate

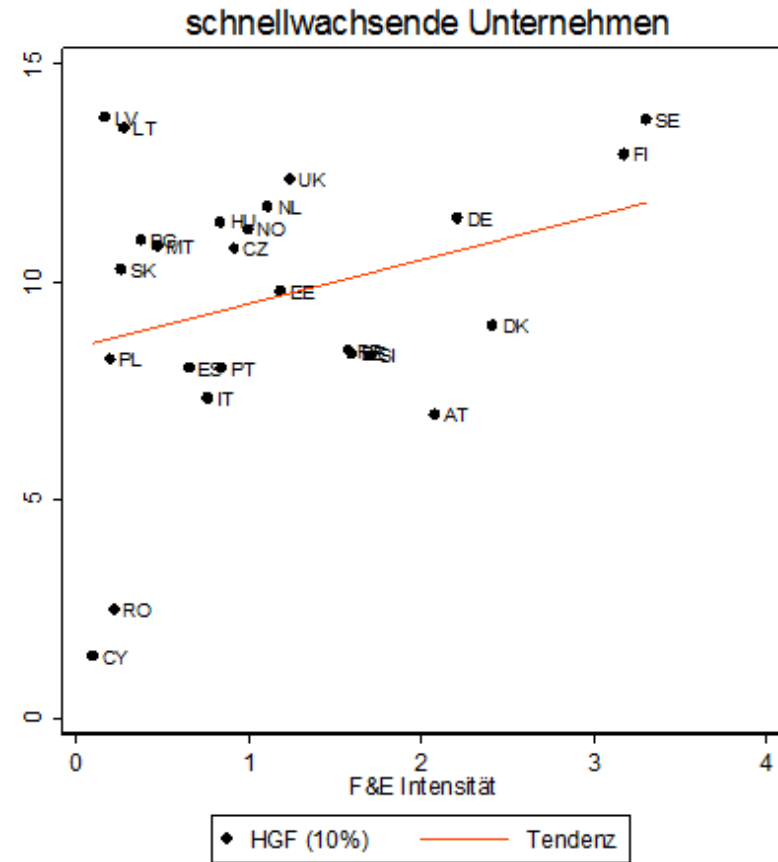
Gründungsrate



business founding rate



fast growing business



note: mean values taken 2011–2013.

source: Eurostat, Structural Business Statistics. Calculation: WIFO

Österreich	Innovation Leader (DE, DK, FI, SE)	Innovation Follower (AT, BE, CY, EE, FR, IE, LU, NL, SI, UK)	Moderate Innovators (CZ, ES, HR, HU, IT, LT, PL, PT, SK)	Modest Innovators (BG, LV, RO)
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Gründungsraten in %

Produktionsbranchen

Hochtechnologie Branchen	6,1	5,0	4,8	5,8	10,4
Branchen mit mittlerer Technologieintensität	4,7	5,3	6,0	7,9	11,6
Niedrigtechnologiebranchen	4,9	5,9	5,9	8,6	12,3

Dienstleistungen

wissensintensive DL - Hochtechnologie	8,1	12,3	12,1	12,3	20,8
wissensintensive DL – Finanzwirtschaft	5,1	8,0	8,7	14,2	18,4
wissensintensive Marktdienstleistungen	7,5	10,5	10,2	10,9	15,2
DL mit niedriger Wissensintensität	7,9	8,2	8,6	10,8	14,4

Beschäftigungsanteile in %

Produktionsbranchen

Hochtechnologie Branchen	7,0	12,2	5,2	6,1	6,3
Branchen mit mittlerer Technologieintensität	6,5	7,3	4,5	6,7	5,9
Niedrigtechnologiebranchen	4,6	3,8	3,1	5,7	10,0

Dienstleistungen

wissensintensive DL - Hochtechnologie	3,6	4,4	4,8	2,9	3,7
wissensintensive DL – Finanzwirtschaft	4,4	4,1	5,1	3,7	2,2
wissensintensive Marktdienstleistungen	12,2	12,5	14,2	9,1	9,1
DL mit niedriger Wissensintensität	44,9	39,8	46,3	40,5	41,3

Thank you for your attention!

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CURRENT ECONOMIC DATA - AUSTRIA

economic development indicators

rate of change in %

	2013	2014	2015	2016	2017
GDP, nominal	1.8	2.0	2.4	3.7	3.2
GDP, real	0.3	0.4	0.9	1.6	1.6
Employment	0.6	0.7	1.0	1.2	1.2
Unemployment rate (Eurostat, in %)	5.4	5.6	5.7	5.9	6.1
Net lending of Government (in % of GDP)	-1.3	-2.7	-1.2	-	-
Gross debt of government (in % of GDP)	80.8	84.3	86.2	-	-