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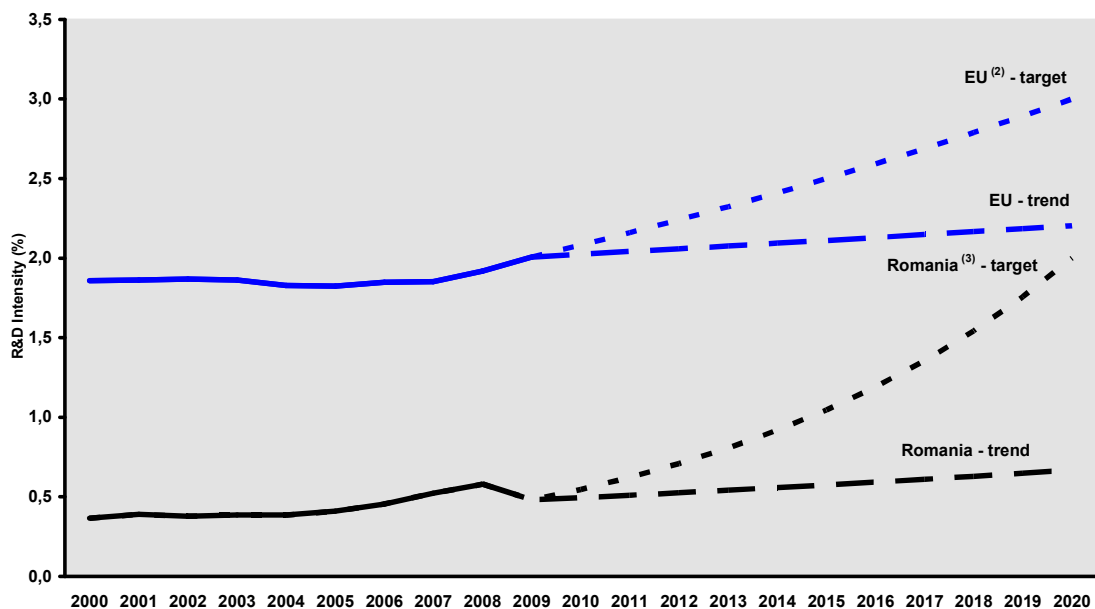
COMMISSION STAFF WORKING PAPER
Innovation Union Competitiveness report 2011

Progress towards meeting the Europe 2020 R&D intensity target

In the last decade, the R&D intensity in Romania increased from 0.37% in 2000 to 0.48% in 2009. Despite this moderate positive trend, Romania still scores one of the lowest R&D intensity in the European Union. Using a multiannual perspective, the Romanian 2007-2013 Strategy for Research, Development and Innovation has foreseen a gradual increase of the R&D public budget. However the further planned increase of the R&D public budget in 2009 did not take place, mainly due to the economic crisis. A substantial increase of the R&D spending, both in absolute and relative terms, will be instrumental for Romania in order to raise the economic competitiveness and secure high-quality jobs.

Romanian authorities have recognised this and have set an ambitious but achievable target for 2020: R&D intensity is expected to account for 2.0% of the national GDP in 2020.

Romania - R&D Intensity projections, 2000-2020 ⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: DG Research and Innovation, Eurostat

Notes: (1) The R&D Intensity projections based on trends are derived from the average annual growth in R&D Intensity 2000-2009.

(2) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.

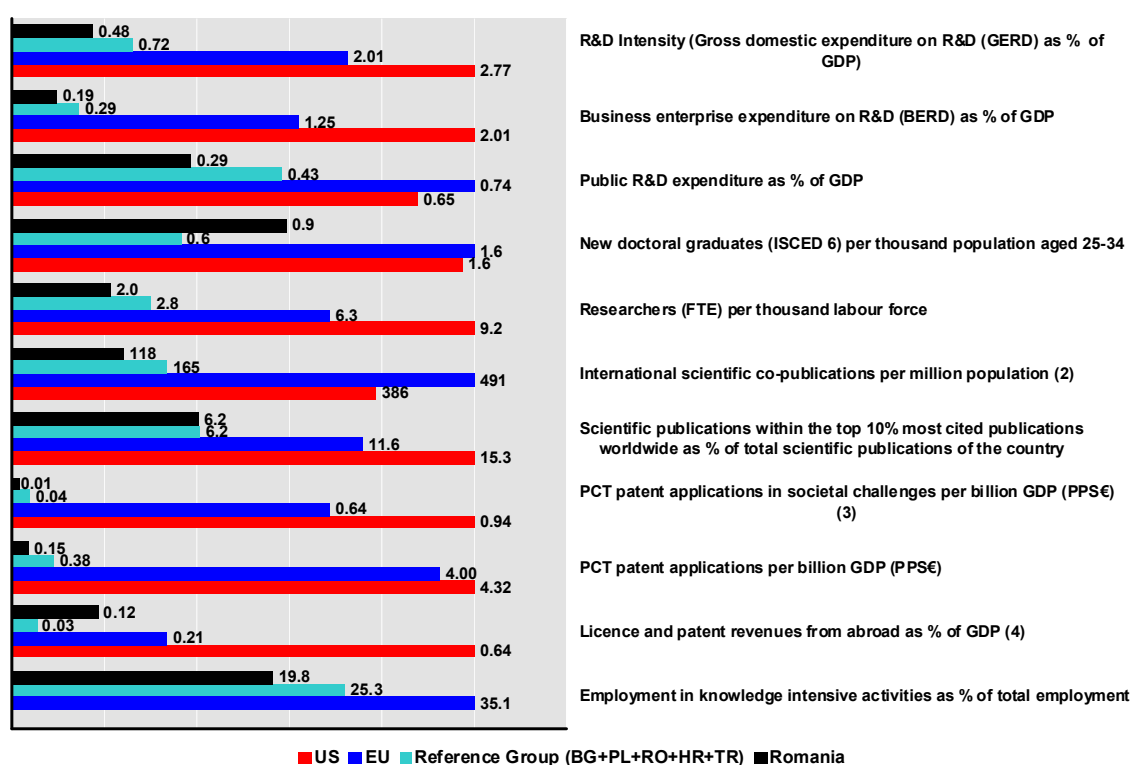
(3) RO: This projection is based on a tentative R&D Intensity target of 2.0% for 2020.

Research and Innovation Performance

An important challenge is the overall fragmentation of the Romanian Research and Innovation system, as reflected by the large number of research performers (universities, research institutes and institutes of the Romanian Academy) combined with a lack of critical mass of the quality of research results. Romania scores low both in terms of high-impact scientific publications and patent applications. The weak scientific and technological performance is combined with rather unfavourable framework conditions for business R&D, as reflected by the low figures of business enterprise expenditure on R&D. As expected in this context, the employment in knowledge intensive activities appears to be one of the lowest in the EU.

Romania

R&D profile, 2009 ⁽¹⁾



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) The values refer to 2009 or to the latest available year.

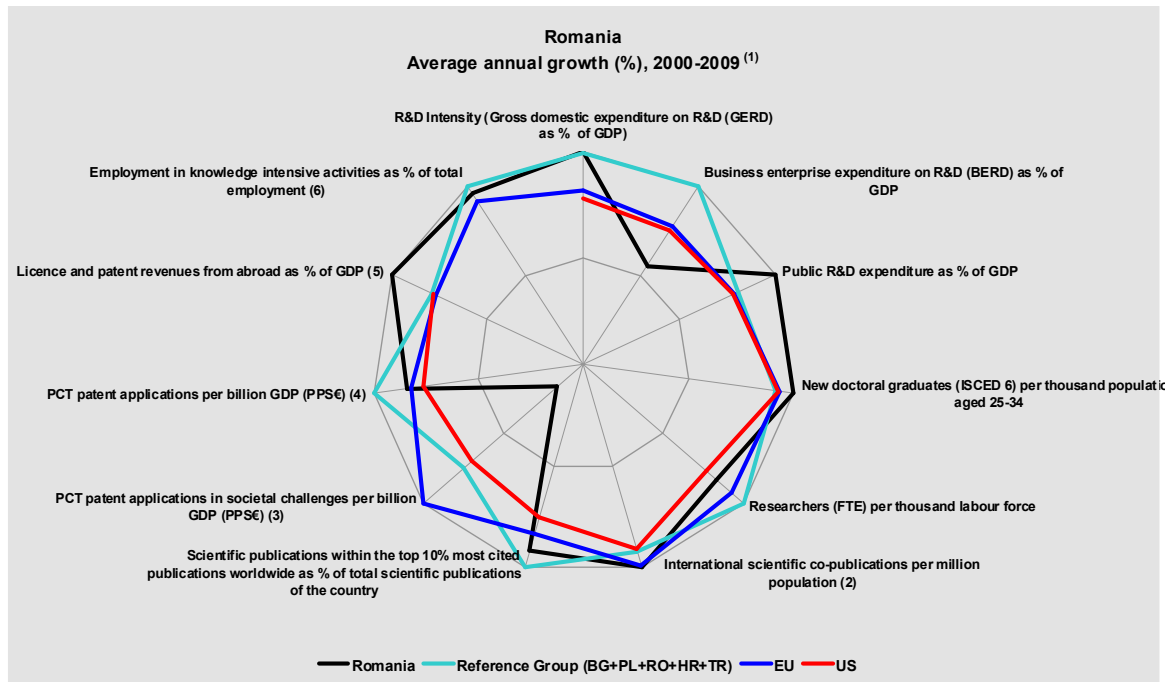
(2) (i) HR and TR are not included in the Reference Group; (ii) The EU value refers to the median rather than to the average.

(3) HR is not included in the Reference Group.

(4) EU refers to extra-EU.

(5) Elements of estimation were involved in the compilation of the data.

In comparison with similar countries both in terms of industrial structure and R&D performance, as well as with the EU as a whole, Romania appears particularly weak as regards the dynamics of private sector R&D and implicitly the framework conditions for business R&D put in place by the national authorities. This is reflected both by the yet again overall decrease of business enterprise expenditure on R&D between 2000 and 2008 and the number of patent applications in societal challenges. At the contrary, Romania is improving beyond the EU average and the reference group countries in public R&D expenditure and new doctoral graduates.



Source: DG Research and Innovation

Innovation Union Competitiveness Report 2011

Data: Eurostat, OECD, Science Matrix / Scopus (Elsevier)

Notes: (1) Growth rates which do not refer to 2000-2009 refer to growth between the earliest available year and the latest available year over the period 2000-2010.

(2) (i) HR and TR are not included in the Reference Group; (ii) EU refers to the median rather than to the average.

(3) HR is not included in the Reference Group; Average annual growth refers to real growth.

(4) Average annual growth refers to real growth.

(5) EU refers to extra-EU.

(6) TR is not included in the Reference Group.

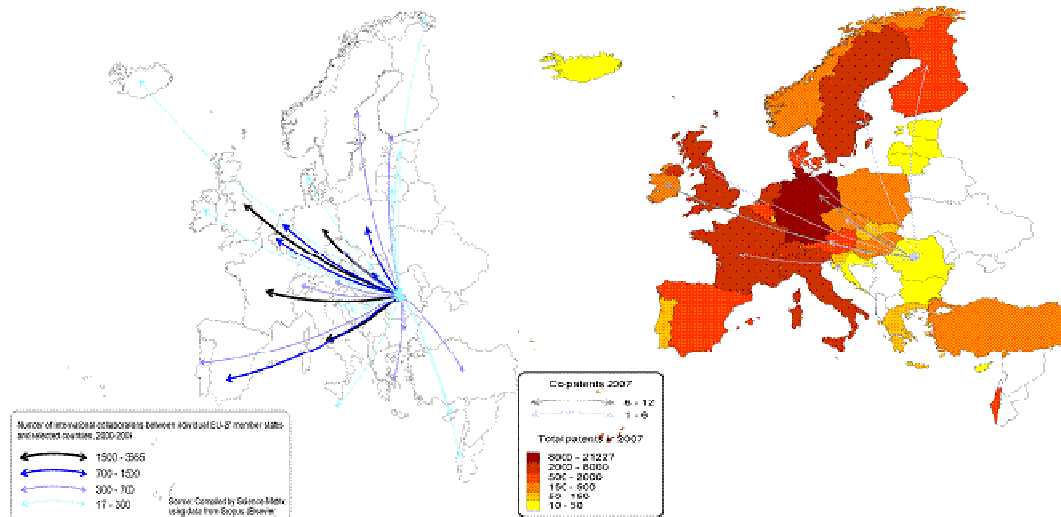
(7) Elements of estimation were involved in the compilation of the data.

Participation in the European Research Area: Scientific and Technological collaborations

As indicated above, the rate of overall number of co-publications between Romanian researchers and colleagues from other European countries is one of the lowest in Europe. This suggests that the country does not sufficiently benefit from the international knowledge flows favoured by the European Research Area architecture. However, the scientific and technological cooperation is well distributed across Europe. Main partners in terms of co-publications are France, Germany, Italy, the United Kingdom, and Spain. As regards co-patenting, Germany and Ireland appear to be among the main partners of Romanian technological actors.

Co-publications between Romania and European countries in 2000-2009

Co-invented patent applications between Romania and European countries, 2007



Source: DG Research and Innovation
Data: Scopus/ Science Metrix and Eurostat

FP7 Key facts and figures

Applications:

As of 2011/03/16, a total of

- 3.163 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 4.172 applicants from Romania (1,57% of EU-27*) and
- requesting EUR 916,01m of EC contribution (1,04% of EU-27*)

Among the EU-27* Romania (RO) ranks:

- 16th in terms of number of applicants and
- 17th in terms of requested EC contribution

Success rates:

- The RO applicant success rate of 14,5% is lower than the EU-27* applicant success rate of 21,6%.
- The RO EC financial contribution success rate of 9,1% is lower than the EU-27* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 494 proposals were retained for funding (15,6%)
- involving 606 (14,5%) successful applicants from Romania and
- requesting EUR 83,28m (9,1%) of EC financial contribution

Among the EU-27*, Romania (RO) ranks:

- 27th in terms of applicants success rate and
- 27th in terms of EC financial contribution success rate

Signed grant agreements

As of 2011/03/16, Romania (RO) participates in

- 429 signed grant agreements
- involving 6.753 participants of which 538 (7,97%) are from Romania
- benefiting from a total of EUR 1.635,88m of EC financial contribution of which EUR 72,35m (4,42%) is dedicated to participants from Romania.

Among the EU-27* in all FP7 signed grant agreements, Romania (RO) ranks:

- 18th in number of participations and
- 19th in budget share

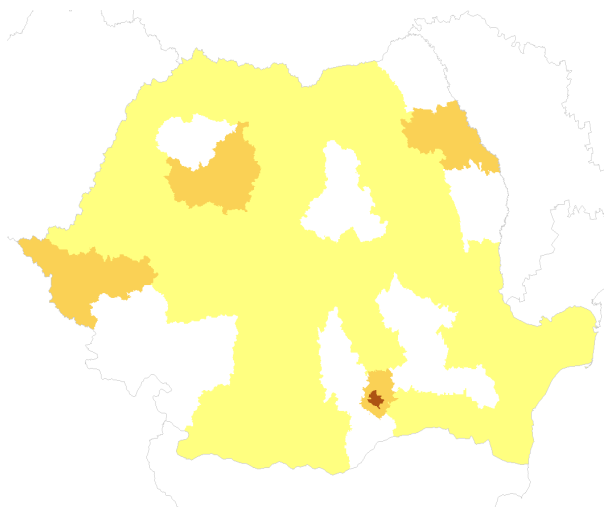
SME performance and participation

- The RO SME applicant success rate of 13,79% is lower than the EU-27* SME applicant success rate of 19,33%.
- The RO SME EC financial contribution success rate of 8,35% is lower than the corresponding EU-27* rate of 18,26%.

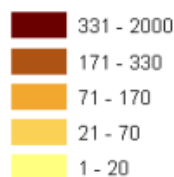
Specifically,

- 1.487 RO SME applicants requesting EUR 299,16m

| | | |
|--|-----------|-------|
| **Nr. of Researchers as % of population | N/A | 0,40% |
| Rank in EU-27* Innovation scoreboard (2008) | - 25th | |
| - Below EU-27 average | | |
| - Catching-up Country | | |
| Nr. of FP7 applicants (% EU-27*) | 4.172 | |
| (1,57%) | 266.507 | |
| Req. EC contribution by FP7 applicants in EUR million (% EU-27*) | 916,01 | |
| (1,04%) | 88.295 | |
| Nr. of successful FP7 applicants (% EU-27*) | 606 | |
| (1,02%) | 59.199 | |
| Req. EC contribution by successful FP7 applicants in EUR million (% EU-27*) | 83,28 | |
| (0,46%) | 18.262,02 | |
| Success rate FP7 applicants | 14,5% | 21,6% |
| Success rate | | |
| FP7 EC contribution | 9,1% | 20,7% |
| Nr. of FP7 grant holders (% EU-27*) | 538 | |
| (1,05%) | 51.279 | |
| EC contribution to FP7 grant holders in EUR million (% EU-27*) | 72,35 | |
| (0,44%) | 16.578,15 | |
| Nr. of FP7 coordinators (% of grant holders) | 32 | |
| (5,95%) | 9.383 | |
| (18,30%) | | |
| Nr. of FP7 SME grant holders (% grant holders) | 115 | |
| (21,38%) | 8.845 | |
| (17,25%) | | |
| EC contribution to FP7 SME grant holders in EUR million (% of grant holders) | 15,65 | |
| (21,63%) | 2.207,73 | |
| (13,32%) | | |



- 205 (13,79%) successful SMEs requesting EUR 24,99m (8,35%)



In signed grant agreements, as of 2011/03/16,

- 115 RO SME grant holders, i.e., 21,38% of total RO participation
- EUR 15,65m, i.e., 21,63% of total RO budget share

Top 3 collaborative links with:

- DE - Germany (702)
- IT - Italy (574)
- FR - France (557)

| RO - Romania - most active FP7 research priority areas by number of applicants applying for the research projects | | | | | | |
|---|-------------------|--|------------------------------|---------------------------|---|--|
| FP7 priority area | Nr. of applicants | Requested EC contribution by applicants (M euro) | Nr. of mainlisted applicants | Success Rate (applicants) | Requested EC contribution by mainlisted applicants (M euro) | Success Rate (requested EC contribution) |
| Information and Communication Technologies | 820 | 176,93 | 67 | 8,17 % | 14,37 | 8,12 % |
| Research for the benefit of SMEs | 419 | 49,25 | 59 | 14,08 % | 8,46 | 17,19 % |
| Environment (including Climate Change) | 352 | 62,26 | 56 | 15,91 % | 6,78 | 10,89 % |
| Transport (including Aeronautics) | 322 | 72,78 | 58 | 18,01 % | 10,21 | 14,03 % |
| Socio-economic sciences and Humanities | 280 | 35,39 | 16 | 5,71 % | 1,20 | 3,40 % |
| Marie-Curie Actions | 274 | n/a | 53 | 19,34 % | n/a | n/a |

| RO - Romania - most active FP7 research priority areas by EC contribution granted to the research projects | | | | |
|--|-------------------------|---------------------------|-------------------------------|----------------------------------|
| FP7 Priority Area | Number of grant holders | % of all RO grant holders | EC contribution (EUR million) | % of total EC contribution to RO |
| Information and Communication Technologies | 67 | 12,45% | 12,97 | 17,92 % |
| Transport (including Aeronautics) | 49 | 9,11% | 8,72 | 12,06 % |
| Research Potential | 9 | 1,67% | 8,69 | 12,01 % |
| Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP | 45 | 8,36% | 7,54 | 10,43 % |
| Environment (including Climate Change) | 47 | 8,74% | 5,79 | 8,01 % |
| Research for the benefit of SMEs | 45 | 8,36% | 5,13 | 7,09 % |

| RO - Romania - participation in the FP7 research projects by organisation activity type | | | | | | | | | |
|---|-------------------|--|------------------------------|---------------------------|---|---------------------------------------|----------------------|----------------------------------|---|
| Activity Type | Nr. of applicants | Requested EC contribution by applicants (M euro) | Nr. of mainlisted applicants | Success rate (applicants) | Requested EC contribution by mainlisted applicants (M euro) | Success rate (requested contribution) | Nr. of grant holders | EC contribution to grant holders | % of total EC contribution to grant holders |
| HES | 1.487 | 283,97 | 185 | 12,44% | 26,04 | 9,17% | 155 | 23,14 | 31,99% |
| PRC | 991 | 174,97 | 138 | 13,93% | 18,50 | 10,58% | 139 | 19,14 | 26,46% |
| REC | 710 | 150,19 | 132 | 18,59% | 18,42 | 12,27% | 149 | 21,98 | 30,38% |
| OTH | 527 | 110,23 | 76 | 14,42% | 10,03 | 9,10% | 15 | 0,86 | 1,19% |
| PUB | 295 | 42,03 | 73 | 24,75% | 9,35 | 22,23% | 80 | 7,22 | 9,98% |
| SME | 1.487 | 299,16 | 205 | 13,79% | 24,99 | 8,35% | 115 | 15,65 | 21,63% |

HES - Higher or secondary education, PRC - Private for profit (excl. education), REC - Research organisations, OTH - Others, PUB - Public body (excl. research and education),

| RO - Romania - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects | | | | |
|---|-------------------------|-------------------------------------|--------------------------|----------------------------------|
| RO - Romania region | Number of grant holders | % of all RO - Romania grant holders | EC contribution (M euro) | % of total EC contribution to RO |
| Bucuresti (RO321) | 262 | 48,70% | 32,79 | 45,32% |
| Cluj (RO113) | 51 | 9,48% | 6,80 | 9,40% |
| Ilfov (RO322) | 39 | 7,25% | 5,24 | 7,25% |
| Iasi (RO213) | 36 | 6,69% | 6,96 | 9,62% |
| Timis (RO424) | 26 | 4,83% | 3,56 | 4,93% |

| RO - Romania - most active organisations in terms of EC contribution granted to the FP7 research projects | | | | |
|---|--------------------------|---------------------------|--------------------------|--|
| Legal Name | Number of Participations | % of all RO grant holders | EC contribution (M euro) | % of total EC contribution to RO grant holders |
| UNIVERSITATEA POLITEHNICA DIN BUCURESTI (UPB) | 30 | 5,58% | 6,93 | 9,58% |
| INSTITUTUL DE CHIMIE MACROMOLECULARA PETRU PONI (ICMPP) | 7 | 1,30% | 3,54 | 4,89% |
| UNIVERSITATEA TEHNICA CLUJ-NAPOCA (UTC) | 16 | 2,97% | 2,77 | 3,82% |
| Primaria Municipiului Iasi (Iasi) | 1 | 0,19% | 2,38 | 3,29% |
| INSTITUTUL NATIONAL DE CERCETAREDEZVOLTARE PENTRU MICROTEHNOLOGIE (IMT) | 6 | 1,12% | 1,98 | 2,73% |

NOTES:

Report generated on: 2011/03/28,10:49 AM

FP7 proposal and application figures are valid as of the 2011/03/16

FP7 grant agreements and participation figures are valid as of the 2011/03/16

*EU-27 includes the 27 country-members and JRC as a separate entity

**E-STAT Reference year: 2007

**European Innovation Scoreboard is available at the website of [DG Enterprise and Industry](#)