



Ministry of Education and Science
of the Russian Federation



Federal State
Statistics Service



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

Science and Technology Indicators in the Russian Federation

Data Book



Institute for Statistical
Studies and Economics
of Knowledge, HSE



Ministry of Education and Science
of the Russian Federation



Federal State
Statistics Service



HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY



Science and Technology Indicators in the Russian Federation

Data Book

Moscow 2017

Editorial Board:

Leonid Gokhberg, Yaroslav Kuzminov, Konstantin Laykam, and Sergey Matveev

Authors:

Yury Voynilov, Natalia Gorodnikova, Leonid Gokhberg, Kirill Ditkovskiy, Maxim Kotsemir, Irina Kuznetsova, Evgeniya Lukinova, Svetlana Martynova, Tatyana Ratay, Larisa Rosovetskaya, Galina Sagieva, Ekaterina Streltsova, Anton Suslov, Svetlana Fridlyanova, and Konstantin Fursov

With contributions by Irina Varzanovtseva and Irina Tarasenko

Science and Technology Indicators in the Russian Federation : Data Book / Y. Voynilov, N. Gorodnikova, L. Gokhberg et al.; National Research University Higher School of Economics. – Moscow: HSE, 2017. – 304 p.

The present data book is another one in the series of publications, dedicated to different aspects of scientific development in the Russian Federation. It begins with tables, where together with the main science and technology indicators there are data concerning the main innovative activities. The publication presents statistics on R&D organisations, R&D personnel and funding as well as its material and technical facilities. In some sections you may find information about intellectual property, technology commercialisation and usage, international comparisons data.

The data book includes the information of the Federal State Statistics Service, the Ministry of Education and Science of the Russian Federation, the Federal Service for Intellectual Property, the CIS Interstate Statistical Committee, the Organisation for Economic Co-operation and Development (OECD), the European Commission, Eurostat, UNESCO, the World Intellectual Property Organisation, as well as results of methodological and analytical studies conducted by HSE Institute for Statistical Studies and Economics of Knowledge.

In some cases the data amends the information published before.

The publication was prepared within the framework of the Basic Research Programme at the National Research University Higher School of Economics (HSE) and supported within the framework of a subsidy by the Russian Academic Excellence Project '5-100'.

© National Research University Higher School of Economics, 2017
Reference is mandatory in case of reproduction

CONTENTS

Main science and technology indicators	15	2.5. Percentage distribution of R&D personnel by legal structure and status of institutions: 2015	36
Main indicators of innovation.....	19	2.6. R&D personnel by type of economic activity	37
1. Institutions	23	2.7. R&D personnel by educational attainment.....	38
1.1. R&D institutions by type	24	2.8. Researchers by gender and age.....	39
1.2. Trends in the total number of R&D institutions.....	25	2.9. Percentage distribution of researchers by age	41
1.3. Percentage distribution of R&D institutions by type	26	2.10. Average age of researchers	42
1.4. R&D institutions by ownership	27	2.11. Researchers with academic degrees.....	43
1.5. Percentage distribution of R&D institutions by legal structure and status: 2015	29	2.12. Researchers with academic degrees as a percentage of the total number of researchers	43
1.6. R&D institutions by type of economic activity.....	30	2.13. Researchers by field of science and technology	44
2. R&D Personnel	31	2.14. Percentage distribution of researchers by field of science and technology: 2015	44
2.1. R&D personnel	32	2.15. Flows of R&D personnel.....	45
2.2. R&D personnel by occupation	32	2.16. Hiring (inflow) of higher education institutions graduates by R&D institutions.....	46
2.3. Percentage distribution of R&D personnel by occupation	33	2.17. Trends inflow and outflow of R&D personnel	47
2.4. R&D personnel by ownership of R&D institutions	34		

Academic and Scientific Personnel

Postgraduate Education.....	48
2.18. Main indicators of postgraduate studies activities	48
2.19. Admission of higher education institutions graduates of the reference year to postgraduate studies by form of study	51
2.20. Higher education institutions graduates of the reference year as a percentage of the total number of postgraduate students	52
2.21. Postgraduate students by gender and age: 2015	53
2.22. Postgraduate studies enrollment and entrants by field of studies (major): 2015.....	54
2.23. Postgraduate students by field of science and technology	56
2.24. Main indicators of doctoral studies efficiency	57
2.25. Doctoral students by gender and age: 2015	60
2.26. Number of doctoral students, enrollment and completion of studies by field of science and technology	61
2.27. Graduates who defended their postgraduate and doctoral thesis during their studies as a percentage of all the graduates who completed their postgraduate and doctoral studies by field of science and technology: 2015	62

3. R&D Funding..... 63

3.1. Gross domestic expenditure on R&D	64
3.2. Trends in gross domestic expenditure on R&D	65
3.3. Government budget appropriations on civil S&T at current prices	66
3.4. Government budget appropriations on civil S&T at constant 1991 prices	67
3.5. Government budget appropriations on civil S&T as a percentage of gross domestic product	68
3.6. Government budget appropriations on civil S&T as a percentage of federal budget expenditure	69
3.7. Percentage distribution of government budget appropriations on civil S&T by section of budget expenditure classification and type of activity	70
3.8. Gross domestic expenditure on R&D by source of funds.....	71
3.9. Trends in gross domestic expenditure on R&D by source of funds.....	73
3.10. Grants, subsidies and competitive R&D financing: 2015.....	74
3.11. Gross domestic expenditure on R&D financed from abroad	74
3.12. R&D funding by sector of performance: 2015	75

3.13. Gross domestic expenditure on R&D by form of ownership of institutions.....	76
3.14. Percentage distribution of gross domestic expenditure on R&D by legal structure and status of institutions: 2015	78
3.15. Gross domestic expenditure on R&D by type of economic activity.....	79
3.16. Gross domestic expenditure on R&D by type of costs	81
3.17. Gross domestic expenditure on R&D by S&T priority area and source of funds: 2015	83
3.18. Percentage distribution of gross domestic expenditure on R&D by S&T priority area and source of funds: 2015	84
3.19. Gross domestic expenditure on R&D by socio-economic objective.....	85
3.20. Percentage distribution of gross domestic expenditure on R&D by socio-economic objective.....	87
3.21. Intramural current expenditure on R&D by type of activity and field of science and technology	88
3.22. Percentage distribution of intramural current expenditure on R&D by type of activity.....	90
3.23. Intramural current expenditure on R&D by type of activity as a percentage of gross domestic product.....	91
3.24. Average monthly salary of R&D personnel.....	92

4. R&D Fixed Assets..... 93

4.1. R&D fixed assets	94
4.2. Trends in R&D fixed assets value	96
4.3. Machinery and equipment as a percentage of the total R&D fixed assets value.....	96
4.4. R&D fixed assets by ownership of institutions	97
4.5. Percentage distribution of R&D fixed assets by ownership of institutions	99
4.6. R&D fixed assets by type of economic activity.....	100

5. Sectors of R&D Performance.....101

5.1. Composite Indices	102
5.1.1. R&D institutions by sector of performance	102
5.1.2. Percentage distribution of R&D institutions by sector of performance.....	103
5.1.3. R&D personnel by sector of performance and occupation	104
5.1.4. R&D personnel by sector of performance and educational attainment	105
5.1.5. Researchers with academic degrees by sector of performance.....	106
5.1.6. Percentage distribution of researchers with academic degrees by sector of performance	107

5.1.7. Researchers assigned to work (undertake an internship) at foreign research institutions by sector of performance: 2015	108	5.1.16. Sources of funds for gross domestic expenditure on R&D by S&T priority area and sector of performance: 2015	117
5.1.8. Percentage distribution of researchers assigned to work (undertake an internship) in foreign research institutions by sector of performance: 2015	108	5.1.17. Percentage distribution of gross domestic expenditure on R&D by S&T priority area and source of funds: 2015	118
5.1.9. Gross domestic expenditure on R&D by sector of performance.....	109	5.1.18. Gross domestic expenditure on R&D by sector of performance and socio-economic objective.....	119
5.1.10. Percentage distribution of gross domestic expenditure on R&D by sector of performance.....	110	5.1.19. Percentage distribution of gross domestic expenditure on R&D by sector of performance and socio-economic objective: 2015	121
5.1.11. Gross domestic expenditure on R&D by sector of performance as a percentage of gross domestic product.....	111	5.1.20. Intramural current expenditure on R&D by sector of performance and type of activity	123
5.1.12. Gross domestic expenditure on R&D by sector of performance and source of funds	112	5.1.21. Average monthly salary of R&D personnel by sector of performance.....	124
5.1.13. Gross domestic expenditure on R&D funded with grants, subsidies and competitive R&D financing: 2015	114	5.2. Government Sector	125
5.1.14. Gross domestic expenditure on R&D by S&T priority area and sector of performance: 2015	115	5.2.1. R&D institutions in the government sector by type	125
5.1.15. Percentage distribution of gross domestic expenditure on R&D by S&T priority area and sector of performance: 2015	116	5.2.2. R&D personnel in the government sector by type of institutions	125
		5.2.3. R&D personnel in the government sector by occupation	126

5.2.4. Percentage distribution of R&D personnel in the government sector by occupation	126
5.2.5. Government sector R&D personnel as a percentage of the total number of R&D personnel by occupation	127
5.2.6. Government sector R&D personnel by educational attainment	128
5.2.7. Researchers in the government sector by gender and age.....	130
5.2.8. Percentage distribution of researchers in the government sector by age.....	131
5.2.9. Average age of researchers in the government sector	132
5.2.10. Researchers with academic degrees in the government sector	132
5.2.11. Researchers with academic degrees as a percentage of the total number of researchers in the government sector.....	133
5.2.12. Researchers in the government sector by field of science and technology	134
5.2.13. R&D personnel turnover in the government sector by occupation	135
5.2.14. Hiring (inflow) and departure (outflow) of R&D personnel in the government sector	136

5.2.15. Hiring of higher education graduates (inflow) by institutions in the government sector	137
5.2.16. Gross domestic expenditure on R&D in the government sector by type of institutions.....	138
5.2.17. Gross domestic expenditure on R&D in the government sector	139
5.2.18. Gross domestic expenditure on R&D in the government sector by source of funds.....	140
5.2.19. Government sector expenditure on R&D as a percentage of the total gross domestic expenditure on R&D by type of expenditure	142
5.2.20. Gross domestic expenditure on R&D in the government sector by type of expenditure	143
5.2.21. Intramural current expenditure on R&D in the public sector by type of activity and field of science and technology	144
5.2.22. Government sector intramural current expenditure on R&D as a percentage of the total intramural current expenditure on R&D by type of activity	145

5.2.23. Percentage distribution of intramural current expenditure on R&D in the government sector by type of activity.....	146	5.3.9. Average age of researchers in the business enterprise sector.....	156
5.2.24. Average monthly salary of R&D personnel in the government sector	147	5.3.10. Researchers with academic degrees in the business enterprise sector	157
5.3. Business enterprise sector	148	5.3.11. Researchers with academic degrees as a percentage of the total number of researchers in the business enterprise sector.....	157
5.3.1. R&D institutions in the business enterprise sector by type	148	5.3.12. Researchers in the business enterprise sector by field of science and technology	158
5.3.2. R&D personnel in the business enterprise sector by type of institutions	149	5.3.13. R&D personnel turnover in the business enterprise sector by occupation.....	159
5.3.3. R&D personnel in the business enterprise sector by occupation	149	5.3.14. Hiring (inflow) and departure (outflow) of R&D personnel in the business enterprise sector.....	160
5.3.4. Percentage distribution of R&D personnel in the business enterprise sector by occupation	150	5.3.15. Hiring of higher education graduates (inflow) by institutions in the business enterprise sector.....	161
5.3.5. Business enterprise sector R&D personnel as a percentage of the total number of R&D personnel by occupation	151	5.3.16. Gross domestic expenditure on R&D in the business enterprise sector by type of institutions	162
5.3.6. Business enterprise sector R&D personnel by educational attainment	152	5.3.17. Gross domestic expenditure on R&D in the business enterprise sector	163
5.3.7. Researchers in the business enterprise sector by gender and age.....	154	5.3.18. Gross domestic expenditure on R&D in the business enterprise sector by source of funds	164
5.3.8. Percentage distribution of researchers in the business enterprise sector by age.....	155		

5.3.19. Business enterprise sector gross domestic expenditure on R&D as a percentage of the total gross domestic expenditure on R&D by type of expenditure	166
5.3.20. Gross domestic expenditure on R&D in the business enterprise sector by type of expenditure	167
5.3.21. Intramural current expenditure on R&D in the business enterprise sector by type of activity and field of science and technology	168
5.3.22. Business sector expenditure on R&D as a percentage of the total intramural current expenditure on R&D by type of activity.....	169
5.3.23. Percentage distribution of intramural current expenditure on R&D in the business enterprise sector by type of activity.....	170
5.3.24. Average monthly salary of R&D personnel in the business enterprise sector	171
5.4. Higher education sector	172
5.4.1. R&D institutions in the higher education sector by type	172
5.4.2. R&D personnel in the higher education sector by type of institutions	173
5.4.3. R&D personnel in the higher education sector by occupation	174
5.4.4. Percentage distribution of R&D personnel in the higher education sector by occupation	175

5.4.5. Higher education sector R&D personnel as a percentage of the total number of R&D personnel by occupation	176
5.4.6. R&D personnel in the higher education sector by educational attainment	177
5.4.7. Researchers in the higher education sector by gender and age.....	179
5.4.8. Percentage distribution of researchers in the higher education sector by age.....	180
5.4.9. Average age of researchers in the higher education sector.....	181
5.4.10. Researchers with academic degrees in the higher education sector	181
5.4.11. Researchers with academic degrees as a percentage of the total number of researchers in the higher education sector	182
5.4.12. Researchers in the higher education sector by field of science and technology	183
5.4.13. R&D personnel turnover in the higher education sector by occupation	184
5.4.14. Hiring (inflow) and departure (outflow) of R&D personnel in the higher education sector	185
5.4.15. Hiring of higher education graduates (inflow) by institutions in the higher education sector.....	186

5.4.16. Gross domestic expenditure on R&D in the higher education sector by type of institutions.....	187
5.4.17. Gross domestic expenditure on R&D in the higher education sector	188
5.4.18. Gross domestic expenditure on R&D in the higher education sector by source of funds.....	189
5.4.19. Higher education sector gross domestic expenditure on R&D as a percentage of the total gross domestic expenditure on R&D by type of expenditure	191
5.4.20. Gross domestic expenditure on R&D in the higher education sector by type of expenditure	192
5.4.21. Intramural current expenditure on R&D in the higher education sector by type of activity and field of science and technology	193
5.4.22. Higher education sector expenditure on R&D as a percentage of the total intramural current expenditure on R&D by type of activity	195
5.4.23. Percentage distribution of intramural current expenditure on R&D in the higher education sector by type of activity.....	196
5.4.24. Average monthly salary of R&D personnel in the higher education sector	196

6. R&D output.....197

6.1. Publications by Russian authors in scientific journals indexed in Scopus by document type	198
6.2. Publications by Russian authors in scientific journals indexed in Web of Science by document type	198
6.3. Publications by Russian authors in scientific journals indexed in Scopus	199
6.4. Publications by Russian authors in scientific journals indexed in Web of Science	200
6.5. Articles by Russian authors in scientific journals indexed in Scopus	201
6.6. Articles by Russian authors in scientific journals indexed in Web of Science	202
6.7. Percentage distribution of publications by Russian authors in scientific journals indexed in Scopus by field of science and technology	203
6.8. Percentage distribution of publications by Russian authors in scientific journals indexed in Web of Science by field of science and technology	204
6.9. Russia's scientific specialisation indices by publication in scientific journals indexed in Scopus by field of science and technology	205

6.10. Russia's scientific specialisation indices (revealed comparative advantage) by publication in scientific journals indexed in Web of Science by field of science and technology	207
6.11. Patent applications and patents for an invention granted	209
6.12. Indicators of patent activity	210
6.13. Patents granted in the Russian Federation by section of the international patent classification	211
6.14. Percentage distribution of patents granted in the Russian Federation by assignee and section of the international patent classification: 2015	212
6.15. Utility model patent applications and patents granted	213
6.16. Utility model patents granted in the Russian Federation by section of the international patent classification	214
6.17. Registration of intellectual property items in the field of information technology	215
6.18. Registration of internal licence trade agreements and patent assignment contracts	216

6.19. Registration of internal licence trade agreements and patent assignment contracts by technology field	217
6.20. Percentage distribution of internal licence trade agreements and patent assignment contracts by technology field	218
6.21. Percentage distribution of internal licence trade agreements and patent assignment contracts by category of economic entity	219
6.22. Technology balance of payments by category of contracts	220
6.23. Percentage distribution of technology export and import by category of contracts	222
6.24. Technology balance of payments by country	223
6.25. Percentage distribution of technology export and import by country group	226
6.26. Technology balance of payments by sector of performance	227
6.27. Technology balance of payments by type of economic activity	228
6.28. Development of advanced manufacturing technology by type	230
6.29. Development of advanced manufacturing technology by degree of novelty and type	231

6.30. Development of advanced manufacturing technology by degree of novelty and type of economic activity.....	232
6.31. Use of advanced manufacturing technology by type	233
6.32. Use of advanced manufacturing technology by type and duration	234
6.33. Use of advanced manufacturing technology by type of economic activity and duration.....	235
6.34. Use of advanced manufacturing technology by type and source of acquisition: 2015	236
6.35. Use of advanced manufacturing technology by type of economic activity and source of acquisition: 2015	237
6.36. Use of advanced manufacturing technology developed on the basis of invention patents by type	238

7. Attitudes and Public Opinion Regarding Science and Technology.....239

7.1. Russian population's concerns about different social issues: 2015	240
7.2. Russian public opinion regarding the role of science and technology in society	241

7.3. Russian public opinion concerning the impact of scientific and technological advancements on the living standards and the health of people and on the environmental conditions	243
7.4. Russian public opinion regarding the impact of scientific and technological advancements on different spheres of life: 2015.....	246
7.5. Russian public opinion about purchasing and use of modern gadgets (appliances, equipment) in everyday life: 2015	250

8. International comparisons.....251

8.1. Gross domestic expenditure on R&D	252
8.2. Gross domestic expenditure on R&D as a percentage of gross domestic product: 2015.....	255
8.3. Percentage distribution of gross domestic expenditure on R&D by sector of performance: 2015	256
8.4. Percentage distribution of gross domestic expenditure on R&D by source of funds: 2015.....	259
8.5. Percentage distribution of gross domestic expenditure on R&D by field of science and technology: 2015.....	262

8.6. Percentage distribution of intramural current expenditure on R&D by type of activity: 2015	264
8.7. Government budget appropriations on R&D	267
8.8. R&D personnel: 2015	269
8.9. R&D personnel per 10 000 employment: 2015	272
8.10. Percentage distribution of researchers by sector of performance: 2015	273
8.11. Women researchers as a percentage of total researchers: 2015	276
8.12. Number of publications and citations in scientific journals indexed in Web of Science: 2011–2015	277
8.13. Number of publications and citations in scientific journals indexed in Scopus: 2011–2015	281
8.14. Country share in the world total number of publications in scientific journals indexed in Web of Science: 2015	285
8.15. Country share in the world total number of publications in scientific journals indexed in Scopus: 2015	286

8.16. Publications co-authored with foreign scientists as a percentage of the total number of country's publications in scientific journals indexed in Web of Science: 2015	287
8.17. Publications co-authored with foreign scientists as a percentage of the total number of country's publications in scientific journals indexed in Scopus: 2015	288
8.18. Patent applications for an invention filed with the patent office of the Russian Federation by Russian residents and non-residents	289
8.19. Percentage distribution of patent applications for an invention by applicant and country: 2015	292
8.20. Resident and abroad patent applications by country of origin	293
8.21. The number of triadic patent families	296
8.22. Technology balance of payments: 2015	298

Technical notes	299
------------------------------	------------

SYMBOLS USED IN TABLES ARE:

- ... data not available
and not included in the totals,
- data not applicable,
- 0.0 insignificant value.

In some tables, details may not add up
to the total because of rounding.

MAIN SCIENCE AND TECHNOLOGY INDICATORS

	1995	2000	2005	2008	2009	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D, <i>million roubles, 1995 – billion roubles:</i>											
at current prices	12149.5	76697.1	230785.2	431073.2	485834.3	523377.2	610426.7	699869.8	749797.6	847527.0	914669.1
at constant 1989 prices	2.49	3.32	4.55	5.49	6.07	5.72	5.76	6.10	6.23	6.57	6.59
Gross domestic expenditure on R&D: as a percentage of GDP	0.85	1.05	1.07	1.04	1.25	1.13	1.09	1.05	1.06	1.09	1.13
as a percentage of the previous year at constant 1989 prices	84.9	116.0	98.7	98.4	110.6	94.3	100.6	105.9	102.1	105.5	100.2
Gross domestic expenditure on R&D per one R&D institution, <i>thousand roubles,</i> <i>1995 – million roubles:</i>											
at current prices	2993.2	18711.2	64718.2	117586.8	137396.6	149878.9	165786.7	196261.9	207988.2	235162.9	219082.4

(continued)

	1995	2000	2005	2008	2009	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D per one R&D employee, <i>thousand roubles, 1995 – million roubles</i>	11.5	86.4	283.8	566.3	654.4	710.6	830.2	963.6	1031.3	1157.4	1238.0
Gross domestic expenditure on R&D per one researcher, <i>thousand roubles, 1995 – million roubles</i>	23.4	180.1	590.1	1147.1	1315.8	1418.7	1628.9	1878.2	2031.9	2266.7	2410.8
Government budget appropriations on civil S&T, <i>million roubles, 1995 – billion roubles:</i>											
at current prices	4413.6	17091.7	76909.0	162115.9	219053.4	237644.0	313899.3	355921.1	425301.7	437273.3	439392.8
at constant 1995 prices	2.48	2.03	4.16	5.66	7.50	7.13	8.12	8.51	9.70	9.30	8.68
Government budget appropriations on civil S&T as a percentage of GDP	0.31	0.23	0.36	0.39	0.56	0.51	0.56	0.53	0.60	0.56	0.54

(continued)

	1995	2000	2005	2008	2009	2010	2011	2012	2013	2014	2015
R&D personnel, <i>thousand</i>	1061.0	887.7	813.2	761.3	742.4	736.5	735.3	726.3	727.0	732.3	738.9
As a percentage of the previous year	95.9	101.8	96.9	95.0	97.5	99.2	99.8	98.8	100.1	100.7	100.9
R&D personnel per one R&D institution, <i>headcount</i>	261	217	228	208	210	211	200	204	202	203	177
R&D personnel per 10 000 employment, <i>headcount</i>	160	138	122	111	110	109	109	107	107	108	108
Researchers, <i>thousand</i>	518.7	426.0	391.1	375.8	369.2	368.9	374.7	372.6	369.0	373.9	379.4
As a percentage of the previous year	98.7	101.4	97.4	95.7	98.3	99.9	101.6	99.4	99.0	101.3	101.5

(continued)

	1995	2000	2005	2008	2009	2010	2011	2012	2013	2014	2015
Researchers per one R&D institution, <i>headcount</i>	128	104	110	103	104	106	102	104	102	104	91
Researchers per 10 000 employment, <i>headcount</i>	78	66	59	55	55	55	55	55	54	55	55
Patent applications filed in the Russian Federation	22202	28688	32254	41849	38564	42500	41414	44211	44914	40308	45517
Patents granted in the Russian Federation	31556*	17592	23390	28808	34824	30322	29999	32880	31638	33950	34706
Number advanced manufacturing technologies developed	...	688	637	854	897	864	1138	1323	1429	1409	1398
Number advanced manufacturing technologies in use	...	70069	140983	184568	201850	203330	191650	191372	193830	204546	218018
Total receipts from technology exports, <i>thousand US dollars</i>	...	203493.5	389396.4	833164.4	618184.5	627887.5	584656.9	688469.9	770584.8	1279213.1	1654732.1
Total technology import payments, <i>thousand US dollars</i>	...	182908.0	954199.2	2087067.4	1619031.6	1425983.3	1862566.6	2043187.9	2463626.3	2455830.7	2205429.3

* Taking into account patents granted in exchange for author's certificates.

MAIN INDICATORS OF INNOVATION

	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Enterprises engaged in innovative technological activity as a percentage of all enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	10.6	10.5	9.3	9.4	9.4	9.6	9.4	9.3	9.6	9.9	9.7	9.7	9.5
communication, computer and information technology-related activities*	12.1	14.7	15.3	12.5	11.2	10.9	10.1	10.8	9.9	10.3	10.3	9.5	9.4
Innovative goods and services as a percentage of total sales:													
mining and quarrying, manufacturing, electricity, gas and water supply	4.4	5.4	5.0	5.5	5.5	5.1	4.6	4.9	6.1	7.8	8.9	8.2	7.9
communication, computer and information technology-related activities	16.9	8.4	8.6	8.3	4.2	4.2	3.8	4.7	4.8	3.0	3.9	3.3	4.3
Expenditure on technological innovation, <i>million roubles</i> :													
mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	49428.0	122850.5	125678.2	188492.2	207499.2	276262.3	358861.1	349763.3	469442.2	583660.6	746778.2	762774.1	735757.7
at constant 1995 prices	10462.7	14116.7	12105.3	15760.0	15245.3	17201.2	21906.1	18695.9	21650.6	24855.3	30345.1	28913.3	25895.3
communications, computer and information technology-related activities:													
at current prices	11794.1	19495.3	17544.4	18892.4	25125.5	24148.0	32790.9	38684.0	137754.0	83230.6	66133.4	47066.3	66722.8
at constant 1995 prices	2496.5	2240.2	1689.9	1579.6	1846.0	1503.6	2001.7	2067.8	6353.2	3544.4	2687.3	1784.1	2348.3

(continued)

	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Expenditure on technological innovation as a percentage of total goods and services sales:													
mining and quarrying, manufacturing, electricity, gas and water supply	1.4	1.5	1.2	1.4	1.2	1.4	1.9	1.5	1.5	1.8	2.2	2.1	1.8
communication, computer and information technology-related activities	11.1	5.9	3.5	2.7	2.7	2.1	2.7	2.9	8.8	4.4	3.6	2.4	3.3
Overall level of innovative activity of enterprises (enterprises engaged in innovative technological, organisational or marketing activity), <i>per cent</i> :													
mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	10.6	10.8	11.0	11.0	10.8	11.1	11.1	10.9	10.9	10.6
communication, computer and information technology-related activities	...	...	...	15.6	13.5	13.4	13.2	13.6	12.1	11.7	12.2	10.7	10.8
Enterprises engaged in innovative marketing activity as a percentage of all enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	2.3	2.5	2.6	2.4	2.5	2.5	2.2	2.1	2.0	2.0
communication, computer and information technology-related activities	...	...	...	4.4	4.5	4.5	4.7	4.7	3.9	3.2	3.1	2.3	3.4

(continued)

	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Enterprises engaged in innovative organisational activity as a percentage of all enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	3.2	3.5	3.5	3.7	3.4	3.5	3.2	3.1	3.0	2.9
communication, computer and information technology-related activities	...	...	...	5.4	4.8	4.5	4.7	5.1	3.9	3.6	3.5	3.4	3.8
Expenditure on technological, marketing and organisational innovation, million roubles:													
mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	...	...	...	191341.5	213020.1	283194.8	365785.1	356163.5	474587.1	590341.6	756183.9	778263.5	741283.8
at constant 1995 prices	...	...	...	15998.2	15650.9	17632.9	22328.7	19038.0	21887.9	25139.9	30727.3	29500.5	26089.8
communication, computer and information technology-related activities:													
at current prices	...	...	...	20010.5	26405.2	27076.7	34821.9	40223.1	146419.4	86002.9	68115.1	48612.3	67749.9
at constant 1995 prices	...	...	...	1673.1	1940.0	1685.9	2125.6	2150.0	6752.9	3662.5	2767.8	1842.7	2384.5
Expenditure on technological, marketing and organisational innovation as a percentage of total sales:													
mining and quarrying, manufacturing, electricity, gas and water supply	...	...	...	1.5	1.3	1.4	1.9	1.5	1.6	1.8	2.2	2.1	1.8
communication, computer and information technology-related activities	...	...	...	2.7	2.8	2.3	2.8	3.0	9.4	8.6	3.7	2.5	3.4

(continued)

	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Small enterprises engaged in innovative technological activity as a percentage of all small enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	1.3	...	1.6	...	4.3	...	4.1	...	5.1	...	4.8	...	4.5
Innovative goods and services as a percentage of total sales of small enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	0.6	...	0.3	...	2.0	...	1.4	...	1.5	...	2.1	...	1.6
Expenditure on technological innovation in small enterprises, <i>million roubles</i> :													
mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	867.6	...	1932.7	...	10608.2	...	6793.5	...	9479.3	...	13510.5	...	12151.8
at constant 1995 prices	183.7	...	186.2	...	779.4	...	414.7	...	437.2	...	549.0	...	427.7
Expenditure on technological innovation as a percentage of total sales of small enterprises:													
mining and quarrying, manufacturing, electricity, gas and water supply	0.6	...	0.2	...	1.7	...	0.9	...	0.9	...	1.0	...	0.6

* Unlike other service sector firms the enterprises engaged in communication and computer and information technology-related activities were the focus of statistical monitoring in the sphere of service sector innovative activity during the entire period under review.



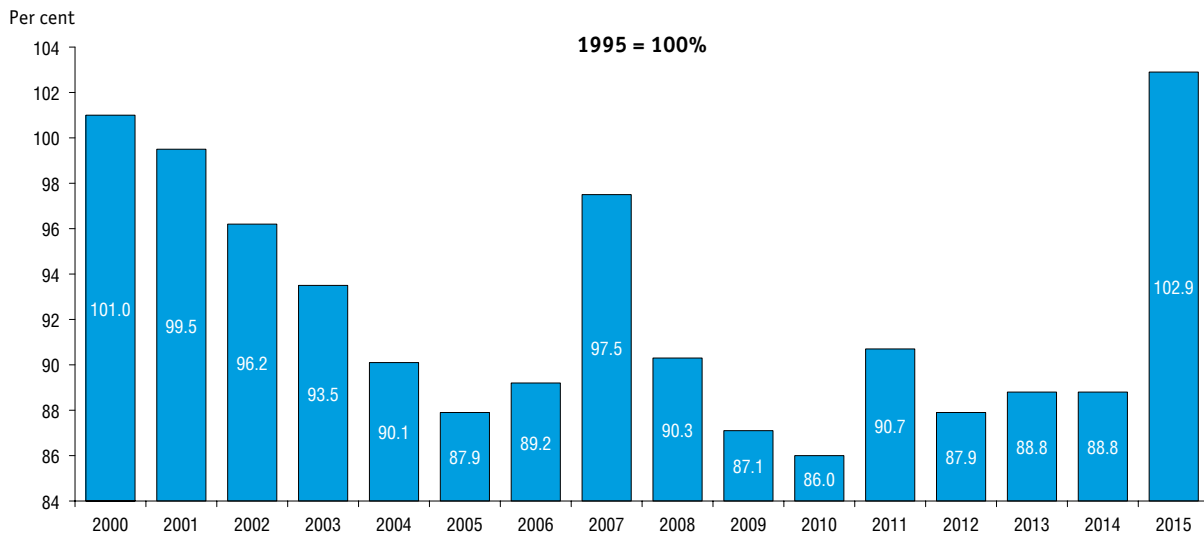
1. Institutions

1.1. R&D INSTITUTIONS BY TYPE

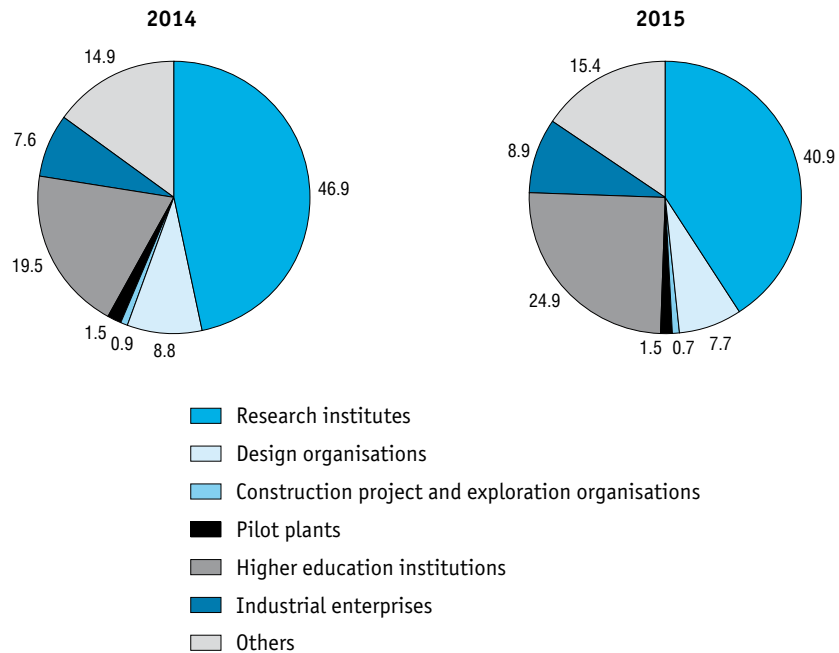
	1995	2000	2004	2005*	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*
Total	4059	4099	3656	3566	3957	3666	3536	3492	3682	3566	3605	3604	4175
Research institutes	2284	2686	2464	2115	2036	1926	1878	1840	1782	1744	1719	1689	1708
Design organisations	548	318	194	489	497	418	377	362	364	338	331	317	322
Construction project and exploration organisations	207	85	63	61	49	42	36	36	38	33	33	32	29
Pilot plants	23	33	31	30	60	58	57	47	49	60	53	53	61
Higher education institutions	395	390	402	406	500	503	506	517	581	562	673	702	1040
Industrial enterprises	325	284	244	231	265	239	228	238	280	274	266	275	371
Others	277	303	258	234	550	480	454	452	588	555	530	536	644

* In 2005, the R&D institutions classification by type was changed due to the abolition of the 'All-Russia Classifier of Economy Branches'.

1.2. TRENDS IN THE TOTAL NUMBER OF R&D INSTITUTIONS



1.3. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS BY TYPE



1.4. R&D INSTITUTIONS BY OWNERSHIP

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	4059	4099	3656	3566	3957	3666	3536	3492	3682	3566	3605	3604	4175
Russian ownership	4034	4035	3599	3513	3895	3613	3483	3436	3614	3506	3542	3538	4077
Public ownership	2979	2938*	2675	2632	2821	2716	2655	2610	2670	2561	2526	2520	2684
Federal	2783	2755	2524	2483	2650	2562	2503	2467	2493	2390	2363	2351	2494
Regional	196	181	151	149	166	148	146	140	176	170	163	169	190
Municipal ownership	9	11	7	6	13	13	14	14	18	14	14	13	15
Ownership of voluntary associations	16	60	25	27	36	30	26	28	27	25	27	28	43
Private ownership	198	388	420	422	638	508	475	470	532	545	607	614	881
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	1	1	1	...***	...***
Ownership of consumers' cooperatives**	...	3	4	4	3	2	3	4	4	2	2	...***	5
Mixed ownership	832	635	468	422	384	344	310	304	337	298	300	296	358
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	268	296	247	236	231	275
Other mixed ownership	...	...	...	...	...	...	...	...	41	51	64	65	83
Ownership of state corporations	...	...	...	...	...	...	...	6	25	60	65	64	90
Foreign ownership	1	6	6	7	11	13	14	16	21	16	16	17	36
Joint ownership (with both Russian and foreign participation)	24	58	51	46	51	40	39	40	47	44	47	49	62

(continued)

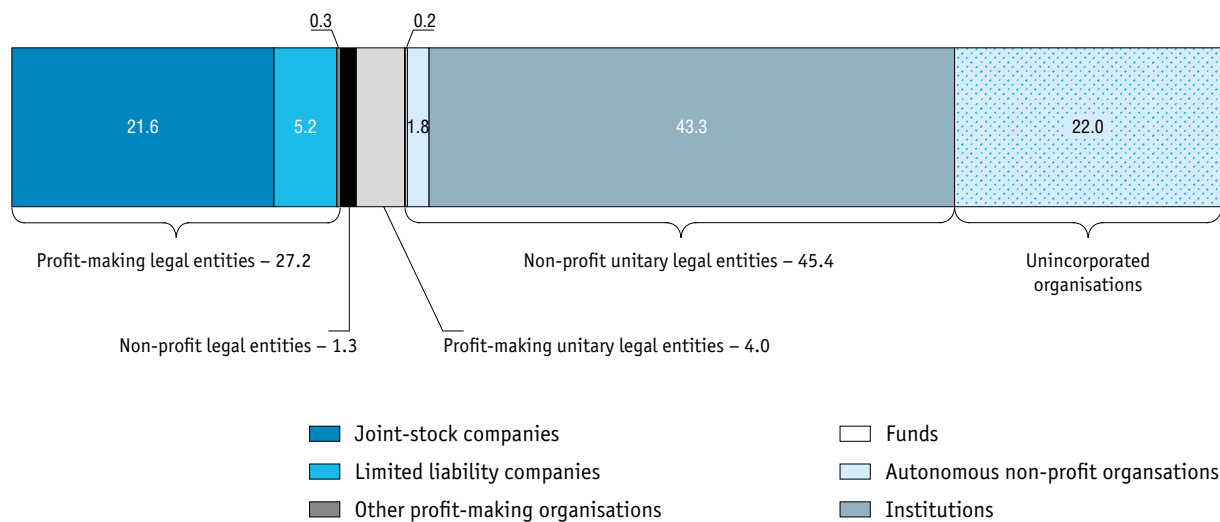
	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total, per cent	100	100	100	100	100	100	100	100	100	100	100	100	100
Russian ownership	99.4	98.4	98.4	98.5	98.4	98.6	98.5	98.4	98.2	98.3	98.3	98.2	97.7
Public ownership	73.4	71.7	73.2	73.8	71.3	74.1	75.1	74.7	72.5	71.8	70.1	69.9	64.3
Federal	68.6	67.2	69.0	69.6	67.0	69.9	70.8	70.6	67.7	67.0	65.5	65.2	59.7
Regional	4.8	4.4	4.1	4.2	4.2	4.0	4.1	4.0	4.8	4.8	4.5	4.7	4.6
Municipal ownership	0.2	0.3	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4
Ownership of voluntary associations	0.4	1.5	0.7	0.8	0.9	0.8	0.7	0.8	0.7	0.7	0.7	0.8	1.0
Private ownership	4.9	9.5	11.5	11.8	16.1	13.9	13.4	13.5	14.4	15.3	16.8	17.0	21.1
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	0.03	0.03	0.03	...***	...***
Ownership of consumers' cooperatives**	...	0.07	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.06	...***	0.1
Mixed ownership	20.5	15.5	12.8	11.8	9.7	9.4	8.8	8.7	9.2	8.4	8.3	8.2	8.6
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	7.7	8.0	6.9	6.5	6.4	6.6
Other mixed ownership	...	...	...	...	...	...	...	...	1.1	1.4	1.8	1.8	2.0
Ownership of state corporations	...	...	...	...	...	...	...	0.2	0.7	1.7	1.8	1.8	2.2
Foreign ownership	0.02	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.4	0.4	0.5	0.9
Joint ownership (with both Russian and foreign participation)	0.6	1.4	1.4	1.3	1.3	1.1	1.1	1.1	1.3	1.2	1.3	1.4	1.5

* The sum of items may differ from the total because some institutions have shared ownership.

** Up to the year 2000 it was included into private and mixed Russian ownership.

*** The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 82-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

1.5. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS BY LEGAL STRUCTURE AND STATUS: 2015



1.6. R&D INSTITUTIONS BY TYPE OF ECONOMIC ACTIVITY

	2005	2009	2010	2011	2012	2013	2014	2015
Total	3566	3536	3492	3682	3566	3605	3604	4175
Agriculture, hunting and forestry	24	39	35	34	31	31	30	35
Fishing, aquaculture and related services	1	1	1	–	–	–	–	–
Mining and quarrying	8	1	1	2	4	3	2	4
Manufacturing	241	268	276	317	323	314	320	456
Electricity, gas and water supply	–	1	1	1	1	1	1	5
Construction	–	–	–	–	1	1	1	...*
Hotels and restaurants	–	–	–	–	1	1	–	...*
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	–	–	–	2	–	–	–	...*
Transport and communications	1	3	3	4	7	4	4	4
Real estate, renting and business activities	2757	2517	2456	2526	2389	2344	2307	2321
Of which:								
research and development	2628	2395	2331	2398	2257	2213	2193	2175
other services	117	93	95	93	88	87	76	91
Education	428	541	549	620	632	732	768	1152
Of which higher education	425	532	543	611	619	716	752	1129
Health and social services	11	21	24	26	29	32	33	42
Other community, social and personal services	95	144	146	150	148	142	138	148
Of which recreational, cultural and sporting activities	90	137	140	143	139	135	132	139

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).



2. R&D Personnel

2.1. R&D PERSONNEL (headcount)

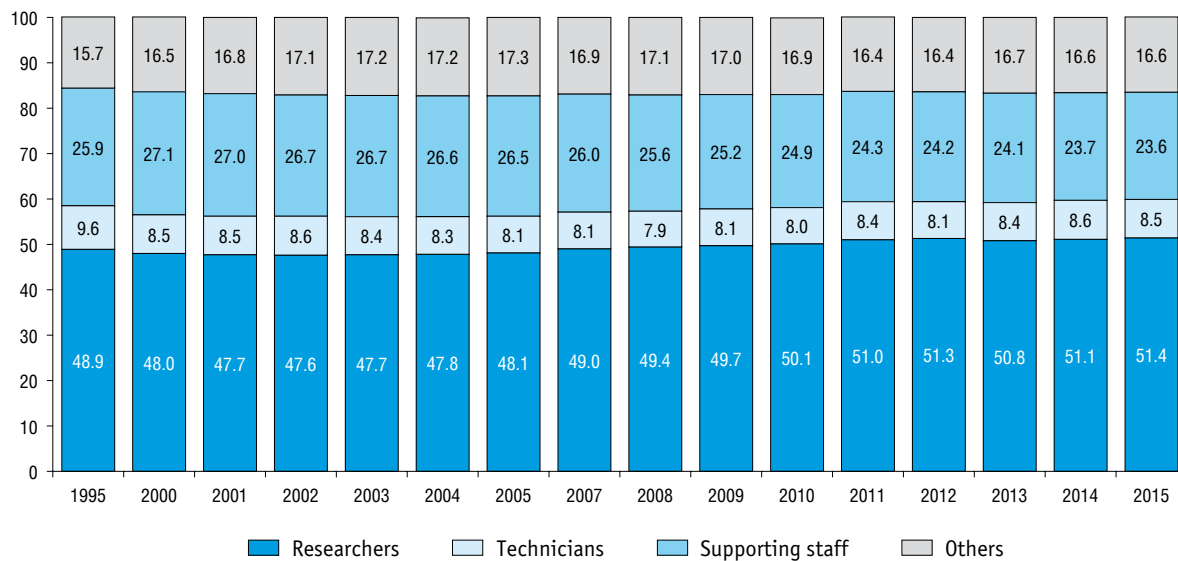
	1995	2000	2004	2005*	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*
Total	1061044	887729	839338	813207	801135	761252	742433	736540	735273	726318	727029	732274	738857
Scientific research institutes	753253	718434	700308	510523	474985	454938	443702	435304	420031	430677	434243	435129	435502
Design organisations	129689	56488	41713	184785	179862	167517	163764	157146	159620	138295	137098	139608	136263
Construction project and exploration organisations	20870	6811	6261	5443	8406	7446	6738	6324	6466	6772	4907	4776	2849
Pilot plants	13640	6145	4605	1232	3528	1544	1588	1558	1817	2330	2383	2653	3023
Higher education institutions	40015	31110	32105	33942	40440	40003	41767	46776	53944	53699	54092	58573	60151
Industrial enterprises	89030	54721	42192	43524	56759	52042	49042	51807	52004	52071	52232	49358	53868
Others	14547	14020	12154	33758	37155	37762	35832	37625	41391	42474	42074	42177	47201

* In 2005, the R&D institutions classification by type was changed due to the abolition of the 'All-Russia Classifier of Economy Branches'.

2.2. R&D PERSONNEL BY OCCUPATION (headcount)

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1061044	887729	839338	813207	801135	761252	742433	736540	735273	726318	727029	732274	738857
Researchers	518690	425954	401425	391121	392849	375804	369237	368915	374746	372620	369015	373905	379411
Technicians	101371	75184	69963	65982	64569	60218	60045	59276	61562	58905	61401	63168	62805
Supporting staff	274925	240506	223356	215555	208052	194769	186995	183713	178494	175790	175365	173554	174056
Others	166058	146085	144594	140549	135665	130461	126156	124636	120471	119003	121248	121647	122585

2.3. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY OCCUPATION



2.4. R&D PERSONNEL BY OWNERSHIP OF R&D INSTITUTIONS

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Headcount													
Total	1061044	887729	839338	813207	801135	761252	742433	736540	735273	726318	727029	732274	738857
Russian ownership	1060480	866386	822749	797394	785560	746412	734405	726234	723642	715691	710336	723101	729121
Public ownership	816799	673658*	646727	641310	622602	595458	585675	575035	559339	536212	518460	522994	485424
Federal	795299	657696	635449	629207	610145	584117	574697	564238	547922	525200	508083	508938	472548
Regional	21500	15957	11278	12103	11979	10861	10503	10450	11355	10947	10377	14056	12876
Municipal ownership	738	725	85	77	207	186	180	170	229	142	208	155	141
Ownership of voluntary associations	1036	1207	208	231	376	460	474	512	531	600	740	821	1010
Private ownership	26238	53408	62862	58480	79876	73509	69167	66906	74795	73260	77830	76920	85798
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	23	25	...***	...***	...***
Ownership of consumers' cooperatives**	...	16	27	27	10	10	253	268	308	2	...***	...***	20
Mixed ownership	215669	137372	112840	97269	82489	76789	78656	78464	78756	82862	87532	95863	124661
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	66574	65362	59406	67452	75024	90907
Other mixed ownership	...	...	...	...	...	...	...	...	13394	23456	20080	20839	33754
Ownership of state corporations	...	...	...	...	...	...	...	4879	9661	22588	25560	26324	32063
Foreign ownership	–	146	337	1145	835	699	553	1130	1358	1233	1955	2344	2898
Joint ownership (with both Russian and foreign participation)	564	21197	16252	14668	14740	14141	7475	9176	10273	9394	14738	6829	6838

(continued)

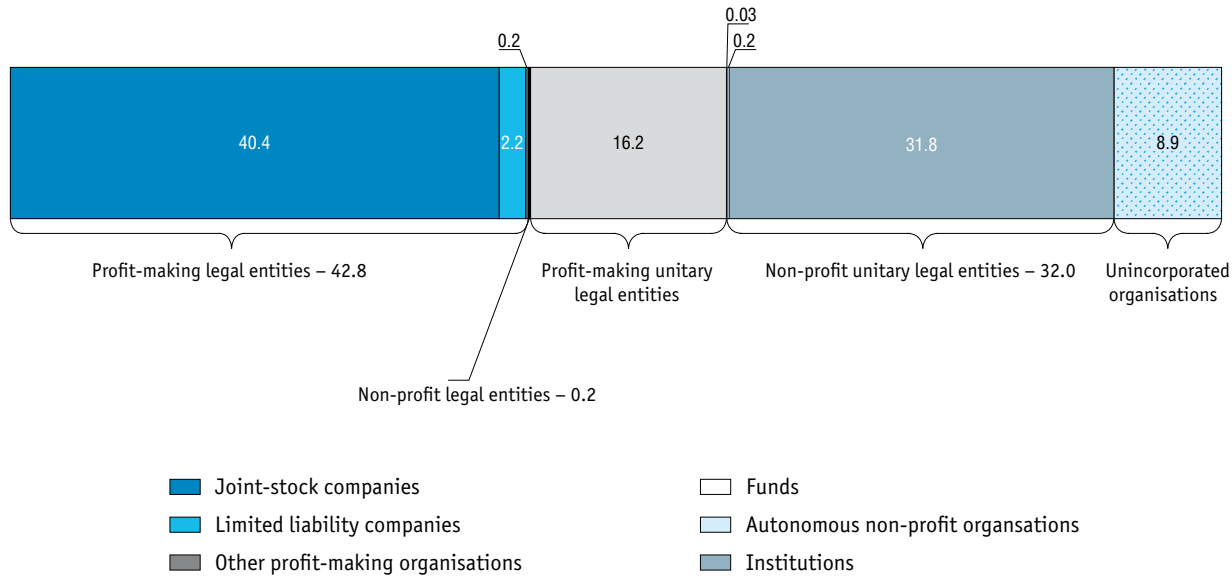
	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Per cent												
Total	100	100	100	100	100	100	100	100	100	100	100	100	100
Russian ownership	99.9	97.6	98.0	98.1	98.1	98.1	98.9	98.6	98.4	98.5	97.7	98.7	98.7
Public ownership	77.0	75.9	77.1	78.9	77.7	78.2	78.9	78.1	76.1	73.8	71.3	71.4	65.7
Federal	75.0	74.1	75.7	77.4	76.2	76.7	77.4	76.6	74.5	72.3	69.9	69.5	64.0
Regional	2.0	1.8	1.3	1.49	1.5	1.4	1.4	1.4	1.5	1.5	1.4	1.9	1.7
Municipal ownership	0.07	0.08	0.01	0.01	0.03	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02
Ownership of voluntary associations	0.1	0.1	0.02	0.028	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Private ownership	2.5	6.0	7.5	7.19	10.0	9.7	9.3	9.1	10.2	10.1	10.7	10.5	11.6
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	0.003	0.003	...***	...***	...***
Ownership of consumers' cooperatives**		0.002	0.003	0.003	0.001	0.001	0.03	0.04	0.04	0.0	...***	...***	0.003
Mixed ownership	20.3	15.5	13.4	11.96	10.3	10.1	10.6	10.7	10.7	11.4	12.0	13.1	16.9
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	9.0	8.9	8.2	9.3	10.2	12.3
Other mixed ownership	...	...	...	...	...	...	...	...	1.8	3.2	2.8	2.8	4.6
Ownership of state corporations	...	...	...	...	...	...	...	0.7	1.3	3.1	3.5	3.6	4.3
Foreign ownership	–	0.02	0.04	0.14	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
Joint ownership (with both Russian and foreign participation)	0.05	2.4	1.9	1.8	1.8	1.9	1.0	1.2	1.4	1.3	2.0	0.9	0.9

* The sum of items may differ from the total because some institutions have shared ownership.

** Up to the year 2000 it was included into private and mixed Russian ownership.

*** The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

2.5. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY LEGAL STRUCTURE AND STATUS OF INSTITUTIONS: 2015



2.6. R&D PERSONNEL BY TYPE OF ECONOMIC ACTIVITY

(headcount)

	R&D personnel			Researchers		
	2013	2014	2015	2013	2014	2015
Total	727029	732274	738857	369015	373905	379411
Agriculture, hunting and forestry	1141	1101	1054	357	350	296
Fishing, aquaculture and related services	—	—	—	—	—	—
Mining and quarrying	19	...*	73	16	...*	71
Manufacturing	43621	42758	80980	25031	25251	41085
Electricity, gas and water supply	—	...*	166	—	...*	120
Construction	...*	...*	...*	...*	...*	...*
Hotels and restaurants	...*	—	...*	...*	—	...*
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	—	—	...*	—	—	...*
Transport and communications	1006	1098	325	599	574	221
Real estate, renting and business activities	615419	618029	583084	297393	299881	286012
Of which:						
research and development	603911	607491	572632	290055	292849	278805
other services	7808	6608	6069	5082	4509	4135
Education	56142	60908	65065	40858	44001	47397
Of which higher education	55816	60587	64834	40584	43742	47220
Health and social services	3260	3147	3723	1764	1680	1826
Other community, social and personal services	5581	5118	3968	2345	2098	2042
Of which recreational, cultural and sporting activities	5569	5109	3875	2333	2089	1963

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

2.7. R&D PERSONNEL BY EDUCATIONAL ATTAINMENT (headcount)

	Total	Higher education	Secondary vocational education	Other education
1995	1061044	626979	168999	265066
2000	887729	530649	144503	212577
2001	885568	529905	147604	208059
2002	870878	525145	146052	199681
2003	858470	521137	144197	193136
2004	839338	511778	141682	185878
2005	813207	501718	134222	177267
2006	807066	502657	133454	170955
2007	801135	513099	129360	158676
2008	761252	495255	121508	144489
2009	742433	489076	115042	138315
2010	736540	493852	109158	133530
2011	735273	506330	103873	125070
2012	726318	508057	99503	118758
2013	727029	512017	97867	117145
2014	732274	522726	95564	113984
2015	738857	537118	95640	106099

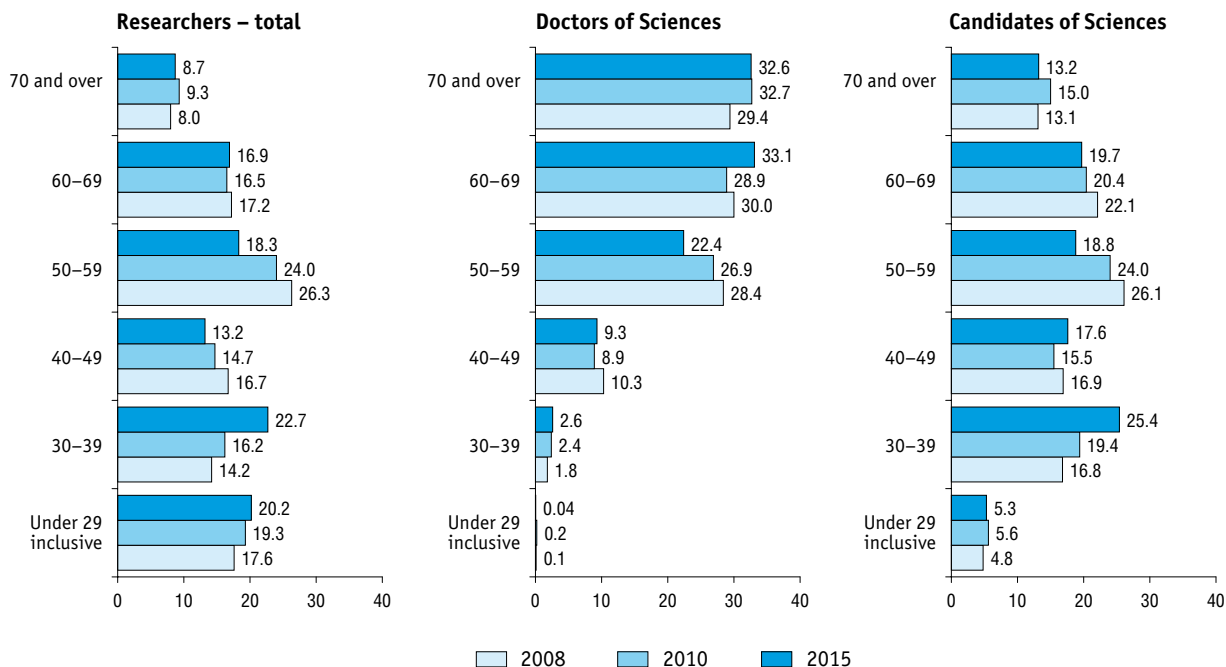
2.8. RESEARCHERS BY GENDER AND AGE (headcount)

	2013			2014			2015		
	Researchers	Of whom		Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	369015	27485	80763	373905	27969	81629	379411	28046	83487
Age, years:									
under 29 inclusive	73869	28	4578	75715	13	4660	76813	11	4408
30–39	74961	723	18920	78756	718	19839	85972	730	21207
40–49	50149	2556	13274	49373	2558	13608	50171	2606	14703
50–54	36620	2970	8101	34606	2652	7662	32416	2457	7292
55–59	39375	4030	8794	38386	3885	8597	37136	3829	8435
60–69	60952	8416	15892	63866	9041	16238	63943	9280	16420
70 and over	33089	8762	11204	33203	9102	11025	32960	9133	11022
Males	218151	20663	47616	222413	20842	47828	226482	20830	48564
Age, years:									
under 29 inclusive	45974	27	2728	47857	10	2828	48585	11	2658
30–39	44205	484	10096	46929	488	10630	51537	514	11424
40–49	26250	1707	6715	26026	1638	6736	26724	1619	7151
50–54	19025	2056	4568	17965	1793	4286	16919	1634	3986
55–59	21902	2874	5413	21215	2691	5179	20562	2654	5045
60–69	37290	6500	10574	38838	6892	10721	38864	7024	10808
70 and over	23505	7015	7522	23583	7330	7448	23291	7374	7492

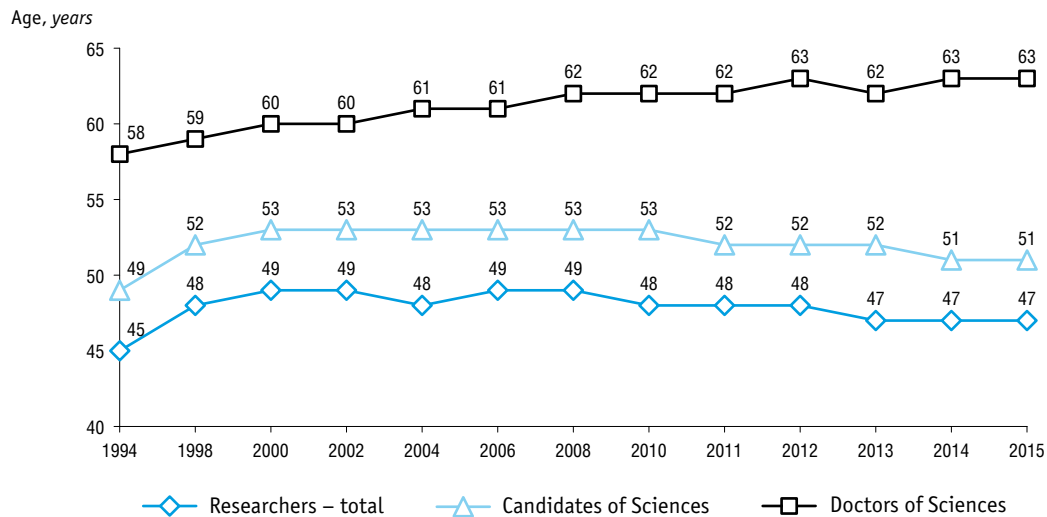
(continued)

	2013			2014			2015		
	Researchers	Of whom		Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Females	150864	6822	33147	151492	7127	33801	152929	7216	34923
Age, years:									
under 29 inclusive	27895	1	1850	27858	3	1832	28228	–	1750
30–39	30756	239	8824	31827	230	9209	34435	216	9783
40–49	23899	849	6559	23347	920	6872	23447	987	7552
50–54	17595	914	3533	16641	859	3376	15497	823	3306
55–59	17473	1156	3381	17171	1194	3418	16574	1175	3390
60–69	23662	1916	5318	25028	2149	5517	25079	2256	5612
70 and over	9584	1747	3682	9620	1772	3577	9669	1759	3530

2.9. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY AGE



2.10. AVERAGE AGE OF RESEARCHERS

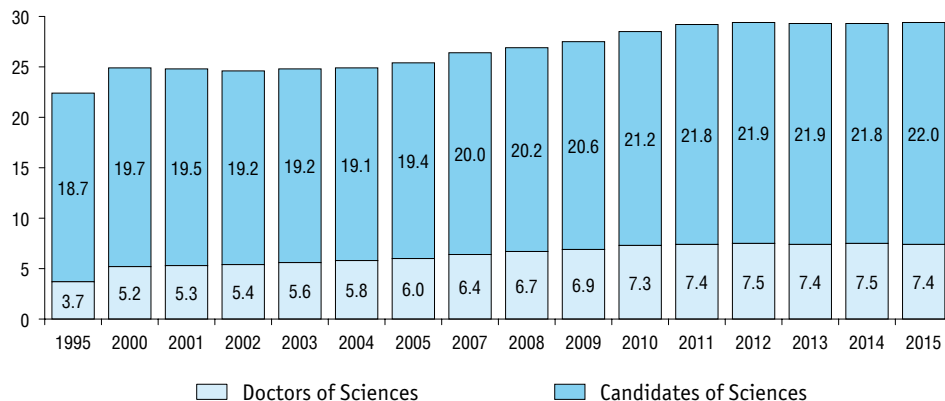


2.11. RESEARCHERS WITH ACADEMIC DEGREES

(headcount)

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Researchers with academic degrees	116465	105911	99910	99428	103725	101049	101275	105114	109493	109330	108248	109598	111533
Doctors of Sciences	19330	21949	23102	23410	25213	25140	25295	26789	27675	27784	27485	27969	28046
Candidates of Sciences	97135	83962	76808	76018	78512	75909	75980	78325	81818	81546	80763	81629	83487

2.12. RESEARCHERS WITH ACADEMIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS

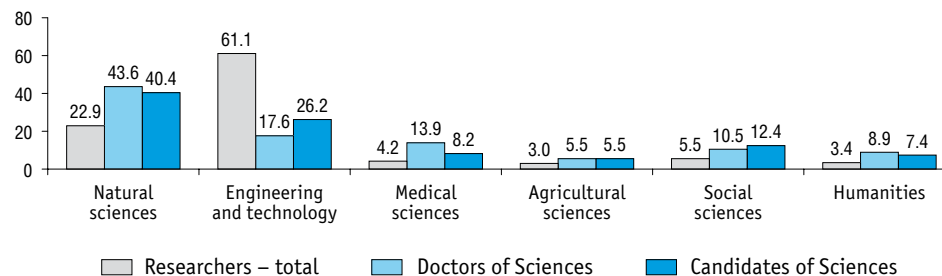


2.13. RESEARCHERS BY FIELD OF SCIENCE AND TECHNOLOGY

(headcount)

	2005			2012			2013			2014			2015		
	Re-search-ers	Of whom		Re-search-ers	Of whom		Re-search-ers	Of whom		Re-search-ers	Of whom		Re-search-ers	Of whom	
		Doctors of Sci-ences	Candi-dates of Sci-ences		Doctors of Sci-ences	Candi-dates of Sci-ences		Doctors of Sci-ences	Candi-dates of Sci-ences		Doctors of Sci-ences	Candi-dates of Sci-ences		Doctors of Sci-ences	Candi-dates of Sci-ences
Total	391121	23410	76018	372620	27784	81546	369015	27485	80763	373905	27969	81629	379411	28046	83487
Natural sciences	91570	10738	32969	88704	12397	34068	85588	12163	33266	88370	12312	33943	86722	12233	33725
Engineering and technology	249358	4495	23677	225118	4757	21325	225082	4777	21514	226682	4874	21248	231809	4928	21861
Medical sciences	15672	3715	6791	16595	4001	7200	16352	4053	7363	15714	3907	6961	15819	3899	6808
Agricultural sciences	13724	1356	4922	12288	1688	5038	11869	1565	4707	11869	1570	4763	11296	1551	4592
Social sciences	12497	1336	4158	17284	2501	7941	18384	2638	8435	18705	2875	8775	20874	2951	10357
Humanities	8300	1770	3501	12631	2440	5974	11740	2289	5478	12565	2431	5939	12891	2484	6144

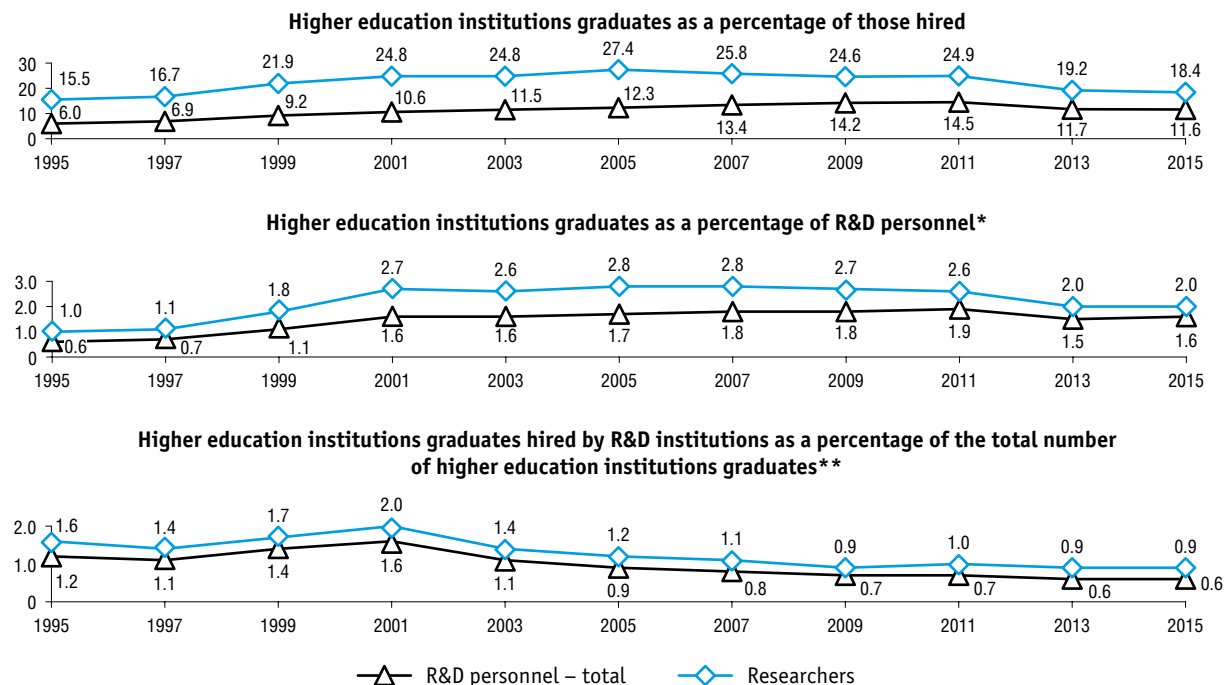
2.14. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY FIELD OF SCIENCE AND TECHNOLOGY: 2015



2.15. FLOWS OF R&D PERSONNEL (headcount)

	Number at the beginning of the reference year	Inflow				Outflow				Number at the end of the reference year
		Total	Of whom			Total	Of whom			
			graduates from higher education institutions	graduates from other research institute	others		at own initiative	due to staff reduction	due to other reasons	
1995	1179294	108335	6498	23402	78435	226585	141776	29747	55062	1061044
2001	890718	132757	14122	21549	97086	137932	93587	3542	40803	885568
2003	867456	120298	13777	20702	85819	129284	89513	5917	33854	858470
2005	826007	109973	13495	15618	80860	122773	81623	6598	34552	813207
2007	814329	105758	14150	19778	71830	118952	80536	4617	33799	801135
2009	745978	93526	13235	13529	66762	97071	58295	5776	33000	742433
2011	741183	94939	13725	11881	69333	100849	62848	2973	35028	735273
2013	725591	94550	11075	13210	70265	93112	59214	2015	31883	727029
2015	737210	100290	11662	14026	74602	98643	58285	4238	36120	738857

2.16. HIRING (INFLOW) OF HIGHER EDUCATION INSTITUTIONS GRADUATES BY R&D INSTITUTIONS



* The ratio of the higher education institutions graduates hired during the year to the number of employees at the end of the year.

** Including private higher education institutions.

2.17. TRENDS INFLOW AND OUTFLOW OF R&D PERSONNEL

	1995	2001	2005	2007	2009	2011	2013	2015
R&D personnel balance, by inflow*	0.099	0.152	0.138	0.135	0.131	0.135	0.138	0.144
R&D personnel balance, by outflow**	0.207	0.158	0.154	0.152	0.136	0.144	0.136	0.142
Workforce replacement ratio***	0.478	0.962	0.896	0.889	0.963	0.941	1.015	1.017

* The ratio of the R&D personnel inflow during the year to the average number of employees in the organisation.

** The ratio of the R&D personnel outflow during the year to the average number of employees in the organisation.

*** The ratio of R&D personnel inflow during the year to the outflow during the same period.

Academic and Scientific Personnel Postgraduate Education

2.18. MAIN INDICATORS OF POSTGRADUATE STUDIES ACTIVITIES

	Number of institutions (at the end of the year)	Enrollment, <i>headcount</i> (at the end of the year)	Entrants, <i>headcount</i>	Graduates, <i>headcount</i>	Of whom with thesis defence, <i>headcount</i>
Total					
1995	1334	62317	24025	11369	2609
2000	1362	117714	43100	24828	7503
2001	1393	128420	45241	25696	6172
2002	1416	136242	46935	28101	7411
2003	1441	140741	47803	30799	8378
2004	1452	142662	47687	32595	10256
2005	1473	142899	46896	33561	10650
2006	1493	146111	50462	35530	11893
2007	1490	147719	51633	35747	10970
2008	1529	147674	49638	33670	8831
2009	1547	154470	55540	34235	10770
2010	1568	157437	54558	33763	9611
2011	1570	156279	50582	33082	9635
2012	1575	146754	45556	35162	9195
2013	1557	132002	38971	34733	8979
2014	1519	119868	32981	28273	5189
2015	1446	109936	31647	25826	4651

(continued)

	Number of institutions (at the end of the year)	Enrollment, <i>headcount</i> (at the end of the year)	Entrants, <i>headcount</i>	Graduates, <i>headcount</i>	Of whom with thesis defence, <i>headcount</i>
Research institutes					
1995	828	11488	4024	2814	596
2000	797	17502	6075	3813	873
2001	806	17784	6092	3859	685
2002	818	18323	6026	4205	851
2003	827	18959	6335	4336	841
2004	831	19654	6620	4656	1002
2005	833	19986	6577	4806	1009
2006	820	19542	6330	4865	852
2007	799	18346	6072	4847	895
2008	811	17397	5381	4781	715
2009	800	16549	5549	4359	734
2010	809	16936	5655	4335	729
2011	805	15865	4784	4028	693
2012	820	14823	4555	4101	655
2013	818	13593	4166	3943	674
2014	805	12175	3126	3331	397
2015	771	11528	3189	2728	313

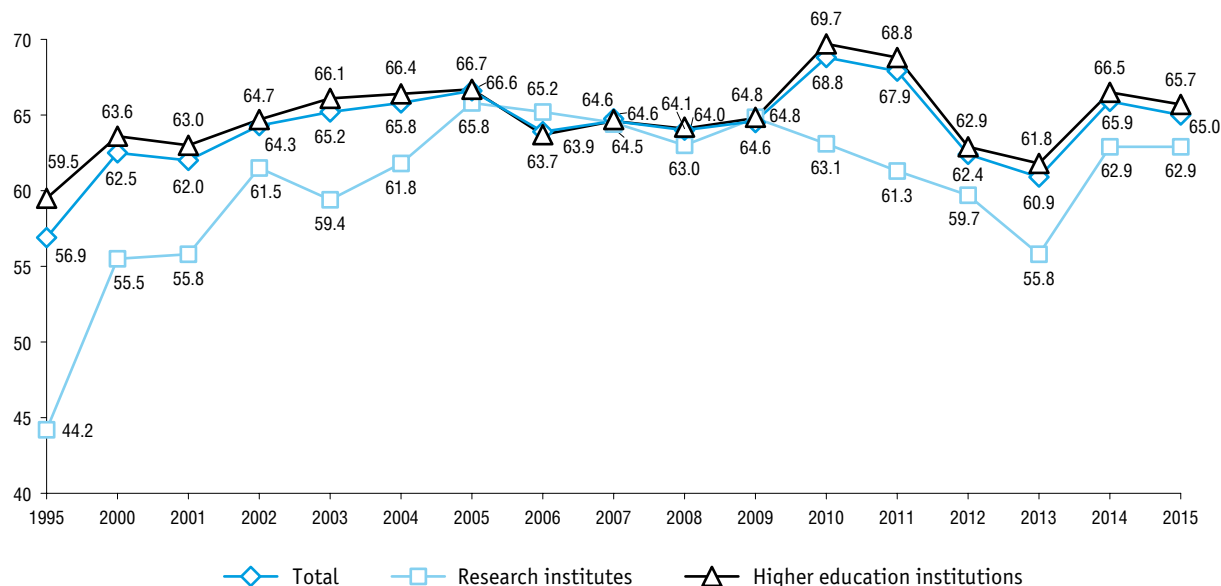
(continued)

	Number of institutions (at the end of the year)	Enrollment, <i>headcount</i> (at the end of the year)	Entrants, <i>headcount</i>	Graduates, <i>headcount</i>	Of whom with thesis defence, <i>headcount</i>
Higher education institutions					
1995	506	50829	20001	8555	2013
2000	565	100212	37025	21015	6630
2001	587	110636	39149	21837	5487
2002	598	117919	40909	23896	6560
2003	614	121782	41468	26463	7537
2004	621	123008	41067	27939	9254
2005	640	122913	40319	28755	9641
2006	673	126569	44132	30665	11041
2007	691	129373	45561	30900	10075
2008	718	130277	44257	28889	8116
2009	730	137068	49736	29678	9996
2010	748	139908	48748	29268	8854
2011	750	139542	45561	28847	8869
2012	740	131226	40802	30885	8480
2013	724	117790	34643	30639	8257
2014	698	107083	29700	24836	4770
2015	661	97847	28285	22971	4318
Further vocational education institutions					
2009	17	853	255	198	40
2010	11	593	155	160	28
2011	15	872	237	207	73
2012	15	705	199	176	60
2013	15	619	162	151	48
2014	16	610	155	106	22
2015	14	561	173	127	20

**2.19. ADMISSION OF HIGHER EDUCATION INSTITUTIONS GRADUATES OF THE REFERENCE YEAR
TO POSTGRADUATE STUDIES BY FORM OF STUDY**
(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	13673	26926	31211	32232	33341	31756	35855	37528	34326	28411	23736	21720	20585
Full-timers	11215	22076	25535	26022	27210	24827	28487	28507	24754	21528	19432	18180	17544
Part-timers	2458	4850	5676	6210	6131	6929	7368	9021	9572	6883	4304	3540	3041
Research institutes	1777	3370	4328	4124	3918	3391	3595	3569	2933	2718	2326	1965	2005
Full-timers	1340	2677	3439	3262	3167	2723	2896	2877	2379	2226	1852	1652	1772
Part-timers	437	693	889	862	751	668	699	692	554	492	474	313	233
Higher education institutions	11896	23556	26883	28108	29423	28365	32223	33955	31356	25671	21398	19746	18572
Full-timers	9875	19399	22096	22760	24043	22104	25564	25628	22347	19298	17578	16525	15770
Part-timers	2021	4157	4787	5348	5380	6261	6659	8327	9009	6373	3820	3221	2802
Other vocational education institutions	–	–	–	–	–	–	37	4	37	22	12	9	8
Full-timers	–	–	–	–	–	–	27	2	28	4	2	3	2
Part-timers	–	–	–	–	–	–	10	2	9	18	10	6	6

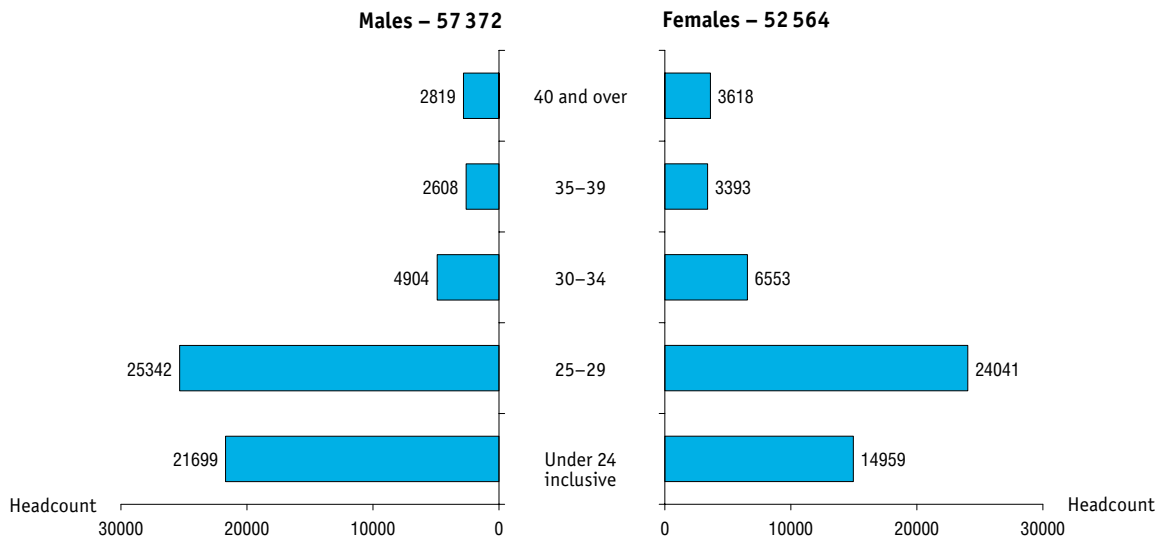
2.20. HIGHER EDUCATION INSTITUTIONS GRADUATES OF THE REFERENCE YEAR AS A PERCENTAGE OF THE TOTAL NUMBER OF POSTGRADUATE STUDENTS*



* Other vocational education institutions: 2009 – 14.5%, 2010 – 2.6%, 2011 – 15.6%, 2012 – 11.1%, 2013 – 7.4%, 2014 – 5.8%, 2015 – 4.6%.

2.21. POSTGRADUATE STUDENTS BY GENDER AND AGE: 2015

(at the end of the year)



2.22. POSTGRADUATE STUDIES ENROLLMENT AND ENTRANTS BY FIELD OF STUDIES (MAJOR): 2015 (headcount)

	Enrollment		Entrants	
	2014*	2015*	2014	2015
Total	32859	60449	32981	31647
Mathematics and mechanics	771	1459	782	752
Computer and information sciences	119	211	120	148
Physical sciences and astronomy	1288	2358	1301	1214
Chemistry	856	1584	861	799
Geosciences	1249	2097	1271	1065
Biological sciences	1276	2563	1258	1352
Architecture	180	323	184	158
Civil engineering and technology	721	1239	726	663
Informatics and computer science	2655	4802	2667	2556
Information security	142	307	143	158
Electronics, radio-engineering and communication systems	567	1115	569	558
Photonic engineering, instrument engineering, optical and bioengineering systems and technology	287	577	289	300
Power engineering and thermal power engineering	577	1065	573	528
Nuclear power engineering and technology	98	160	100	88
Mechanical engineering	722	1366	726	731
Engineering physics and technology	29	52	18	32
Weapons and armaments systems	–	4	–	3
Chemical engineering	370	743	368	399
Industrial ecology and biotechnology	349	562	348	262
Technosphere safety and environmental engineering	162	270	160	130
Applied geology, mining, oil and gas engineering and geodesics	335	601	337	310
Materials engineering	286	558	289	289
Surface transport engineering and technology	245	436	243	232
Aircraft and aerospace engineering	236	471	237	247

(continued)

	Enrollment		Entrants	
	2014*	2015*	2014	2015
Flight navigation and aircraft and aerospace equipment operation	34	75	34	43
Shipbuilding and water-borne transportation engineering and technology	136	268	135	148
Engineering systems management	276	541	278	280
Nano-technology and nano-materials	13	22	13	11
Light industry technological processes	80	145	80	74
Basic medicine	221	530	220	288
Clinical medicine	1940	4124	1932	2096
Health sciences and preventive medicine	201	389	203	205
Pharmacology and pharmacy	113	224	114	125
Agriculture, forestry, fisheries	1074	1976	1067	1053
Veterinary science and animal science	554	979	546	490
Psychology	771	1433	777	804
Economics and management	4493	7808	4543	4056
Sociology and social work	513	931	513	507
Law	2371	4040	2396	2191
Political sciences and area studies	580	1047	583	559
Media and information and library science	142	284	141	151
Education and educational research	1830	3512	1852	1917
Linguistics and literature studies	1470	2684	1468	1387
History and archaeology	1048	1903	1046	967
Philosophy, ethics and religion	633	1156	631	599
Theological studies	–	5	–	5
Physical training and sport sciences	234	390	234	194
Art (arts, history of arts, etc.)	341	613	333	296
Cultural studies and sociocultural projects	271	447	272	227

* In accordance with the Federal Law of 29.12.2012 № 273-FZ 'On the Education in the Russian Federation' since 01.01.2014 the fields of studies (majors, fields of science) that postgraduates can enroll on are enumerated in the order of the Ministry of Education and Science of the Russian Federation of 12.09.2013 № 1061 'On the Approval of the Lists of Major Courses and Fields of Studies in the Sphere of Higher Education'.

2.23. POSTGRADUATE STUDENTS BY FIELD OF SCIENCE AND TECHNOLOGY (headcount)

	Enrollment (at the end of the year)		Graduates		Of whom with thesis defence	
	2014*	2015*	2014	2015	2014	2015
Total	87009	49487	28273	25826	5189	4651
Physics and mathematics	4991	3299	1669	1230	311	272
Chemical sciences	2012	1346	694	497	158	146
Biological sciences	4563	2889	1371	1235	241	232
Engineering and technology**	23644	14011	7282	6723	1246	1093
Agricultural sciences***	3039	1684	1024	1006	245	254
History and archaeology	2545	1362	932	855	143	127
Economics	11945	6082	4040	3839	703	582
Philosophy	1592	845	555	492	81	77
Philology and linguistics	3900	2212	1323	1248	271	272
Law	5544	2808	1737	1461	226	205
Educational research	5024	2762	1800	1580	358	286
Medical sciences****	8297	4781	2429	2611	761	722
Art (arts, history of arts, etc.)	927	529	549	304	26	12
Psychology	1924	1040	621	544	103	69
Sociology	1396	725	460	423	78	68
Political science	1269	674	393	392	52	48
Geosciences*****	3393	1883	1103	1104	149	154
Other sciences	1004	555	291	282	37	32

* The number of postgraduate students in their second-fifth years. In accordance with the Federal Law of 29.12.2012 № 273-FZ 'On the Education in the Russian Federation' since 01.01.2014 the fields of studies (majors, fields of science) that postgraduates can enroll on are enumerated in the order of the Ministry of Education and Science of the Russian Federation of 12.09.2013 № 1061 'On the Approval of the Lists of Major Courses and Fields of Studies in the Sphere of Higher Education'.

** Including Architecture.

*** Including Veterinary Science.

**** Including Pharmacology and Pharmacy.

***** Including Geology, Mineralogy and Geography.

2.24. MAIN INDICATORS OF DOCTORAL STUDIES EFFICIENCY

	Number of institutions (at the end of the year)	Number of doctoral students, headcount (at the end of the year)	Entrants, headcount	Graduates who completed their doctoral studies, headcount	Of whom with doctoral thesis defence, headcount
Total					
1995	384	2190	904	464	137
1998	452	3684	1473	821	312
1999	476	3993	1466	1033	356
2000	492	4213	1637	1251	486
2001	510	4462	1630	1257	397
2002	531	4546	1579	1267	411
2003	543	4567	1611	1385	414
2004	533	4466	1567	1451	505
2005	535	4282	1457	1417	516
2006	548	4189	1499	1383	450
2007	579	4109	1520	1320	429
2008	593	4242	1517	1216	297
2009	598	4294	1569	1302	435
2010	602	4418	1650	1259	336
2011	608	4562	1696	1321	382
2012	597	4554	1632	1371	394
2013	585	4572	1582	1356	323
2014	478	3204	166	1359	231
2015	437	2007	419	1386	181

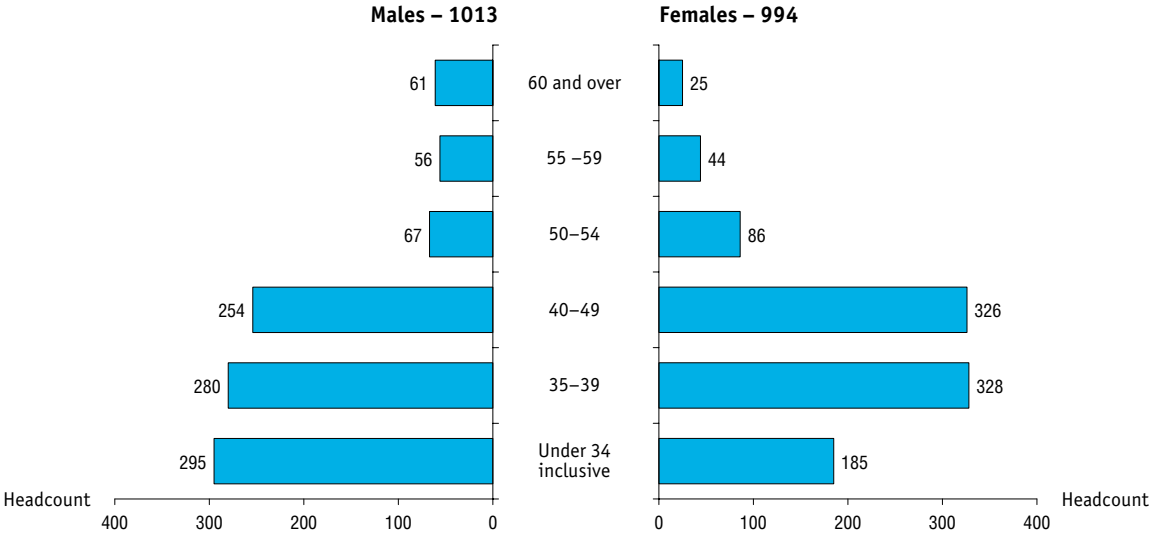
(continued)

	Number of institutions (at the end of the year)	Number of doctoral students, headcount (at the end of the year)	Entrants, headcount	Graduates who completed their doctoral studies, headcount	Of whom with doctoral thesis defence, headcount
Research institutes					
1995	167	483	197	128	41
1998	170	446	161	159	55
1999	173	447	182	146	54
2000	178	505	192	151	63
2001	181	485	183	138	38
2002	189	517	194	140	35
2003	195	515	184	154	47
2004	179	481	156	155	52
2005	173	445	147	148	48
2006	178	426	142	139	35
2007	201	358	118	116	33
2008	205	336	111	123	23
2009	204	327	114	107	23
2010	192	299	100	95	20
2011	192	303	106	100	17
2012	183	254	87	99	16
2013	184	262	110	73	9
2014	105	194	23	78	14
2015	91	153	46	67	8

(continued)

	Number of institutions (at the end of the year)	Number of doctoral students, headcount (at the end of the year)	Entrants, headcount	Graduates who completed their doctoral studies, headcount	Of whom with doctoral thesis defence, headcount
Higher education institutions					
1995	217	1707	707	336	96
1998	282	3238	1312	662	257
1999	303	3546	1284	887	302
2000	314	3708	1445	1100	423
2001	329	3977	1447	1119	359
2002	342	4029	1385	1127	376
2003	348	4052	1427	1231	367
2004	354	3985	1411	1296	453
2005	362	3837	1310	1269	468
2006	370	3763	1357	1244	415
2007	378	3751	1402	1204	396
2008	388	3906	1406	1093	274
2009	391	3962	1454	1193	412
2010	407	4116	1548	1162	316
2011	412	4256	1589	1220	365
2012	410	4296	1543	1271	378
2013	398	4307	1471	1281	314
2014	372	3009	143	1281	217
2015	345	1853	373	1319	173
Further vocational education institutions					
2009	3	5	1	2	–
2010	3	3	2	2	–
2011	4	3	1	1	–
2012	4	4	2	1	–
2013	3	3	1	2	–
2014	1	1	–	–	–
2015	1	1	–	–	–

2.25. DOCTORAL STUDENTS BY GENDER AND AGE: 2015
(at the end of the year)



2.26. NUMBER OF DOCTORAL STUDENTS, ENROLLMENT AND COMPLETION OF STUDIES BY FIELD OF SCIENCE AND TECHNOLOGY (headcount)

	Number of doctoral students, <i>headcount (at the end of the year)</i>		Entrants		Graduates who completed their doctoral studies		Of whom with doctoral thesis defence	
	2014	2015	2014	2015	2014	2015	2014	2015
Total	3204	2007	166	419	1359	1386	231	181
Physics and Mathematics	232	147	12	28	99	105	16	11
Chemical Sciences	99	61	3	6	41	40	4	4
Biological Sciences	89	59	6	10	47	35	4	4
Engineering and Technology*	868	517	34	99	377	409	62	56
Agricultural Sciences**	78	54	3	5	40	30	8	4
History and Archaeology	158	101	7	20	66	67	14	11
Economics	389	286	36	103	150	158	24	29
Philosophy	102	58	7	8	55	44	5	5
Philology and linguistics	215	119	11	12	95	95	18	6
Law	82	63	16	28	26	25	2	6
Educational Researches	297	185	8	38	127	127	27	16
Medical Sciences***	188	99	14	11	89	82	24	14
Art (Arts, History of Arts, etc.)	37	25	1	1	9	12	3	1
Psychology	81	56	1	12	37	35	3	2
Sociology	75	42	4	4	30	26	6	3
Political Science	85	33	1	6	11	27	1	2
Geosciences****	102	61	—	12	40	47	7	4
Other sciences	54	41	2	16	20	22	3	3

* Including Architecture.

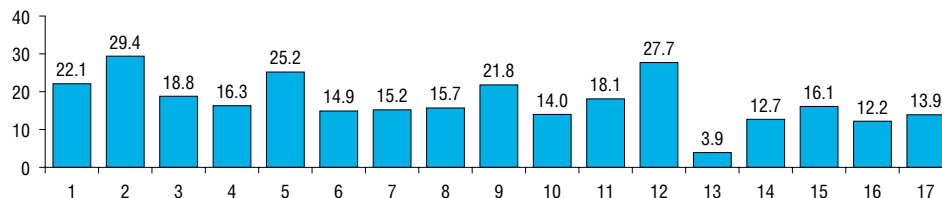
** Including Veterinary Science.

*** Including Pharmacology and Pharmacy.

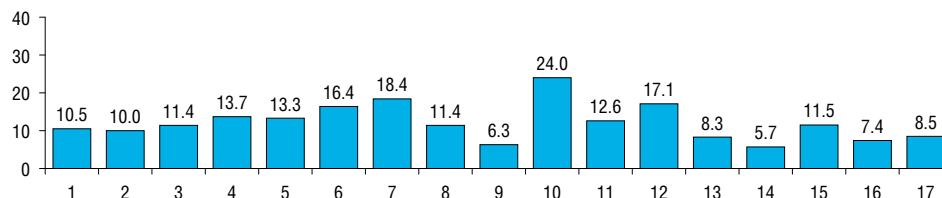
**** Including Geology, Mineralogy and Geography.

2.27. GRADUATES WHO DEFENDED THEIR POSTGRADUATE AND DOCTORAL THESIS DURING THEIR STUDIES AS A PERCENTAGE OF ALL THE GRADUATES WHO COMPLETED THEIR POSTGRADUATE AND DOCTORAL STUDIES BY FIELD OF SCIENCE AND TECHNOLOGY: 2015

Postgraduate studies



Doctoral studies



1 – Physics and Mathematics
 2 – Chemical Sciences
 3 – Biological Sciences
 4 – Engineering and Technology*
 5 – Agricultural Sciences**
 6 – History and Archaeology

7 – Economics
 8 – Philosophy
 9 – Philology and linguistics
 10 – Law
 11 – Educational Researches
 12 – Medical Science***

13 – Art (Arts, History of Arts, etc.)
 14 – Psychology
 15 – Sociology
 16 – Political Science
 17 – Geosciences****

* Including Architecture.

** Including Veterinary Science.

*** Including Pharmacology and Pharmacy.

**** Including Geology, Mineralogy and Geography.



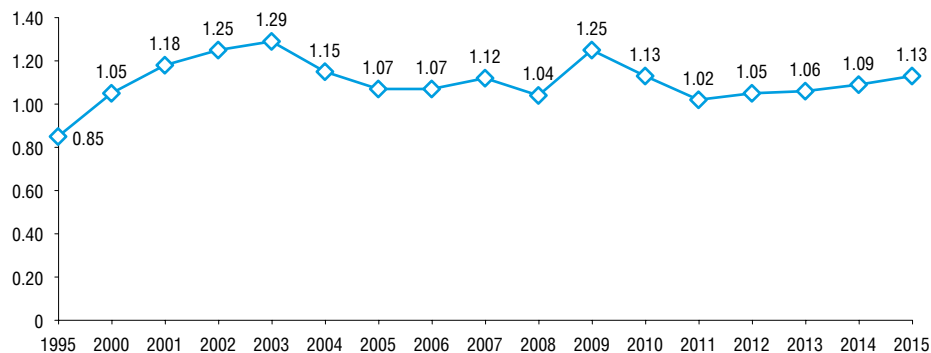
3. R&D Funding

3.1. GROSS DOMESTIC EXPENDITURE ON R&D

(thousand roubles, 1995 – million roubles)

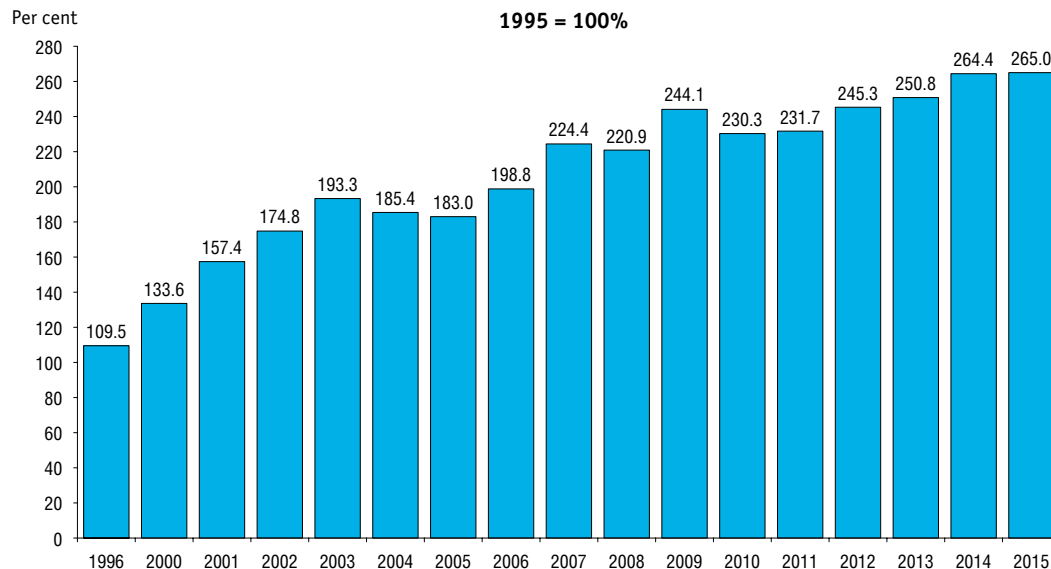
	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D:												
at current prices	12149458.6	76697100.5	230785150.3	371080327.1	431073185.2	485834338.2	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
at constant 1989 prices	2485.4	3321.2	4547.5	5577.5	5490.8	6067.0	5723.2	5759.3	6097.2	6232.9	6572.2	6585.7

Gross domestic expenditure on R&D as a percentage of gross domestic product

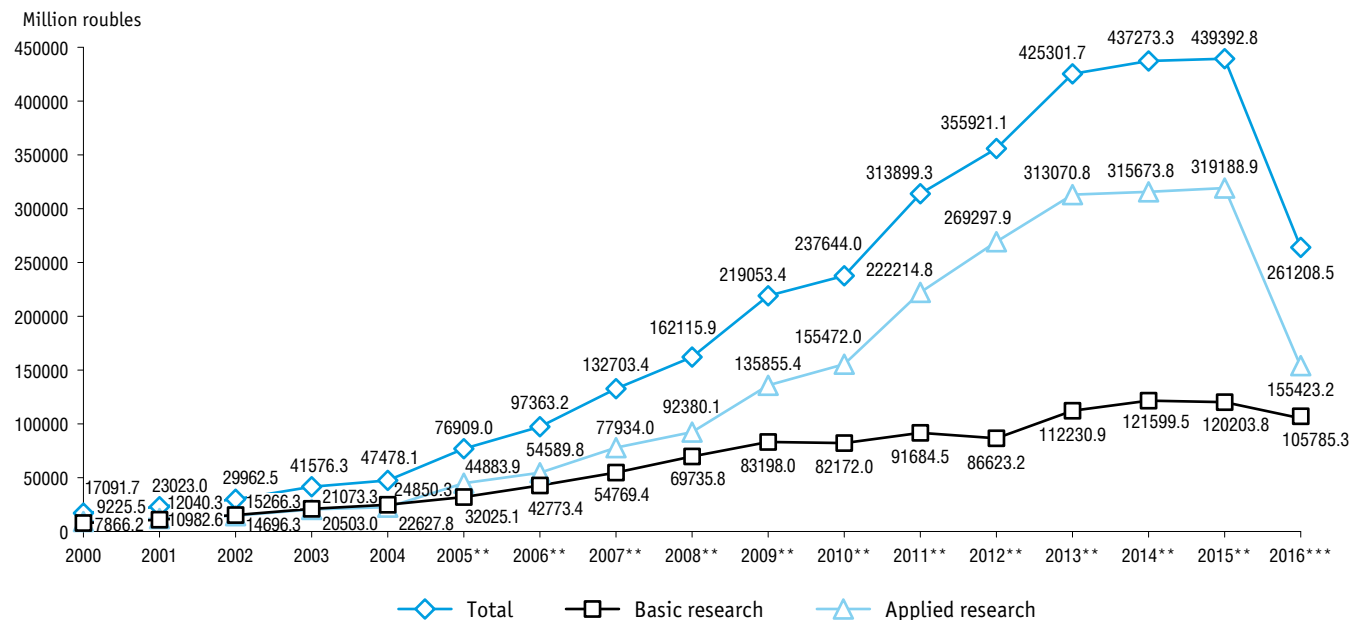


3.2. TRENDS IN GROSS DOMESTIC EXPENDITURE ON R&D

(at constant 1989 prices)



3.3. GOVERNMENT BUDGET APPROPRIATIONS ON CIVIL S&T AT CURRENT PRICES*

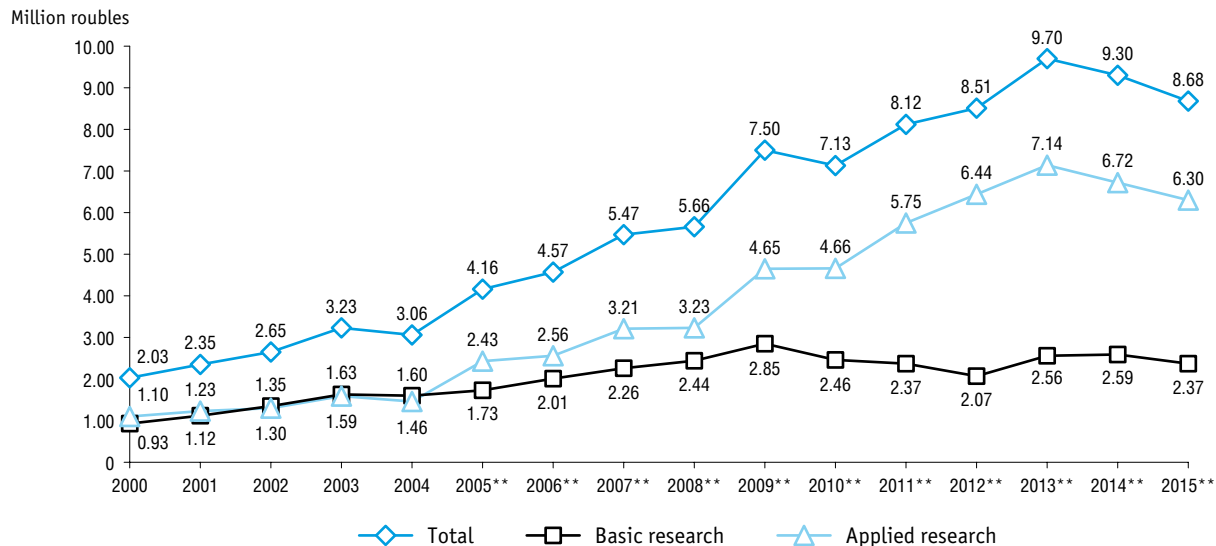


* In 2001–2004: appropriations in accordance with Section 06 ‘Basic Research and Scientific and Technological Progress Promotion’ of the Federal Budget and the corresponding subsections.

** Data source for 2005–2014: reports on the implementation of the consolidated budget and budgets of state non-budgetary funds (the data are provided by the Federal Treasury).

*** In accordance with the Federal Law of 14.12.2015 № 359-FZ ‘On the Federal Budget for 2016’ as amended by the Federal Law of 22.11.2016 № 397-FZ ‘On amendments to the Federal Budget for 2016’.

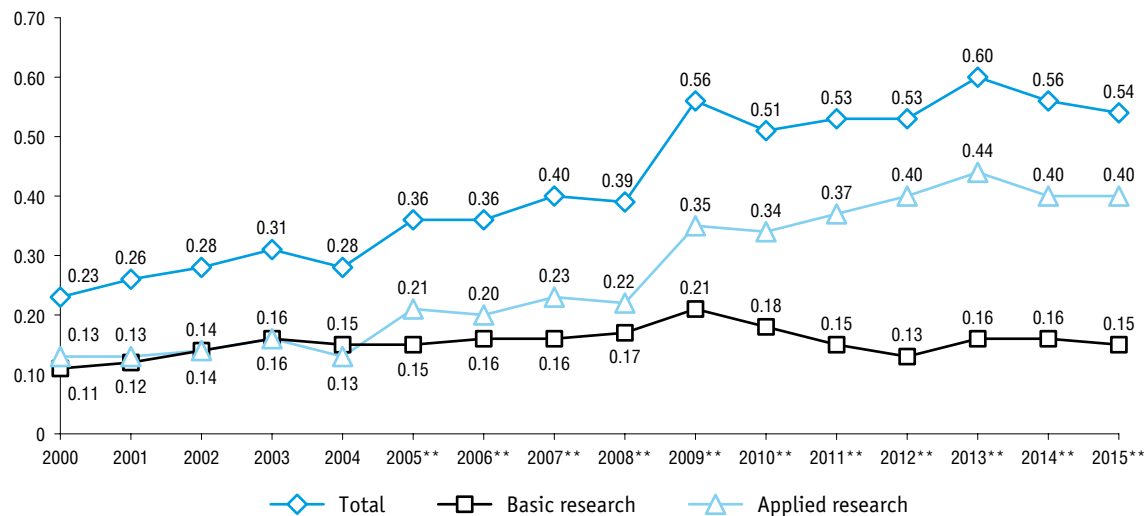
3.4. GOVERNMENT BUDGET APPROPRIATIONS ON CIVIL S&T AT CONSTANT 1991 PRICES*



* In 2001–2004: appropriations in accordance with Section 06 ‘Basic Research and Scientific and Technological Progress Promotion’ of the Federal Budget and the corresponding subsections.

** Data source for 2005–2015: reports on the implementation of the consolidated budget and budgets of state non-budgetary funds (the data are provided by the Federal Treasury).

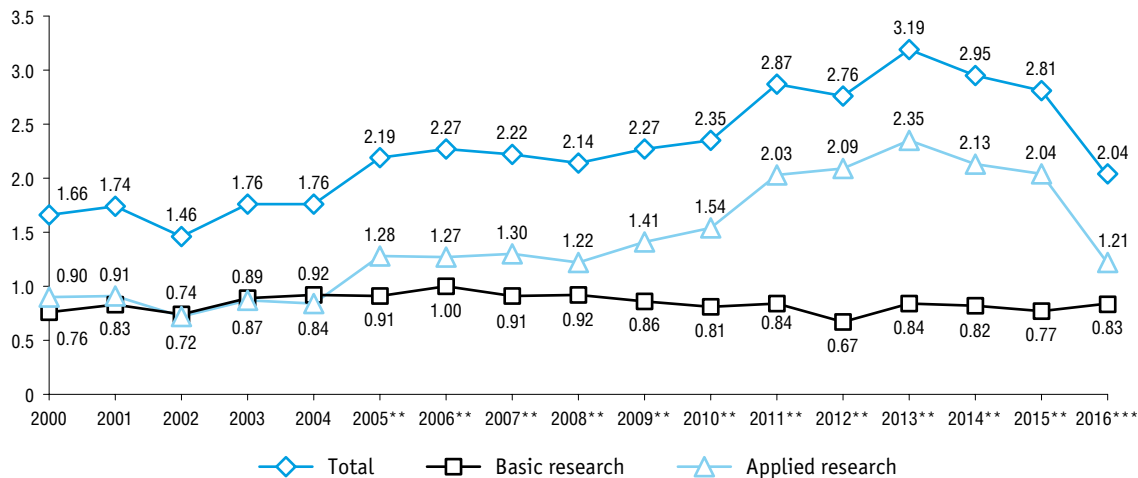
3.5. GOVERNMENT BUDGET APPROPRIATIONS ON CIVIL S&T AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT*



* In 2001–2004: appropriations in accordance with Section 06 ‘Basic Research and Scientific and Technological Progress Promotion’ of the Federal Budget and the corresponding subsections.

** Data source for 2005–2015: reports on the implementation of the consolidated budget and budgets of state non-budgetary funds (the data are provided by the Federal Treasury).

3.6. GOVERNMENT BUDGET APPROPRIATIONS ON CIVIL S&T AS A PERCENTAGE OF FEDERAL BUDGET EXPENDITURE*

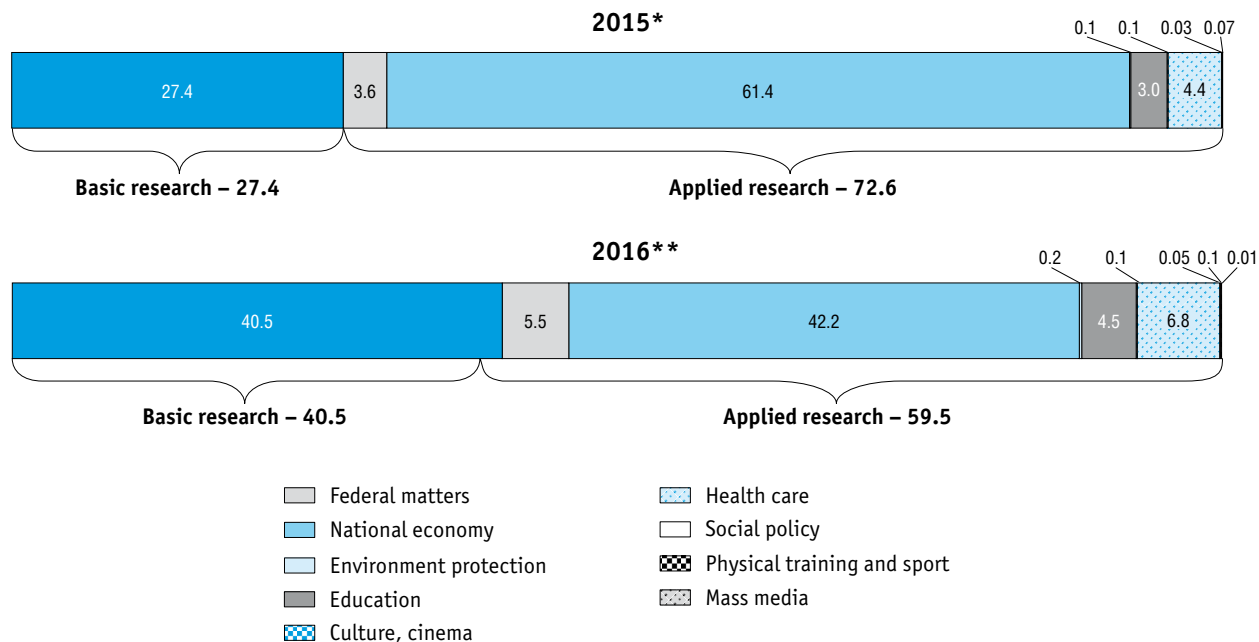


* In 2001–2004: appropriations in accordance with Section 06 ‘Basic Research and Scientific and Technological Progress Promotion’ of the Federal Budget and the corresponding subsections.

** Data source for 2005–2014: reports on the implementation of the consolidated budget and budgets of state non-budgetary funds (the data are provided by the Federal Treasury).

*** In accordance with the Federal Law of 14.12.2015 № 359-FZ ‘On the Federal Budget for 2016’ as amended by the Federal Law of 22.11.2016 № 397-FZ ‘On amendments to the Federal Budget for 2016’.

3.7. PERCENTAGE DISTRIBUTION OF GOVERNMENT BUDGET APPROPRIATIONS ON CIVIL S&T BY SECTION OF BUDGET EXPENDITURE CLASSIFICATION AND TYPE OF ACTIVITY



* Data source for 2015: reports on the implementation of the consolidated budget and budgets of state non-budgetary funds (the data are provided by the Federal Treasury).

** In accordance with the Federal Law of 14.12.2015 № 359-FZ 'On the Federal Budget for 2016' as amended by the Federal Law of 22.11.2016 № 397-FZ 'On amendments to the Federal Budget for 2016'.

3.8. GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS

	Gross domestic expenditure on R&D	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
At current prices, thousand roubles, 1995 – million roubles						
1995	12149458.6	7476767.6	4076707.0	30543.0	3672.1	561768.9
2000	76697100.5	42035655.1	25208436.5	212990.3	67641.5	9172377.1
2001	105260731.6	60228854.3	35394269.5	359916.1	205512.5	9072179.2
2002	135004491.9	78883876.7	44699518.7	426216.0	134353.6	10860526.9
2003	169862369.1	101252097.2	52256884.6	807293.0	277916.5	15268177.8
2004	196039870.2	118867302.8	61528028.1	692412.1	98631.6	14853495.6
2005	230785150.3	142960799.1	69244740.5	983242.0	68412.2	17527956.5
2006	288805211.5	176457427.8	83197909.8	1652533.1	296869.8	27200471.0
2007	371080327.1	232364775.8	109265410.0	2276881.0	377417.8	26795842.5
2008	431073185.2	278992303.3	123695707.2	1993888.9	768479.1	25622806.7
2009	485834338.2	322889237.6	129170972.3	1896167.0	471799.6	31406161.7
2010	523377233.9	368191779.8	133498976.0	2436564.1	682378.0	18567536.0
2011	610426680.6	409449448.8	168957596.6	4664465.3	1209661.5	26145508.4
2012	699869784.8	474789779.0	190545904.2	5905489.1	877937.6	27750674.9
2013	749797638.8	507197614.5	211135955.9	7820677.9	896366.0	22747024.5
2014	847526992.9	586658713.4	229444656.4	9069176.1	1372014.1	20982432.9
2015	914669057.2	635859865.4	242155382.4	10875090.0	1566750.2	24211969.2

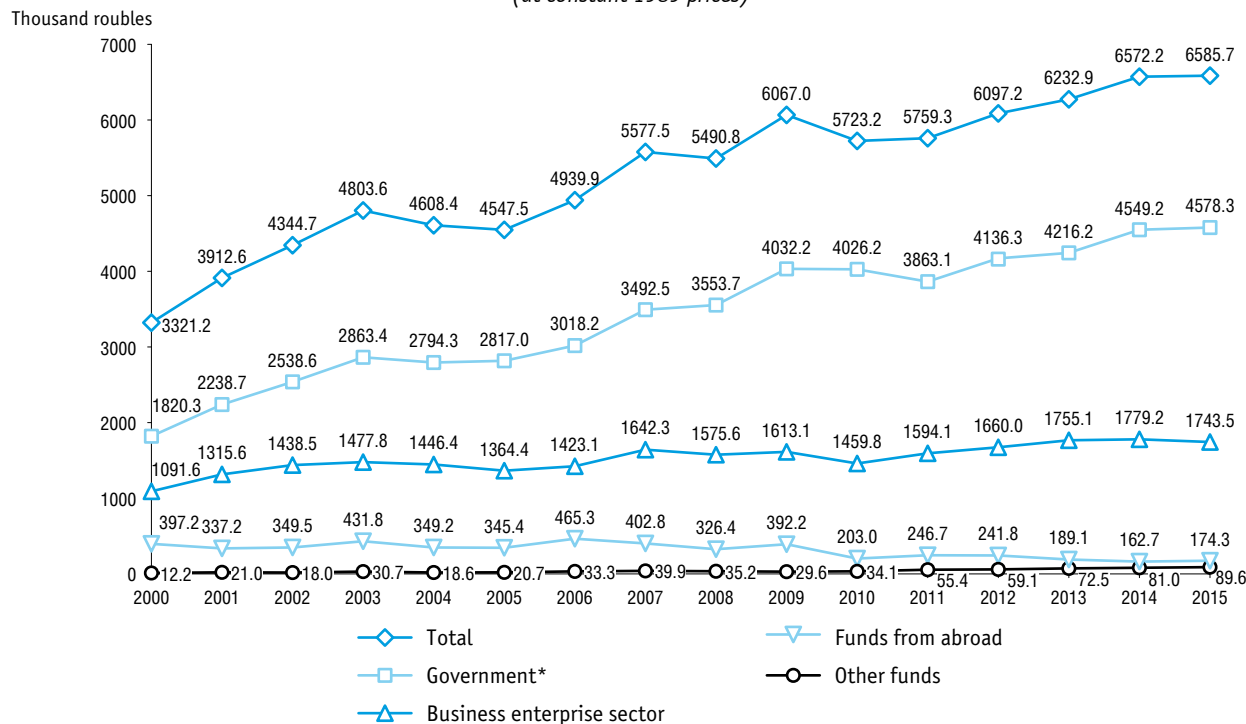
(continued)

	Gross domestic expenditure on R&D	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
	Per cent					
1995	100	61.5	33.6	0.3	0.03	4.6
2000	100	54.8	32.9	0.3	0.09	12.0
2001	100	57.2	33.6	0.3	0.2	8.6
2002	100	58.4	33.1	0.3	0.1	8.0
2003	100	59.6	30.8	0.5	0.2	9.0
2004	100	60.6	31.4	0.4	0.05	7.6
2005	100	61.9	30.0	0.4	0.03	7.6
2006	100	61.1	28.8	0.6	0.1	9.4
2007	100	62.6	29.4	0.6	0.1	7.2
2008	100	64.7	28.7	0.5	0.2	5.9
2009	100	66.5	26.6	0.4	0.1	6.5
2010	100	70.3	25.5	0.5	0.1	3.5
2011	100	67.1	27.7	0.8	0.2	4.3
2012	100	67.8	27.2	0.8	0.1	4.0
2013	100	67.6	28.2	1.0	0.1	3.0
2014	100	69.2	27.1	1.1	0.2	2.5
2015	100	69.5	26.5	1.2	0.2	2.6

* Including budget funds, government budget appropriations for higher education institutions; government sector institutions funds (including own intramural funds of the institutions (organisations)).

3.9. TRENDS IN GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS

(at constant 1989 prices)



* Including budget funds, government budget appropriations for higher education institutions; government sector institutions funds (including own intramural funds of the institutions (organisations)).

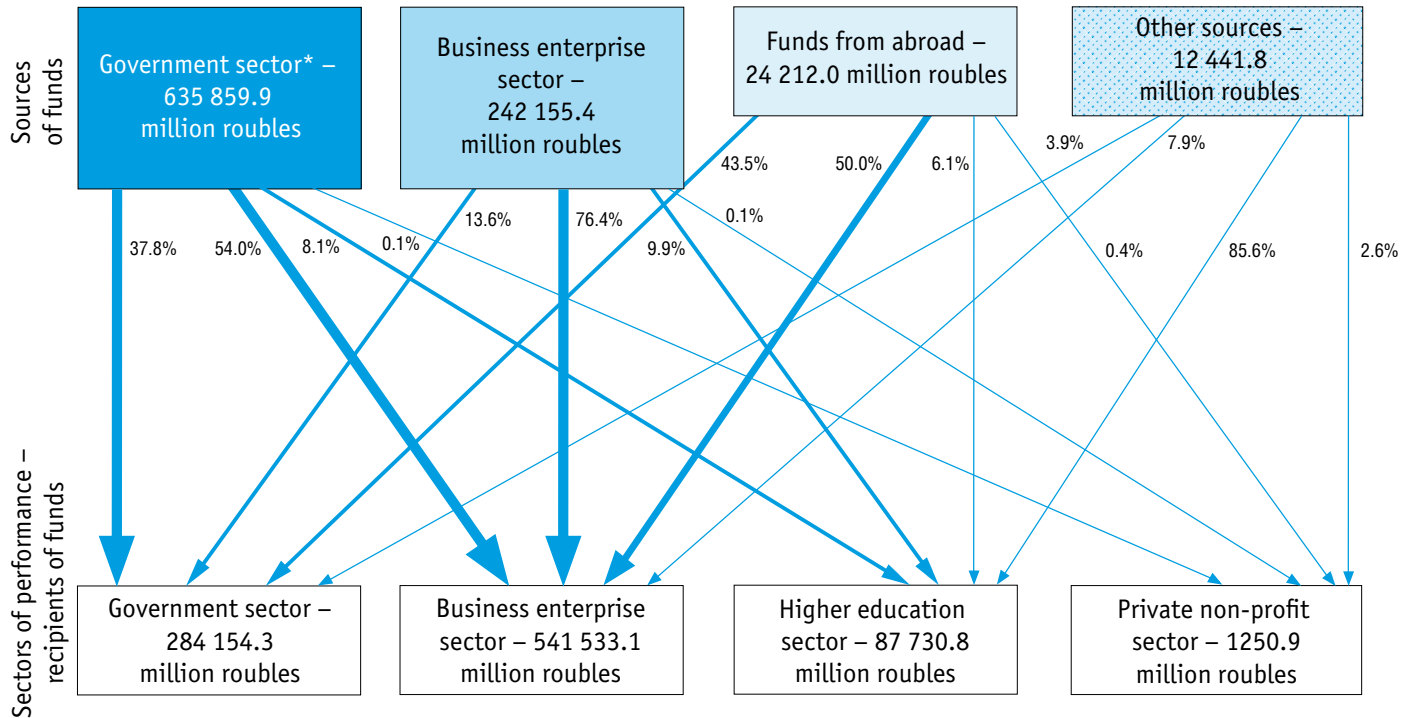
3.10. GRANTS, SUBSIDIES AND COMPETITIVE R&D FINANCING: 2015

	Total, <i>thousand roubles</i>	As a percentage of gross domestic expenditure on R&D
Gross domestic expenditure on R&D, total	914669057.2	100.0
Of which:		
budget subsidies financially supporting government assignments in the sphere of R&D	92260622.5	10.1
budget subsidies allocated to R&D and/or design and development activities	34143669.8	3.7
grants from funds supporting R&D, S&T and innovative activity	22725394.7	2.5
other types of competitive financing	79479326.3	8.7

3.11. GROSS DOMESTIC EXPENDITURE ON R&D FINANCED FROM ABROAD

	2013		2014		2015	
	Total, <i>thousand roubles</i>	Per cent	Total, <i>thousand roubles</i>	Per cent	Total, <i>thousand roubles</i>	Per cent
Gross domestic expenditure on R&D financed from abroad	22747024.5	100.0	20982432.9	100.0	24211969.2	100.0
Including						
International organisations	1424149.2	6.3	3104558.8	14.8	1287164.2	5.3
Government organisations of foreign countries	4582879.4	20.1	4769488.7	22.7	7221887.0	29.8
Business enterprises of foreign countries	15525544.5	68.3	12082110.8	57.6	14209467.4	58.7
Other foreign organisations (educational institutions, funds, non-profit organisations)	1214451.4	5.3	1026274.6	4.9	1493450.6	6.2

3.12. R&D FUNDING BY SECTOR OF PERFORMANCE: 2015



* Including budget appropriations, general university funds and government sector institutions funds (including own intramural funds of the institutions (organisations)).

3.13. GROSS DOMESTIC EXPENDITURE ON R&D BY FORM OF OWNERSHIP OF INSTITUTIONS

	1995	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
<i>At current prices, thousand roubles, 1995 – million roubles</i>											
Total	12149458.6	76697100.5	371080327.1	431073185.2	485834338.2	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
Russian ownership	12137095.6	74254897.9	362788255.0	422024862.3	478787821.5	514058161.4	598027432.9	685495275.4	725512775.4	831700355.3	897702466.4
Public ownership	9303329.4	56254567.1	268054481.0	315468440.4	362864344.6	394615118.0	448854863.1	495689326.0	510811584.2	588219503.3	570759794.5
Federal	9047499.6	55150426.2	263267216.7	310681404.3	358511516.2	389105256.8	441676795.3	487535217.5	502816626.9	577892310.2	559987658.5
Regional	255829.8	1099762.3	4674078.0	4675955.0	4181193.6	5396479.0	7152191.4	8124552.8	7994957.3	10327193.1	10772136.0
Municipal ownership	15214.6	50381.9	38024.6	58426.2	52807.3	50304.2	74152.5	65889.2	93873.2	78104.2	93960.3
Ownership of voluntary associations	35640.0	209229.3	589456.4	610938.9	525257.1	525085.2	711349.2	915629.8	1246181.6	1181906.2	2010818.4
Private ownership	265827.3	4948266.7	51427162.7	63511011.8	66857001.6	60263592.5	69577239.4	80608901.3	94280978.5	100226515.2	116626956.5
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	21631.3	6949.0	...**	...**	...**
Ownership of consumers' cooperatives*	...	1095.2	2635.3	2515.4	35877.1	36590.0	39286.2	2468.5	...**	–	20664.7
Mixed ownership	2517084.3	12791357.7	42676495.0	42373529.6	48452533.8	55954325.1	69203059.8	83947440.0	89367594.5	114333241.0	168031713.1
Mixed ownership with a share of public ownership	...	...	...	...	...	49557690.9	62421583.0	62059799.4	73525307.2	97555613.4	129154411.8
Other mixed ownership	...	...	...	...	...	...	6781476.8	21887640.6	15842287.3	16777627.6	38877301.3
Ownership of state corporations	...	...	...	...	...	2613146.4	9545851.4	24258671.6	29695934.9	27615092.9	40134256.9
Foreign ownership	336.7	117265.0	675533.7	711942.6	778685.9	1390905.3	1780045.0	2683049.2	7059984.4	7945428.4	5684831.2
Joint ownership (with both Russian and foreign participation)	12026.3	2324937.6	7616538.4	8336380.3	6267830.8	7928167.2	10619202.7	11691460.2	17224879.0	7881209.2	11281759.6

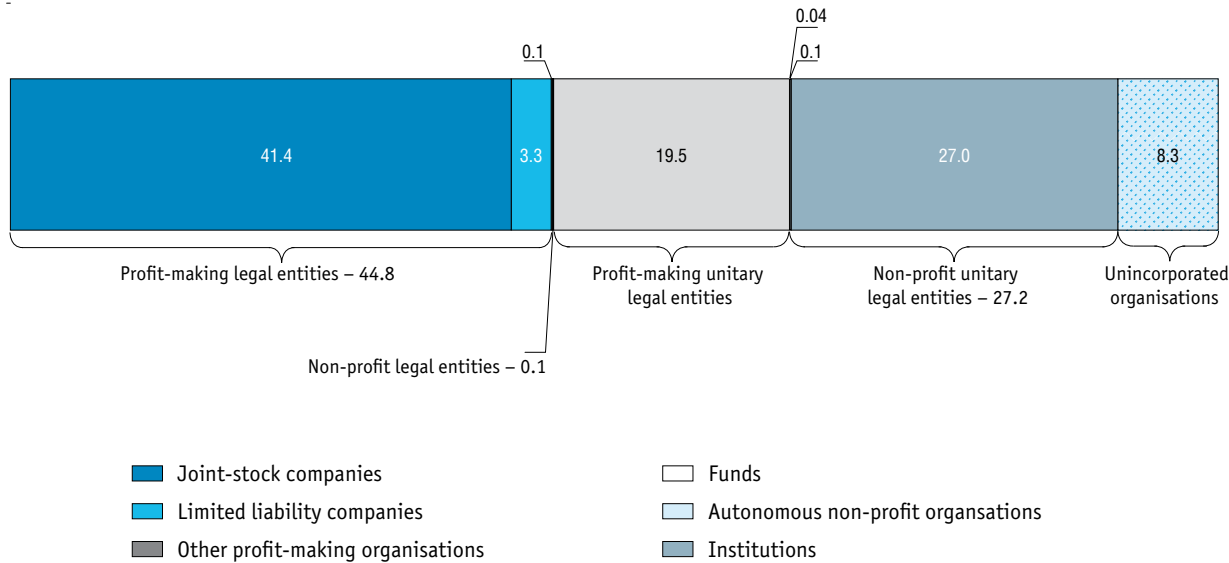
(continued)

	1995	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Per cent										
Total	100	100	100	100	100	100	100	100	100	100	100
Russian ownership	99.9	96.8	97.8	97.9	98.5	98.2	98.0	97.9	96.8	98.1	98.1
Public ownership	76.6	73.3	72.2	73.2	74.7	75.4	73.5	70.8	68.1	69.4	62.4
Federal	74.5	71.9	70.9	72.1	73.8	74.3	72.4	69.7	67.1	68.2	61.2
Regional	2.1	1.4	1.3	1.1	0.9	1.0	1.2	1.2	1.1	1.2	1.2
Municipal ownership	0.1	0.07	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ownership of voluntary associations	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2
Private ownership	2.2	6.5	13.9	14.7	13.8	11.5	11.4	11.5	12.6	11.8	12.8
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	0.004	0.001	...**	...**	...**
Ownership of consumers' cooperatives*	...	0.0	0.0	0.0	0.0	0.0	0.006	0.0	...**	—	0.002
Mixed ownership	20.7	16.7	11.5	9.8	10.0	10.7	11.3	12.0	11.9	13.5	18.4
Mixed ownership with a share of public ownership	...	...	...	...	...	9.5	10.2	8.9	9.8	11.5	14.1
Other mixed ownership	...	...	...	...	...	...	1.1	3.1	2.1	2.0	4.3
Ownership of state corporations	...	...	...	...	...	0.5	1.6	3.5	4.0	3.3	4.4
Foreign ownership	0.002	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.9	0.9	0.6
Joint ownership (with both Russian and foreign participation)	0.1	3.0	2.1	1.9	1.3	1.5	1.7	1.7	2.3	0.9	1.2

* Up to the year 2000 it was included into private and mixed Russian ownership.

** The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

3.14. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY LEGAL STRUCTURE AND STATUS OF INSTITUTIONS: 2015



3.15. GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF ECONOMIC ACTIVITY

(thousand roubles)

	2005	2009	2010	2011	2012	2013	2014	2015
Total	230785150.3	485834338.2	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
Agriculture, hunting and forestry	146783.8	247724.7	253871.9	289856.1	286476.4	392683.9	430205.2	583798.7
Fishing, aquaculture and related services	5559.6	2890.8	485.2	—	—	—	—	—
Mining and quarrying	584953.6	79238.0	55728.0	54729.0	42282.0	23211.4	...*	53955.0
Manufacturing	10631526.1	17009365.1	21372426.7	23051252.7	33489559.2	41036284.6	41125116.8	96197060.7
Electricity, gas and water supply	—	10085.0	8234.0	8654.0	—	...*	...*	33170.1
Construction	—	—	—	—	35200.7	...*	...*	...*
Hotels and restaurants	—	—	—	—	1074534.1	...*	—	...*
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	—	—	—	5468.0	—	—	—	...*
Transport and communications	29750.3	117993.5	143777.6	190798.7	6704377.7	2045971.5	6169713.1	584258.6
Real estate, renting and business activities	207643389.9	433962004.3	455185374.4	530882724.2	591315932.3	634954769.4	713774604.4	724449636.6
Of which:								
research and development	204907680.4	425872251.2	447596655.1	520913787.4	576874368.1	621911256.0	702052200.0	711713170.0
other services	2469504.1	6434826.7	5464671.8	7513061.1	9712021.4	8582367.7	8147046.4	7558585.6

(continued)

	2005	2009	2010	2011	2012	2013	2014	2015
Education	11076460.7	31254495.1	39254089.2	50880815.2	61985553.1	64847625.7	80366333.4	85381308.6
Of which higher education	11071971.7	31224588.5	39220988.4	50849957.2	61929787.4	64705330.3	80220750.8	85025299.0
Health and social services	71943.4	1080303.2	4758071.7	2082060.2	1961525.5	2372871.1	2401072.1	2927519.4
Other community, social and personal services	594782.9	2070238.5	2345175.2	2980322.5	2974343.8	2908651.8	3200835.2	3513767.1
Of which recreational, cultural and sporting activities	574352.3	2032341.9	2331388.6	2930451.3	2963837.0	2901432.2	3196933.0	3418087.3

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

3.16. GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF COSTS

	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
<i>At current prices, thousand roubles</i>										
Gross domestic expenditure on R&D	76697100.5	371080327.1	431073185.2	485834338.2	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
Intramural current expenditure	73873345.0	352917701.2	410864983.6	461006216.2	489450798.7	568386749.7	655061743.4	699948879.0	795407850.6	854288043.8
Salaries	27762734.2	157514386.8	193344895.7	217897038.1	241472234.1	275925134.3	307881674.7	334769102.6	372215515.4	398143690.1
Of which for R&D personnel*	24452200.6	137956617.2	170633861.4	189457703.8	211660690.5	239162179.8	268058587.8	293118611.5	325421624.4	346425420.7
Social security payments	10419152.6	34565859.1	40020294.9	43723470.6	47904606.9	68647474.6	75417597.8	82806275.3	92645219.2	104167630.5
Equipment	3433380.7	14027427.5	14604195.2	16144658.7	18067655.4	20065178.2	25365780.5	23529482.7	26062433.8	28480160.0
Other material costs	17470855.0	83426976.6	72945529.7	89861803.2	89279048.7	101591855.4	123689963.6	134096570.4	158082737.1	157810431.8
Other current costs	14787222.5	63383051.2	89950068.1	93379245.6	92727253.6	102157107.2	122706726.8	124747448.0	146401945.1	165686131.4
Capital expenditure	2823755.5	18162625.9	20208201.6	24828122.0	33926435.2	42039930.9	44808041.4	49848759.8	52119142.3	60381013.4
Land and buildings	496202.4	3577647.3	5474654.9	4298550.9	8077521.7	8421252.7	11692714.0	8721163.4	9987854.6	10029243.3
Equipment	1448665.0	11689028.2	10775180.6	15438763.7	19887596.3	23968272.7	25459703.1	27306873.6	29421964.1	33807469.6
Other capital expenditure	878888.1	2895950.4	3958366.1	5090807.4	5961317.2	9650405.5	7655624.3	13820722.8	12709323.6	16544300.5

(continued)

	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Per cent									
Gross domestic expenditure on R&D	100	100	100	100	100	100	100	100	100	100.0
Intramural current expenditure	96.3	95.1	95.3	94.9	93.5	93.1	93.6	93.4	93.9	93.4
Salaries	36.2	42.4	44.9	44.9	46.1	45.2	44.0	44.6	43.9	43.5
Of which for R&D personnel*	31.9	37.2	39.6	39.0	40.4	39.2	38.3	39.1	38.4	37.9
Social security payments	13.6	9.3	9.3	9.0	9.2	11.2	10.8	11.0	10.9	11.4
Equipment	4.5	3.8	3.4	3.3	3.5	3.3	3.6	3.1	3.1	3.1
Other material costs	22.8	22.5	16.9	18.5	17.1	16.6	17.7	17.9	18.7	17.3
Other current costs	19.3	17.1	20.9	19.2	17.7	16.7	17.5	16.6	17.3	18.1
Capital expenditure	3.7	4.9	4.7	5.1	6.5	6.9	6.4	6.6	6.1	6.6
Land and buildings	0.6	1.0	1.3	0.9	1.5	1.4	1.7	1.2	1.2	1.1
Equipment	1.9	3.1	2.5	3.2	3.8	3.9	3.6	3.6	3.5	3.7
Other capital expenditure	1.1	0.8	0.9	1.0	1.1	1.6	1.1	1.8	1.5	1.8

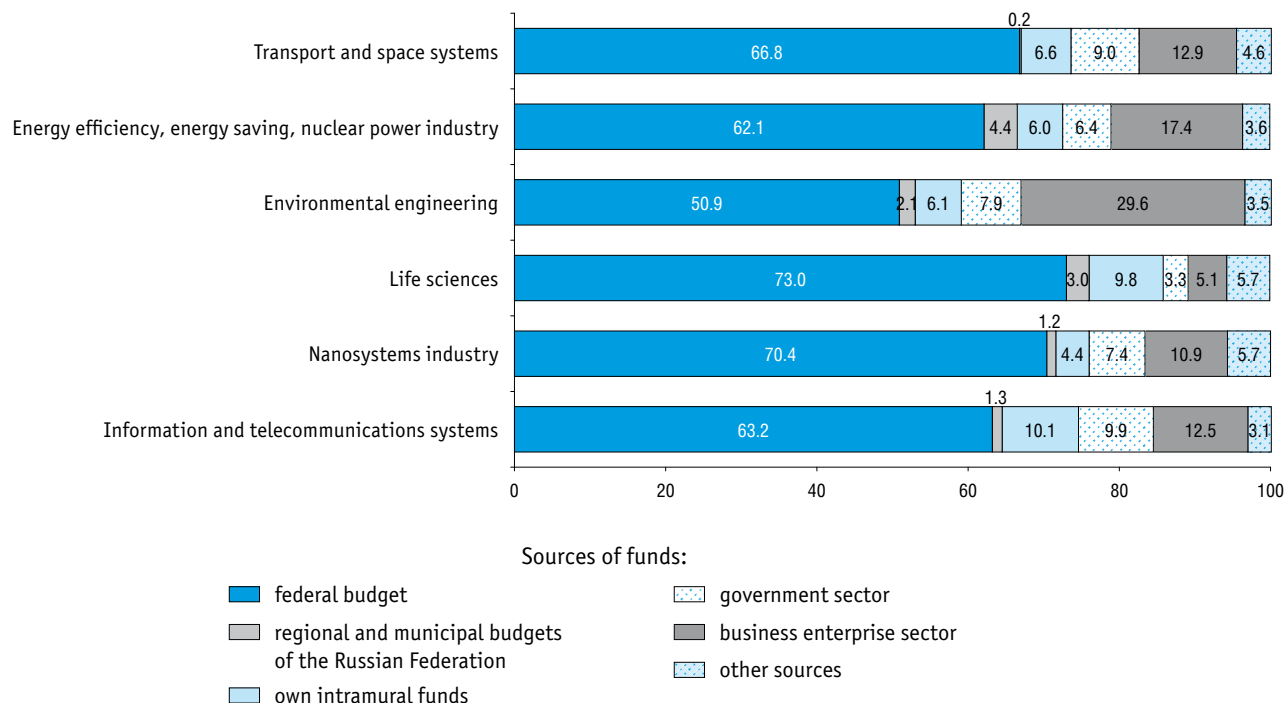
* Excluding secondary job employees and those working under labour contracts.

3.17. GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SOURCE OF FUNDS: 2015

(thousand roubles)

	Total	Information and telecommu- nications systems	Nanosystems industry	Life sciences	Environmental engineering	Energy efficiency, energy saving, nuclear power industry	Transport and space systems
Gross domestic expenditure on R&D by S&T priority areas	627405512.5	74555756.9	25421721.1	43775675.6	46422668.2	86252476.9	219193146.9
Federal budget	390638801.2	47107055.3	17906786.9	31976320.4	23613079.1	53579658.9	146339549.0
Regional and municipal budgets	8298477.1	953765.4	299436.7	1317304.5	952035.0	3826466.6	528502.1
Own intramural funds	59988438.9	7500066.4	1129333.0	4296083.0	2830371.1	5151860.1	14555306.5
Government sector	50411041.1	7398427.0	1873956.8	1423921.4	3680352.3	5525434.8	19618928.1
Business enterprise sector	93281440.0	9310291.3	2764190.7	2248627.3	13722237.9	15046374.9	28168357.0
Other sources	24787314.2	2286151.5	1448017.0	2513419.0	1624592.8	3122681.6	9982504.2

3.18. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SOURCE OF FUNDS: 2015



3.19. GROSS DOMESTIC EXPENDITURE ON R&D BY SOCIO-ECONOMIC OBJECTIVE

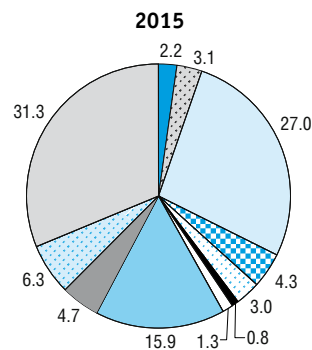
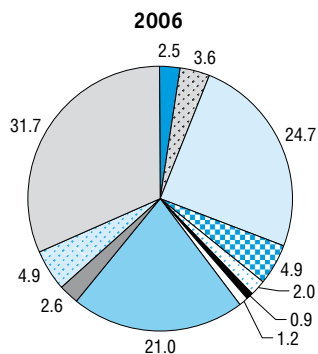
(thousand roubles)

	2006	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D	288805211.5	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
Economic development	103033497.6	183113782.3	231941668.2	295901906.0	303849005.2	319943400.5	335508245.3
Agriculture, forestry and fishing	7248977.0	12090814.9	15011619.7	16151602.6	18162639.9	19356066.3	20507885.2
Production, distribution and rational use of energy	10267046.6	19174764.6	19913673.7	30798200.6	32391136.1	30009786.7	28233810.5
Manufacturing	71319151.3	126029410.7	156695798.9	200459644.4	211581275.8	225973823.4	247190324.1
Increasing economic efficiency and technological level of production	8331516.8	14916168.9	19904782.4	22472542.8	23766954.4	26183678.7	27970190.2
Extraction and processing of non-energy minerals	628547.3	1279265.4	1359844.0	1863605.2	2857681.5	1893285.1	2979762.1
Manufacture of chemicals and chemical products	4194564.2	5839135.5	6835610.4	9155732.6	9253596.1	12102652.2	18046159.1
Manufacture of motor vehicles and other transport vehicles	14450931.1	21495410.4	25640612.6	32391176.2	43571684.0	37432847.4	38496344.6
Electronics industry, manufacture of radio, television and communication equipment and apparatus	9281563.7	13389386.0	17546855.7	26449997.0	30121503.4	30917362.1	34152557.2
Software development	3355339.6	6740442.6	7701782.0	8932282.7	10343013.7	8906139.6	10935776.1
Manufacture of electrical machinery and apparatus	1292927.0	2879253.1	3179319.1	5235647.6	10666259.5	6852593.2	6855694.7
Manufacture of instruments and appliances	6600437.6	13466912.8	20205983.0	29563984.4	26441262.5	25964146.5	24545740.1
Manufacture of other machinery and equipment	6965389.1	13654259.2	15485756.9	15781575.2	14251449.9	21053098.6	19618563.5
Manufacture of wearing apparel, textiles and leather	54077.2	97483.3	106648.1	254582.3	116171.9	125925.2	152999.3
Manufacture of food products and beverages	296729.6	565348.2	565873.8	758191.9	1043282.0	777287.7	883049.0
Other sectors of manufacturing industry	15867128.1	31706345.3	38162730.9	47600326.5	39148416.9	53764807.1	62553488.2

(continued)

	2006	2010	2011	2012	2013	2014	2015
Construction	2697184.2	5513681.4	7294997.0	8504203.4	5514071.6	7302858.5	4100727.2
Transport	9011178.7	12686004.3	22041615.8	23986235.6	26950369.3	25052775.9	28936996.8
Communication	1709581.2	6704734.7	9211899.0	14147246.2	7577748.3	10809004.6	5137035.8
Infrastructure and general planning of urban and rural settlements	430140.7	354546.0	916966.4	912451.2	702102.6	754005.3	720423.3
Services sector	350237.9	559825.7	855097.7	942322.0	969661.6	685079.8	681042.4
Social objectives	11954593.3	24966176.4	29640390.9	33070785.7	39876895.8	45328439.6	47512609.4
Environment control and environmental conservation	2595076.2	5950018.6	6638173.2	6972125.5	6139294.7	7690689.6	7698790.1
Medical and other public health care activities	5897030.0	14373675.7	17100379.3	19694713.1	22382779.3	27197492.2	27779185.8
Social development and community building	3462487.1	4642482.1	5901838.4	6403947.1	11354821.8	10440257.8	12034633.5
General advancement of science	60629124.4	104294714.1	111947458.3	117873370.5	130695141.4	136414580.0	145154435.8
Exploration and exploitation of the Earth and the atmosphere	7577493.4	19821817.2	20390660.8	25474648.5	32889936.2	39068691.1	43206894.0
Peaceful uses of outer space	14018574.9	27503697.9	35752455.2	37558965.0	51558366.4	48996185.8	57441295.9
Other expenditure	91591927.9	163677046.0	180754047.2	189990109.1	190928293.8	257775695.9	285845576.8

3.20. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SOCIO-ECONOMIC OBJECTIVE



■ Agriculture
 Energy industry
 Industrial development
 Other economic objectives
 Public health
 Environment control and environmental conservation

Social development
 General advancement of science
 Exploration and exploitation of the Earth and the atmosphere
 Peaceful uses of outer space
 Other expenditure

3.21. INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY AND FIELD OF SCIENCE AND TECHNOLOGY

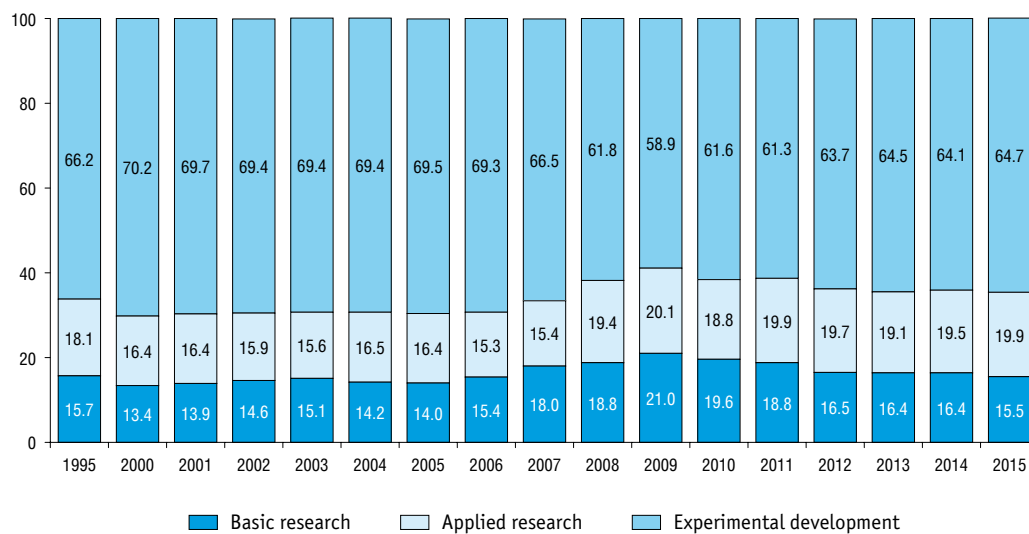
(thousand roubles)

	Total	Natural sciences	Engineering and technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2005							
Intramural current expenditure on R&D	221119537.6	34579040.8	171109626.3	4571313.8	4159368.3	4628535.6	2071652.8
Basic research	31022855.8	19345182.8	4579039.5	1865239.8	1947227.1	1723405.3	1562761.3
Applied research	36360266.9	8860755.5	21725918.2	2051910.3	1409317.9	1957292.2	355072.8
Experimental development	153736414.9	6373102.5	144804668.6	654163.7	802823.3	947838.1	153818.7
2010							
Intramural current expenditure on R&D	489450798.7	96010015.2	348621966.4	15462300.4	8887624.5	13752461.7	6716430.5
Basic research	95881364.3	50550000.6	22866475.2	6378644.4	4766037.6	6074153.0	5246053.5
Applied research	92010677.2	27202686.8	46841680.2	7900476.3	2582521.1	6199410.7	1283902.1
Experimental development	301558757.2	18257327.8	278913811.0	1183179.7	1539065.8	1478898.0	186474.9
2012							
Intramural current expenditure on R&D	655061743.4	118944091.0	476478373.9	20242776.7	10855458.7	18732780.1	9808263.0
Basic research	108160904.7	62038278.0	20496211.5	7623680.5	4587407.0	6563320.3	6852007.4
Applied research	129304402.1	32656475.6	69302228.8	10852676.9	4503917.6	9824213.5	2164889.7
Experimental development	417596436.6	24249337.4	386679933.6	1766419.3	1764134.1	2345246.3	791365.9

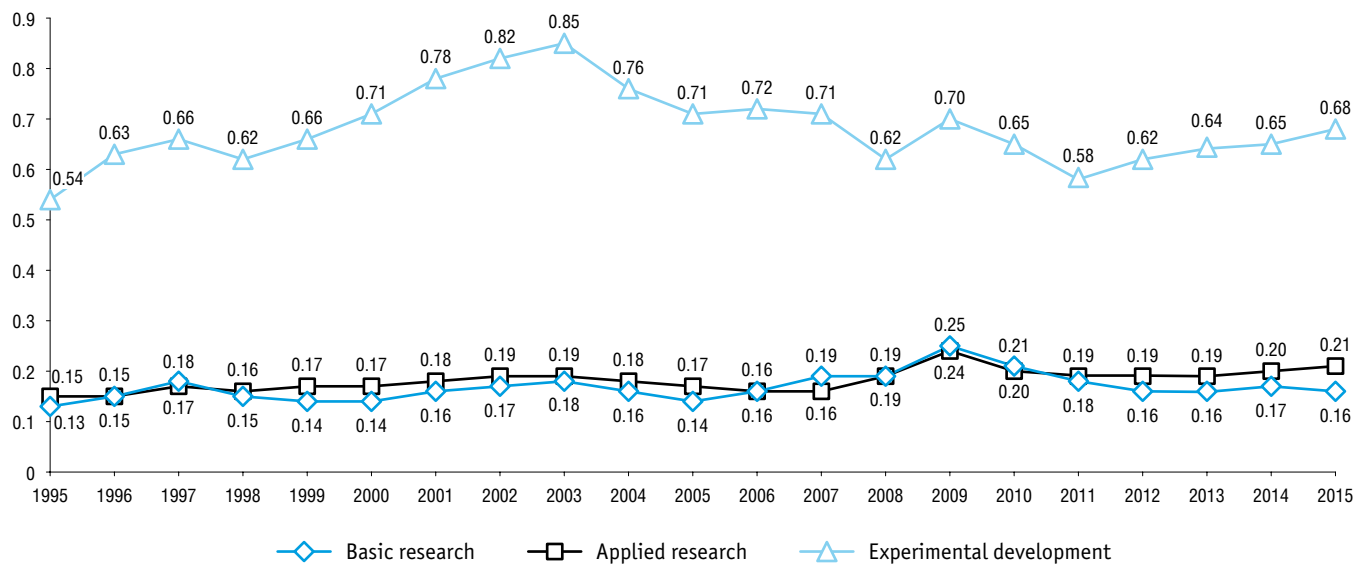
(continued)

	Total	Natural sciences	Engineering and technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2013							
Intramural current expenditure on R&D	699948879.0	124384149.8	511559101.0	21833262.2	11504657.6	20769449.3	9898259.1
Basic research	114829117.8	62710077.9	22645513.3	9046385.0	4845910.5	8500037.6	7081193.5
Applied research	133787976.7	36709680.9	69787265.9	10611446.9	4651482.5	9865521.3	2162579.2
Experimental development	451331784.5	24964391.0	419126321.8	2175430.3	2007264.6	2403890.4	654486.4
2014							
Intramural current expenditure on R&D	795407850.6	144536189.4	578160024.6	25016451.2	13156185.8	22959524.1	11579475.5
Basic research	130618045.6	72493481.3	22849372.1	10263113.4	7535996.1	9379368.0	8096714.7
Applied research	155231401.5	41403579.4	84622052.5	12393369.8	3703331.5	10613069.7	2495998.6
Experimental development	509558403.5	30639128.7	470688600.0	2359968.0	1916858.2	2967086.4	986762.2
2015							
Intramural current expenditure on R&D	854288043.8	148980051.6	624144576.7	29945902.1	13664068.9	23961543.0	13591901.5
Basic research	132064934.3	75057491.5	20557380.6	9996433.7	8047617.4	9160226.3	9245784.8
Applied research	169654641.2	43503918.7	90396242.3	16630952.5	3699011.9	12207246.2	3217269.6
Experimental development	552568468.3	30418641.4	513190953.8	3318515.9	1917439.6	2594070.5	1128847.1

3.22. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



3.23. INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT



3.24. AVERAGE MONTHLY SALARY OF R&D PERSONNEL

	1995	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average monthly salary, <i>roubles, 1995 – thousand roubles</i>	305.3	6918.4	8672.0	14683.4	19263.3	22104.3	25043.5	28387.5	32539.9	35618.8	39549.3	41511.8
As a percentage of the salary:												
in the national economy (=100%)	64.6	102.7	101.4	108.0	111.4	118.6	119.5	121.5	122.2	119.6	121.7	122.2
in manufacturing (=100%)	67.3	101.0	103.0	114.0	120.0	133.3	131.3	130.3	132.8	131.7	134.0	130.4
in construction (=100%)	52.0	94.7	95.9	102.4	103.7	122.0	118.3	119.9	125.4	128.6	134.7	138.9



4. R&D Fixed Assets

4.1. R&D FIXED ASSETS

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
At current prices													
Fixed assets – total, million roubles, 1995 – billion roubles	85087.6	237564.4	362421.8	399515.9	581965.9	612318.3	705048.1	741512.1	859318.0	914572.2	1086445.9	1277531.8	1498990.8
Per one employee, thousand roubles, 1995 – million roubles	80.2	267.6	431.8	491.3	726.4	804.4	949.6	1006.8	1168.7	1259.2	1494.4	1744.6	2028.8
Per one researcher, thousand roubles, 1995 – million roubles	164.0	557.7	902.8	1021.5	1481.4	1629.4	1909.5	2010.0	2292.8	2454.4	2944.2	3416.7	3950.8
Machinery and equipment, million roubles, before 1995 – billion roubles	26505.8	66938.3	120533.3	142154.7	196844.6	226391.7	288345.5	300165.9	348511.4	398562.4	466609.0	562860.4	676194.6
Per one employee, thousand roubles, 1995 – million roubles	25.0	75.4	143.6	174.8	245.7	297.4	388.4	407.5	474.0	548.7	641.8	768.6	915.2
Per one researcher, thousand roubles, 1995 – million roubles	51.1	157.1	300.3	363.5	501.1	602.4	780.9	813.6	929.9	1069.6	1264.5	1505.4	1782.2
Machinery and equipment under 5 years, million roubles	...	...	...	...	...	...	...	...	...	169757.0	205062.6	257269.1	320676.7
As a percentage of the total value of machines and equipment	...	...	...	...	...	...	...	...	...	42.6	43.9	47.5	47.4

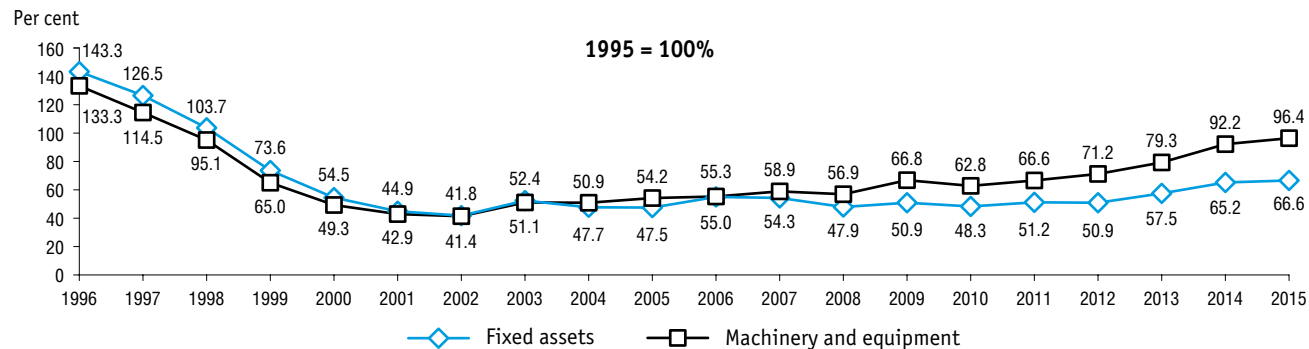
(continued)

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
At constant 1995 prices*													
Fixed assets – total, million roubles, 1995 – billion roubles	85087.6	46336.0	40589.3	40383.7	46184.1	40766.9	43302.3	41103.8	43540.6	43348.8	48950.0	55453.2	56627.7
Per one employee, thousand roubles, 1995 – million roubles	80.2	52.2	48.4	49.7	57.6	53.6	58.3	55.8	59.2	59.7	67.3	73.3	76.6
Per one researcher, thousand roubles, 1995 – million roubles	164.0	108.8	101.1	103.3	117.6	108.6	117.3	111.4	116.2	116.3	132.7	143.5	149.3
Machinery and equipment, million roubles, 1995 – billion roubles	26505.8	13056.0	13499.1	14369.2	15621.3	15072.7	17709.5	16638.9	17658.7	18891.0	21023.2	24431.8	25544.7
Per one employee, thousand roubles, 1995 – million roubles	25.0	14.7	16.1	17.7	19.5	19.8	23.9	22.6	24.0	26.0	28.9	33.4	34.6
Per one researcher, thousand roubles, 1995 – million roubles	51.1	30.7	33.6	36.7	39.8	40.1	48.0	45.1	47.1	50.7	57.0	65.3	67.3
Machinery and equipment under 5 years, million roubles	...	...	...	...	...	...	...	...	...	8046.1	9239.1	11167.2	12114.3

* Calculated on the basis of the deflator for the gross fixed capital formation.

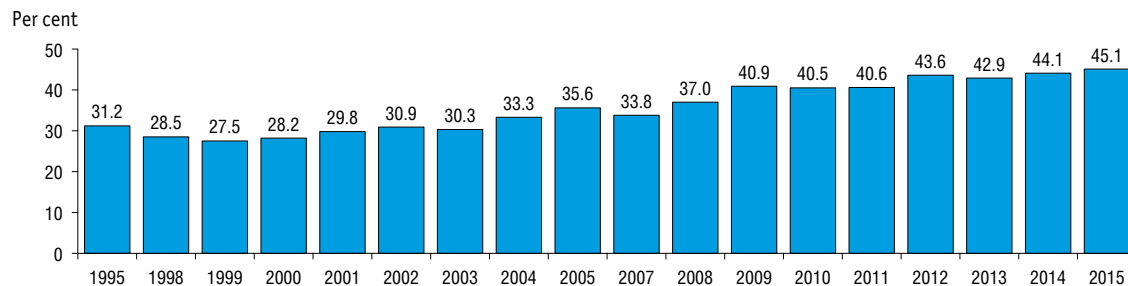
4.2. TRENDS IN R&D FIXED ASSETS VALUE*

(at constant 1995 prices)



* Calculated on the basis of the deflator for the gross fixed capital formation.

4.3. MACHINERY AND EQUIPMENT AS A PERCENTAGE OF THE TOTAL R&D FIXED ASSETS VALUE



4.4. R&D FIXED ASSETS BY OWNERSHIP OF INSTITUTIONS

(million roubles, 1995 – billion roubles)

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fixed assets													
Total	85087.6	237564.4	362421.8	399515.9	581965.9	612318.3	705048.1	741512.1	859318.0	914572.2	1086445.9	1235780.3	1498990.8
Russian ownership	85081.2	232793.0	356206.2	393181.0	570760.1	600596.0	696133.5	725165.1	847942.2	897838.2	1052994.8	1218842.6	1469213.6
Public ownership	71686.4	194659.0*	311757.9	344693.4	504967.3	537366.1	619151.2	635491.6	736631.7	757157.9	886578.4	1005741.7	1126242.5
Federal	70561.9	191972.3	304821.5	336223.9	486643.7	518920.0	574713.9	617118.2	712172.1	733671.7	861801.5	960098.3	1090290.3
Regional	1124.5	2686.3	6936.4	8469.5	17526.8	17479.4	43454.1	18110.1	24452.1	23477.9	24776.9	45643.4	35952.3
Municipal ownership	190.0	541.7	3.9	28.2	32.9	34.7	40.7	35.9	74.7	17.3	53.0	38.0	104.4
Ownership of voluntary associations	77.5	221.8	34.1	38.9	90.0	85.4	82.4	82.1	98.7	164.4	372.6	495.7	832.5
Private ownership	1306.4	10499.1	10468.3	17478.8	25338.8	26957.6	30709.8	43615.5	49833.4	56938.0	64420.2	80213.8	107275.4
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	18.1	17.0	...***	...***	...***
Ownership of consumers' cooperatives**	...	0.09	1.0	0.9	0.9	0.9	1.6	1.7	5.5	—	—	...***	28.9
Mixed ownership	11820.9	26871.3	33941.0	30940.7	40330.3	36151.4	46147.9	42862.9	52606.5	59170.5	68104.5	93511.6	157314.6
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	38571.0	47524.3	47722.7	56261.7	72454.4	117386.6
Other mixed ownership	...	...	...	...	...	...	...	...	5082.1	11447.8	11842.7	21057.3	39928.0
Ownership of state corporations	...	...	...	...	...	...	...	3075.4	8673.7	24373.1	33451.8	38817.0	77404.6
Foreign ownership	0.04	49.0	75.5	114.9	225.1	216.2	124.3	1131.5	1063.7	1177.8	3064.9	2571.1	6198.6
Joint ownership (with both Russian and foreign participation)	6.4	4722.4	6140.1	6220.1	10980.6	11506.0	8790.3	15215.5	10312.1	15556.2	30386.2	14366.6	23578.6

(continued)

	1995	2000	2004	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Machinery and equipment													
Total	26505.8	66938.3	120533.3	142154.7	196844.6	226391.7	288345.5	300165.9	348511.4	398562.4	466609.0	541617.9	676194.6
Russian ownership	26503.0	65631.5	118511.7	140294.5	191984.4	221221.1	283264.4	290440.4	341846.2	390464.6	457596.7	533892.2	659628.5
Public ownership	21632.0	53434.4*	102288.6	121662.2	164900.6	194059.9	250646.7	256172.4	293528.4	332053.6	382612.7	433814.9	503877.8
Federal	21340.3	52750.5	98656.7	117529.4	156807.8	185556.4	215954.3	248766.8	284876.3	323644.7	371352.8	422330.3	487747.4
Regional	291.7	683.5	3631.9	4132.8	8038.5	8379.1	34654.2	7284.9	8645.6	8401.9	11259.9	11484.6	16130.4
Municipal ownership	113.0	176.0	2.8	4.7	7.6	11.3	25.5	6.2	17.0	4.4	6.7	7.2	26.0
Ownership of voluntary associations	32.3	41.6	20.2	20.4	61.7	56.2	47.0	49.5	69.9	62.6	98.2	134.7	209.1
Private ownership	353.5	4235.7	4297.6	8094.0	10656.1	12278.4	15307.8	17150.5	22907.4	26610.2	30837.6	41712.6	50474.8
Ownership of Russian citizens permanently living abroad	...	...	...	...	...	...	...	...	17.0	16.0	...***	...***	...***
Ownership of consumers' cooperatives**	...	0.09	0.2	0.2	0.2	0.2	0.9	1.0	4.2	—	—	...***	7.0
Mixed ownership	4372.2	7743.7	11902.3	10513.1	16358.2	14815.2	17236.5	15944.0	21883.9	22090.9	30297.8	41440.4	70093.0
Mixed ownership with a share of public ownership	...	...	...	...	...	...	...	13870.9	19476.7	16689.3	25209.2	31476.5	52907.6
Other mixed ownership	...	...	...	...	...	...	...	...	2407.1	5401.6	5088.6	9964.0	17185.5
Ownership of state corporations	...	...	...	...	...	...	...	1116.7	3418.5	9627.0	13730.4	16767.1	34931.1
Foreign ownership	0.03	48.2	57.2	61.0	128.3	119.6	83.7	630.0	611.0	438.0	668.9	975.0	2958.5
Joint ownership (with both Russian and foreign participation)	2.8	1258.6	1964.4	1792.2	4731.9	5050.9	4997.4	9095.5	6054.2	7659.8	8343.4	6750.7	13607.6

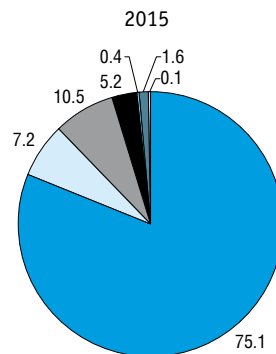
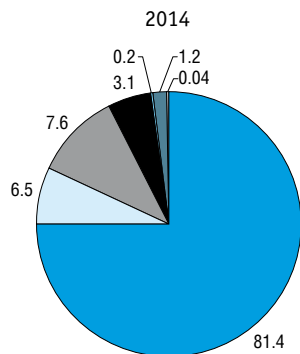
* The sum of items may differ from the total because some institutions have shared ownership.

** Up to the year 2000 it was included into private and mixed Russian ownership.

*** The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

4.5. PERCENTAGE DISTRIBUTION OF R&D FIXED ASSETS BY OWNERSHIP OF INSTITUTIONS

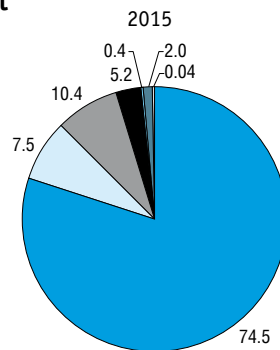
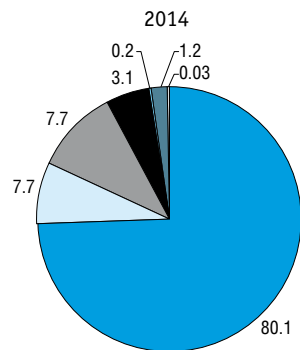
Fixed assets



Ownership:

- public ownership
- private ownership
- mixed ownership
- ownership of state corporations
- foreign ownership
- joint ownership (with both Russian and foreign participation)
- other ownership

Machinery and equipment



4.6. R&D FIXED ASSETS BY TYPE OF ECONOMIC ACTIVITY

(million roubles)

	Fixed assets			Machinery and equipment		
	2013	2014	2015	2013	2014	2015
Total	1086445.9	1235780.3	1498990.8	466609.0	541617.9	676194.6
Agriculture, hunting and forestry	846.9	1389.8	1239.0	164.6	323.2	346.6
Fishing, aquaculture and related services	—	—	—	—	—	—
Mining and quarrying	12.5	—	347.4	10.4	—	220.2
Manufacturing	65763.2	82216.7	168166.4	31652.9	41598.8	83071.8
Electricity, gas and water supply	—	...*	735.5	—	...*	98.8
Construction	...*	...*	...*	...*	...*	...*
Hotels and restaurants	...*	—	—	...*	—	—
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	—	—	...*	—	—	...*
Transport and communications	636.9	688.4	243.2	329.8	345.6	164.5
Real estate, renting and business activities	849363.9	965527.1	1095270.3	364450.3	425416.3	494779.2
Of which:						
research and development	830424.8	946522.9	1075073.9	357486.9	418474.8	483186.2
other services	12077.8	11830.5	14757.6	4508.0	4258.4	8382.7
Education	142890.6	158770.1	205562.2	58534.9	62501.3	86336.6
Of which higher education	142757.2	158691.5	205499.4	58514.6	62488.2	86319.6
Health and social services	22045.5	23652.8	23371.1	9594.6	10882.5	10340.0
Other community, social and personal services	3365.5	3483.6	3124.5	407.0	511.2	433.4
Of which recreational, cultural and sporting activities	3355.5	3481.2	3105.3	399.6	508.8	415.4

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).



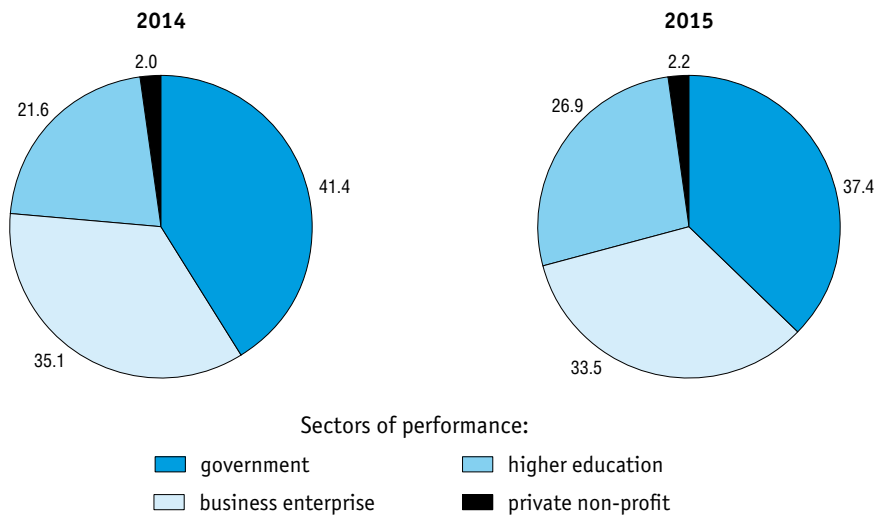
5. Sectors of R&D Performance

5.1. Composite Indices

5.1.1. R&D INSTITUTIONS BY SECTOR OF PERFORMANCE

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
1995	4059	1193	2345	511	10
2000	4099	1247	2278	526	48
2002	3906	1218	2110	531	47
2003	3797	1233	1990	526	48
2004	3656	1230	1851	533	42
2005	3566	1282	1703	539	42
2006	3622	1341	1682	540	59
2007	3957	1483	1742	616	116
2008	3666	1429	1540	603	94
2009	3536	1406	1446	603	81
2010	3492	1400	1405	617	70
2011	3682	1457	1450	696	79
2012	3566	1465	1362	662	77
2013	3605	1495	1269	762	79
2014	3604	1491	1265	777	71
2015	4175	1560	1400	1124	91

5.1.2. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS BY SECTOR OF PERFORMANCE



5.1.3. R&D PERSONNEL BY SECTOR OF PERFORMANCE AND OCCUPATION

(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1061044	887729	813207	807066	801135	761252	742433	736540	735273	726318	727029	732274	738857
Researchers	518690	425954	391121	388939	392849	375804	369237	368915	374746	372620	369015	373905	379411
Technicians	101371	75184	65982	66031	64569	60218	60045	59276	61562	58905	61401	63168	62805
Supporting staff	274925	240506	215555	213579	208052	194769	186995	183713	178494	175790	175365	173554	174056
Others	166058	146085	140549	138517	135665	130461	126156	124636	120471	119003	121248	121647	122585
Government sector	282166	255850	272718	274802	272255	260854	260360	259007	254896	271466	261869	263712	265429
Researchers	146342	129725	139378	138728	138169	132261	132955	131734	128672	136442	132117	132701	134794
Technicians	27178	25085	25462	25667	26545	24531	24554	24009	26960	28094	27777	27761	27090
Supporting staff	66226	59706	61448	62482	61031	58591	56846	56530	54176	60067	56795	56744	56552
Others	42420	41334	46430	47925	46510	45471	46005	46734	45088	46863	45180	46506	46993
Business enterprise sector	726568	590646	496706	486613	478401	451532	432415	423112	419752	394182	405268	405529	408802
Researchers	336671	267640	221445	218702	219632	209579	201668	197785	202185	192285	193736	196320	198123
Technicians	70180	46535	36837	36315	33340	31230	30613	30063	28235	26720	28920	29452	29850
Supporting staff	201122	175261	147980	144966	140507	129496	123814	120485	116829	106306	109691	107215	108230
Others	118595	101210	90444	86630	84922	81227	76320	74779	72503	68871	72921	72542	72599
Higher education sector	52065	40787	43500	44473	49059	47595	48498	53290	59454	59469	59247	62400	63870
Researchers	35508	28325	30111	30793	34162	33160	33847	38640	43121	43103	42692	44427	45967
Technicians	4010	3509	3658	3972	4606	4349	4778	5095	6256	3998	4670	5939	5836
Supporting staff	7520	5463	6098	5945	6282	6520	6198	6564	7345	9264	8828	9538	9217
Others	5027	3490	3633	3763	4009	3566	3675	2991	2732	3104	3057	2496	2850
Private non-profit sector	245	446	283	1178	1420	1271	1160	1131	1171	1201	645	633	756
Researchers	169	264	187	716	886	804	767	756	768	790	470	457	527
Technicians	3	55	25	77	78	108	100	109	111	93	34	16	29
Supporting staff	57	76	29	186	232	162	137	134	144	153	51	57	57
Others	16	51	42	199	224	197	156	132	148	165	90	103	143

5.1.4. R&D PERSONNEL BY SECTOR OF PERFORMANCE AND EDUCATIONAL ATTAINMENT (headcount)

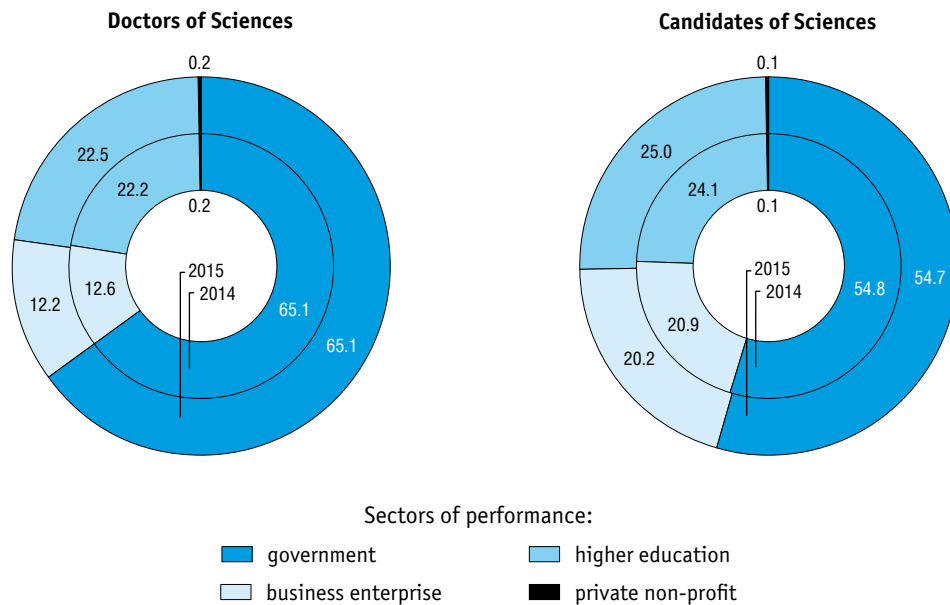
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
R&D personnel					
2005	813207	272718	496706	43500	283
2012	726318	271466	394182	59469	1201
2013	727029	261869	405268	59247	645
2014	732274	263712	405529	62400	633
2015	738857	265429	408802	63870	756
Higher Education					
2005	501718	177676	288649	35159	234
2012	508057	191193	263555	52334	975
2013	512017	187058	271434	52927	598
2014	522726	189447	276675	56009	595
2015	537118	194608	283664	58144	702
Secondary vocational education					
2005	134222	40495	89265	4430	32
2012	99503	35958	60764	2673	108
2013	97867	33629	61575	2625	38
2014	95564	33699	59564	2274	27
2015	95640	33163	60370	2071	36
Other education					
2005	177267	54547	118792	3911	17
2012	118758	44315	69863	4462	118
2013	117145	41182	72259	3695	9
2014	113984	40566	69290	4117	11
2015	106099	37658	64768	3655	18

5.1.5. RESEARCHERS WITH ACADEMIC DEGREES BY SECTOR OF PERFORMANCE

(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Researchers with academic degrees	116465	105911	99428	99507	103725	101049	101275	105114	109493	109330	108248	109598	111533
Doctors of Sciences	19330	21949	23410	23880	25213	25140	25295	26789	27675	27784	27485	27969	28046
Candidates of Sciences	97135	83962	76018	75627	78512	75909	75980	78325	81818	81546	80763	81629	83487
Government sector	61062	58901	60066	60054	61707	60369	61309	61194	61605	63092	62837	62944	63906
Doctors of Sciences	13358	14987	16511	16766	17415	17326	17554	17646	17789	18181	18184	18198	18264
Candidates of Sciences	47704	43914	43555	43288	44292	43043	43755	43548	43816	44911	44653	44746	45642
Business enterprise sector	41207	34775	26661	25958	26257	24844	23861	23169	23045	21758	20955	20595	20270
Doctors of Sciences	4348	4806	4222	4108	4446	4284	4093	3987	4018	3767	3622	3511	3413
Candidates of Sciences	36859	29969	22439	21850	21811	20560	19768	19182	19027	17991	17333	17084	16857
Higher education sector	14162	12113	12618	13153	15330	15479	15774	20423	24502	24144	24306	25899	27184
Doctors of Sciences	1617	2120	2654	2924	3252	3439	3568	5068	5774	5753	5638	6218	6318
Candidates of Sciences	12545	9993	9964	10229	12078	12040	12206	15355	18728	18391	18668	19681	20866
Private non-profit sector	34	122	83	342	431	357	331	328	341	336	150	160	173
Doctors of Sciences	7	36	23	82	100	91	80	88	94	83	41	42	51
Candidates of Sciences	27	86	60	260	331	266	251	240	247	253	109	118	122

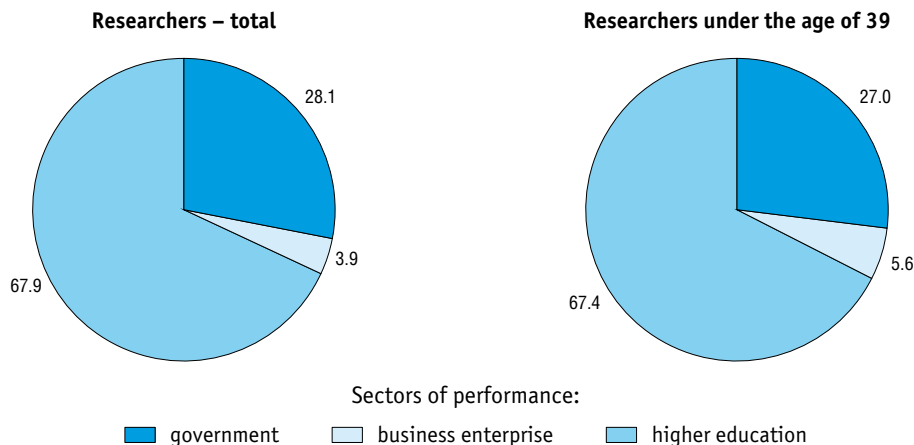
5.1.6. PERCENTAGE DISTRIBUTION OF RESEARCHERS WITH ACADEMIC DEGREES BY SECTOR OF PERFORMANCE



5.1.7. RESEARCHERS ASSIGNED TO WORK (UNDERTAKE AN INTERNSHIP) AT FOREIGN RESEARCH INSTITUTIONS BY SECTOR OF PERFORMANCE: 2015

	Total	Government sector	Business enterprise sector	Higher education sector
Number of institutions that assigned researchers to work (undertake an internship) in foreign research institutions	278	109	28	140
Researchers assigned to work (undertake an internship) in foreign research institutions, <i>headcount</i>	3515	987	138	2388
Of whom those under the age of 39	1667	450	93	1124

5.1.8. PERCENTAGE DISTRIBUTION OF RESEARCHERS ASSIGNED TO WORK (UNDERTAKE AN INTERNSHIP) IN FOREIGN RESEARCH INSTITUTIONS BY SECTOR OF PERFORMANCE: 2015

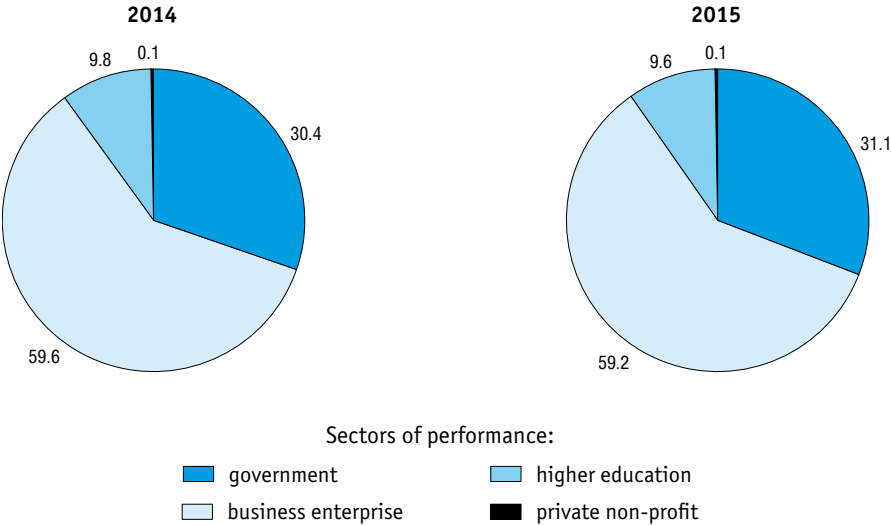


5.1.9. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE

(thousand roubles, 1995 – million roubles)

	1995	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015
At current prices											
Gross domestic expenditure on R&D	12149458.6	76697100.5	371080327.1	431073185.2	485834338.2	523377233.9	610426680.6	699869784.8	749797638.8	847526992.9	914669057.2
Government sector	3165439.4	18748588.2	107984917.2	129871228.3	147023165.7	161988411.4	182135309.9	224982089.2	226590120.7	258023009.1	284154288.3
Business enterprise sector	8323907.6	54288781.4	238386207.4	271206280.5	303051131.5	316701679.9	372088873.4	408284378.5	454409251.0	505210341.3	541533094.3
Higher education sector	657374.0	3489342.2	23471870.9	28868566.7	34642216.7	43714007.3	55134893.9	65334232.1	67858855.1	83205260.1	87730781.4
Private non-profit sector	2737.6	170388.7	1237331.6	1127109.7	1117824.3	973135.3	1067603.4	1269085.0	939412.0	1088382.4	1250893.2
At constant 1989 prices											
Gross domestic expenditure on R&D	2485.4	3321.2	5577.5	5490.8	6067.0	5723.2	5759.3	6097.2	6232.9	6572.2	6585.7
Government sector	647.6	811.9	1623.1	1654.3	1836.0	1771.4	1718.4	1960.0	1883.6	2000.8	2045.9
Business enterprise sector	1702.8	2350.9	3583.0	3454.5	3784.5	3463.2	3510.6	3556.9	3777.4	3917.7	3899.1
Higher education sector	134.5	151.1	352.8	367.7	432.6	478.0	520.2	569.2	564.1	645.2	631.7
Private non-profit sector	0.6	7.4	18.6	14.4	14.0	10.6	10.1	11.1	7.8	8.4	9.0

5.1.10. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE



5.1.11. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT

	Total	Government sector	Business enterprise sector	Higher education sector
1995	0.85	0.22	0.58	0.05
2000	1.05	0.26	0.74	0.05
2002	1.25	0.31	0.87	0.07
2003	1.29	0.33	0.88	0.08
2004	1.15	0.29	0.80	0.06
2005	1.07	0.28	0.73	0.06
2006	1.07	0.29	0.72	0.07
2007	1.12	0.32	0.72	0.07
2008	1.04	0.31	0.66	0.07
2009	1.25	0.38	0.78	0.09
2010	1.13	0.35	0.68	0.09
2011	1.02	0.31	0.62	0.09
2012	1.05	0.34	0.61	0.10
2013	1.06	0.32	0.64	0.10
2014	1.09	0.33	0.65	0.11
2015	1.13	0.35	0.67	0.11

5.1.12. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOURCE OF FUNDS

(thousand roubles)

	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
2013						
Gross domestic expenditure on R&D	749797638.8	507197614.5	211135955.9	7820677.9	896366.0	22747024.5
Government sector	226590120.7	186930366.9	31300159.7	175890.2	105228.8	8078475.1
Business enterprise sector	454409251.0	279358934.6	161100909.7	515567.0	88727.4	13345112.3
Higher education sector	67858855.1	40378679.8	18663427.9	7080091.0	448892.7	1287763.7
Private non-profit sector	939412.0	529633.2	71458.6	49129.7	253517.1	35673.4
2014						
Gross domestic expenditure on R&D	847526992.9	586658713.4	229444656.4	9069176.1	1372014.1	20982432.9
Government sector	258023009.1	219020381.4	29660844.5	357181.2	100284.6	8884317.4
Business enterprise sector	505210341.3	316622608.3	177116134.2	442911.7	359214.0	10669473.1
Higher education sector	83205260.1	50496387.8	22607546.6	8215233.9	506189.0	1379902.8
Private non-profit sector	1088382.4	519335.9	60131.1	53849.3	406326.5	48739.6

(continued)

	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
2015						
Gross domestic expenditure on R&D	914669057.2	635859865.4	242155382.4	10875090.0	1566750.2	24211969.2
Government sector	284154288.3	240265758.8	32877099.7	321525.4	163335.5	10526568.9
Business enterprise sector	541533094.3	343396867.3	185037359.3	561703.2	421868.8	12115295.7
Higher education sector	87730781.4	51570251.1	24028351.9	9979551.2	671465.0	1481162.2
Private non-profit sector	1250893.2	626988.2	212571.5	12310.2	310080.9	88942.4

* Including budget funds, government budget appropriations for higher education institutions; government sector institutions funds (including intramural funds of the institutions (organisations)).

5.1.13. GROSS DOMESTIC EXPENDITURE ON R&D FUNDED WITH GRANTS, SUBSIDIES AND COMPETITIVE R&D FINANCING: 2015
(thousand roubles)

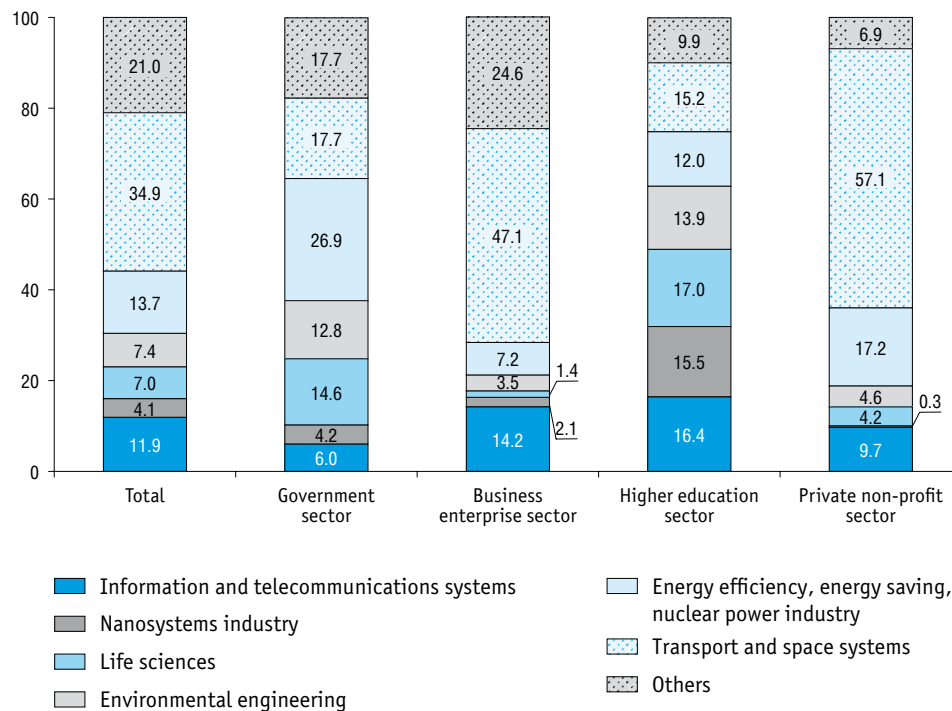
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Budget subsidies financially supporting government assignments in the sphere of R&D	92260622.5	67903553.2	8880016.5	15444778.5	32274.3
at the expense of the budgets of all levels	92260622.5	67903553.2	8880016.5	15444778.5	32274.3
of which federal	89644529.2	65997940.3	8880016.5	14747756.1	18816.3
Budget subsidies allocated to R&D and/or design and development activities	34143669.8	9092707.3	14958709.5	10048718.0	43535.0
at the expense of the budgets of all levels	34143669.8	9092707.3	14958709.5	10048718.0	43535.0
of which federal	32914108.4	8755861.2	14874108.5	9242927.7	41211.0
Grants from funds supporting R&D, S&T and innovative activity	22725394.7	13933378.4	597706.6	8133416.5	60893.2
at the expense of the budgets of all levels	21690080.7	13460002.0	475897.4	7734049.8	20131.5
of which federal	20237643.7	12637755.5	473897.4	7105859.3	20131.5
Other types of competitive financing	79479326.3	12853196.2	58324911.7	8266305.7	34912.7
at the expense of the budgets of all levels	71170924.3	11258683.0	55739651.5	4163685.1	8904.7
of which federal	70161614.6	11039038.8	55587776.4	3531719.4	3080.0

5.1.14. GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SECTOR OF PERFORMANCE: 2015

(thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Gross domestic expenditure on R&D by S&T priority area	627405512.5	193116547.6	372141244.0	61489317.8	658403.1
Information and telecommunications systems	74555756.9	11647729.4	52767415.3	10076776.7	63835.5
Nanosystems industry	25421721.1	8102386.8	7757301.1	9560205.1	1828.1
Life sciences	43775675.6	28285531.2	5034188.0	10428171.8	27784.6
Environmental engineering	46422668.2	24665354.3	13156016.7	8571151.0	30146.2
Energy efficiency, energy saving, nuclear power industry	86252476.9	52022507.3	26732275.0	7384338.1	113356.5
Transport and space systems	219193146.9	34260391.7	175184635.9	9372079.1	376040.2

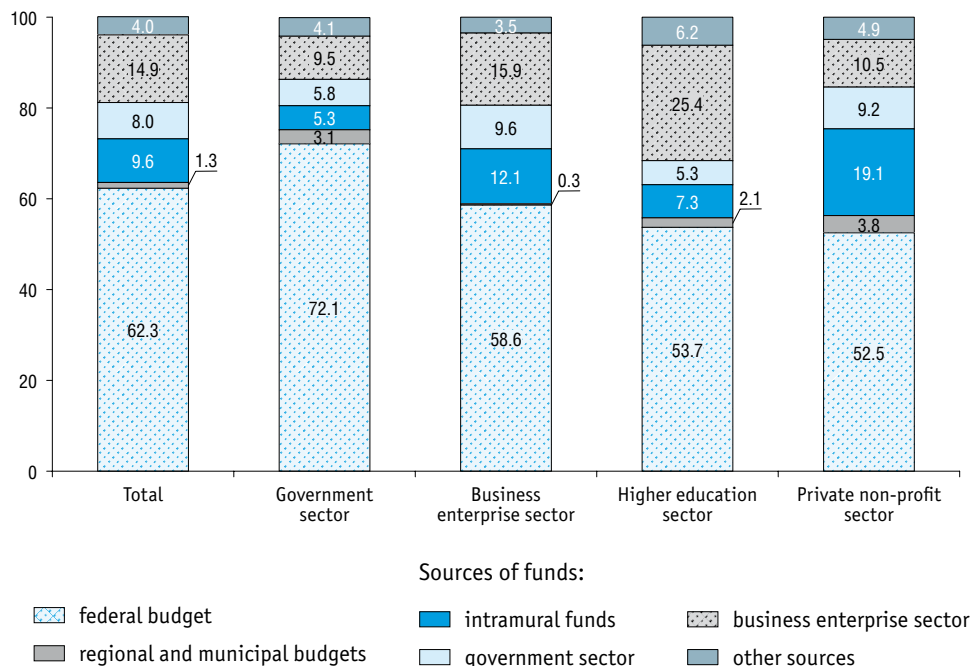
5.1.15. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SECTOR OF PERFORMANCE: 2015



5.1.16. SOURCES OF FUNDS FOR GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SECTOR OF PERFORMANCE: 2015
(thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Gross domestic expenditure on R&D S&T priority area	627405512.5	193116547.6	372141244.0	61489317.8	658403.1
Including those financed from:					
budgets of all levels	398937278.3	145239840.0	219027336.0	34299454.6	370647.7
of which federal	390638801.2	139185773.8	218074037.8	33033450.1	345539.5
own intramural funds	59988438.9	10320128.0	45063911.7	4478778.6	125620.6
government sector funds	50411041.1	11253484.4	35831802.4	3265311.7	60442.6
business enterprise sector funds	93281440.0	18424691.0	59175131.6	15612243.9	69373.5
other sources	24787314.2	7878404.2	13043062.3	3833529.0	32318.7

5.1.17. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY S&T PRIORITY AREA AND SOURCE OF FUNDS: 2015



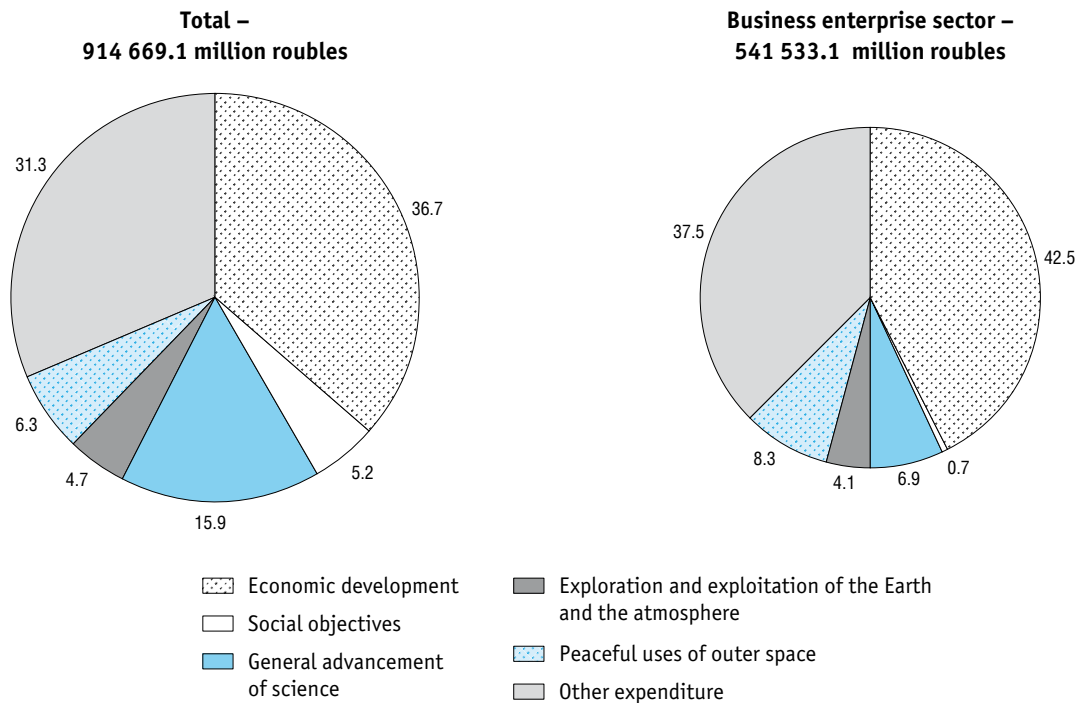
5.1.18. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOCIO-ECONOMIC OBJECTIVE
(thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
2012					
Gross domestic expenditure on R&D	699869784.8	224982089.2	408284378.5	65334232.1	1269085.0
Economic development	295901906.0	55032357.1	212179260.2	28615008.6	75280.1
Social objectives	33070785.7	19656464.9	5033592.1	8289720.7	91008.0
General advancement of science	117873370.5	67230975.7	28688459.8	21318775.7	635159.3
Exploration and exploitation of the Earth and the atmosphere	25474648.5	15629075.7	7772629.1	1957383.8	115559.9
Peaceful uses of outer space	37558965.0	10910796.0	25723269.3	901131.6	23768.1
Other expenditure	189990109.1	56522419.8	128887168.0	4252211.7	328309.6
2013					
Gross domestic expenditure on R&D	749797638.8	226590120.7	454409251.0	67858855.1	939412.0
Economic development	303849005.2	57707206.0	215317955.6	30734547.3	89296.3
Social objectives	39876895.8	22956650.4	4021637.0	12783813.4	114795.0
General advancement of science	130695141.4	69352465.7	42790745.8	18121418.8	430511.1
Exploration and exploitation of the Earth and the atmosphere	32889936.2	17181592.3	13663338.5	2011482.9	33522.5
Peaceful uses of outer space	51558366.4	11237808.4	39084006.0	1207010.5	29541.5
Other expenditure	190928293.8	48154397.9	139531568.1	3000582.2	241745.6

(continued)

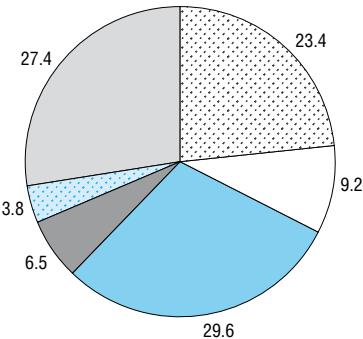
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
2014					
Gross domestic expenditure on R&D	847526992.9	258023009.1	505210341.3	83205260.1	1088382.4
Economic development	319943400.5	58260041.0	224881936.8	36680335.6	121087.1
Social objectives	45328439.6	24604406.8	4745913.8	15848699.1	129419.9
General advancement of science	136414580.0	75836748.8	36193754.2	23948358.6	435718.4
Exploration and exploitation of the Earth and the atmosphere	39068691.1	19049241.1	17826089.6	2155683.5	37676.9
Peaceful uses of outer space	48996185.8	10308768.0	37455033.6	1189438.9	42945.3
Other expenditure	257775695.9	69963803.4	184107613.3	3382744.4	321534.8
2015					
Gross domestic expenditure on R&D	914669057.2	284154288.3	541533094.3	87730781.4	1250893.2
Economic development	335508245.3	66498291.0	229892147.1	38839549.5	278257.7
Social objectives	47512609.4	26204488.0	3635210.6	17511474.7	161436.1
General advancement of science	145154435.8	84086241.6	37477260.5	23092224.3	498709.4
Exploration and exploitation of the Earth and the atmosphere	43206894.0	18496276.7	22445320.5	2221571.2	43725.6
Peaceful uses of outer space	57441295.9	10919478.4	45009580.3	1437968.4	74268.8
Other expenditure	285845576.8	77949512.6	203073575.3	4627993.3	194495.6

5.1.19. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOCIO-ECONOMIC OBJECTIVE: 2015

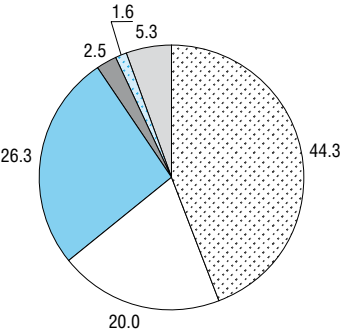


(continued)

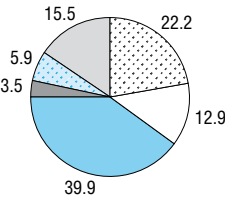
**Government sector –
284 154.3 million roubles**



**Higher education sector –
87 730.8 million roubles**



**Private non-profit sector –
1250.9 million roubles**



- Economic development
- Social objectives
- General advancement of science
- Exploration and exploitation of the Earth and the atmosphere
- Peaceful uses of outer space
- Other expenditure

5.1.20. INTRAMURAL CURRENT EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND TYPE OF ACTIVITY
(thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Intramural current expenditure on R&D					
2005	221119537.6	56342327.7	151228693.6	13144292.5	404223.8
2012	655061743.4	210559632.9	380968190.9	62268471.4	1265448.2
2013	699948879.0	213468794.6	420438999.3	65103832.7	937252.4
2014	795407850.6	244655172.5	470728154.3	78939146.3	1085377.5
2015	854288043.8	265478556.9	503088818.5	84495233.0	1225435.4
Basic research					
2005	31022855.8	24586195.8	2591506.7	3841327.6	3825.7
2012	108160904.7	78699812.7	11034975.2	18092897.7	333219.1
2013	114829117.8	86128282.9	10319086.1	18292483.8	89265.0
2014	130618045.6	97017979.4	11654667.9	21840738.8	104659.5
2015	132064934.3	99987000.6	7122577.4	24839057.2	116299.1
Applied research					
2005	36360266.9	10603039.3	20026408.8	5405410.3	325408.5
2012	129304402.1	50128152.6	50351025.6	28324950.6	500273.3
2013	133787976.7	49843105.3	52414718.7	31034270.9	495881.8
2014	155231401.5	53934451.4	62451087.5	38214808.7	631053.9
2015	169654641.2	66248286.3	61520451.3	41098469.1	787434.5
Experimental development					
2005	153736414.9	21153092.6	128610778.1	3897554.6	74989.6
2012	417596436.6	81731667.6	319582190.1	15850623.1	431955.8
2013	451331784.5	77497406.4	357705194.5	15777078.0	352105.6
2014	509558403.5	93702741.7	396622398.9	18883598.8	349664.1
2015	552568468.3	99243270.0	434445789.8	18557706.7	321701.8

5.1.21. AVERAGE MONTHLY SALARY OF R&D PERSONNEL BY SECTOR OF PERFORMANCE

(roubles, before 1998 – thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
1995	305.3	330.5	297.6	280.1	164.2
1996	550.9	555.5	557.1	441.4	587.5
1997	746.5	790.1	740.8	575.2	572.8
1998	836.0	814.2	861.3	624.9	581.0
1999	1432.6	1355.2	1491.1	1098.7	930.2
2000	2322.9	2015.6	2519.9	1400.3	1836.1
2001	3348.9	2870.5	3630.1	2383.8	2619.8
2002	4552.1	3970.4	4893.6	3476.9	4770.2
2003	5712.8	4969.6	6124.3	4749.1	5654.7
2004	6918.4	5958.7	7525.0	5088.8	6575.0
2005	8672.0	7220.9	9599.6	7042.0	5767.4
2007	14683.4	14208.3	15203.6	12233.1	13237.3
2008	19263.3	19561.0	19345.3	16812.7	21161.2
2009	22104.3	22979.7	21674.1	21191.5	24253.8
2010	25043.5	24792.1	25359.7	23716.4	24438.5
2011	28387.5	27869.4	29174.9	24963.9	25956.5
2012	32539.9	31990.2	33165.2	30915.1	25983.7
2013	35618.8	34532.8	36540.8	34101.0	27979.8
2014	39549.3	38715.6	39855.8	41258.6	37197.0
2015	41511.8	40513.5	42102.7	41850.5	41898.6

5.2. Government Sector

5.2.1. R&D INSTITUTIONS IN THE GOVERNMENT SECTOR BY TYPE

	2005	2009	2010	2011	2012	2013	2014	2015
Total	1282	1406	1400	1457	1465	1495	1491	1560
Scientific research institutes	1145	1126	1124	1109	1114	1144	1139	1173
Design organisations, design-and-engineering organisations	62	60	61	65	64	56	55	55
Construction project and exploration organisations	6	5	5	6	6	7	6	8
Pilot plants	14	35	30	33	37	43	42	48
Others	55	180	180	244	244	245	249	276

5.2.2. R&D PERSONNEL IN THE GOVERNMENT SECTOR BY TYPE OF INSTITUTIONS (headcount)

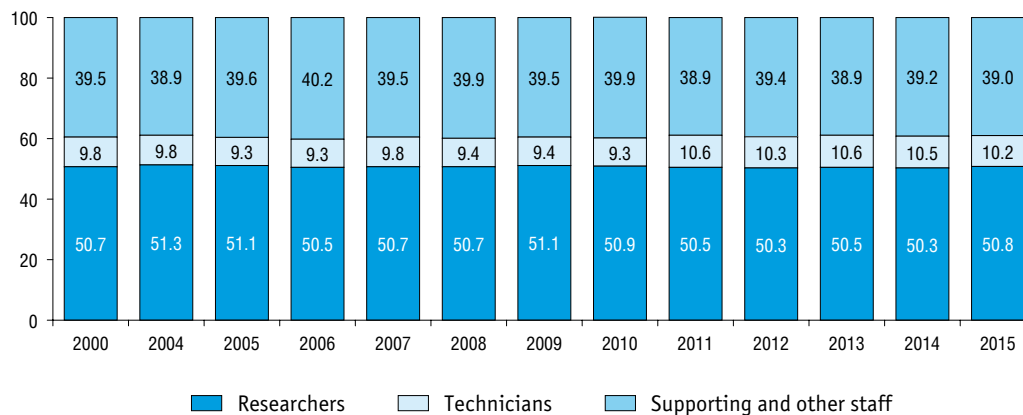
	2005	2008	2010	2011	2012	2013	2014	2015
Total	272718	260854	259007	254896	271466	261869	263712	265429
Scientific research institutes	248214	223190	222613	219220	232655	225798	228146	230893
Design organisations, design-and-engineering organisations	21499	27021	26473	23290	26084	22979	23448	19459
Construction project and exploration organisations	159	1442	1419	1390	1370	1156	1174	1220
Pilot plants	367	694	631	957	1375	1762	1278	1519
Others	2479	8507	7871	10039	9982	10174	9666	12338

5.2.3. R&D PERSONNEL IN THE GOVERNMENT SECTOR BY OCCUPATION

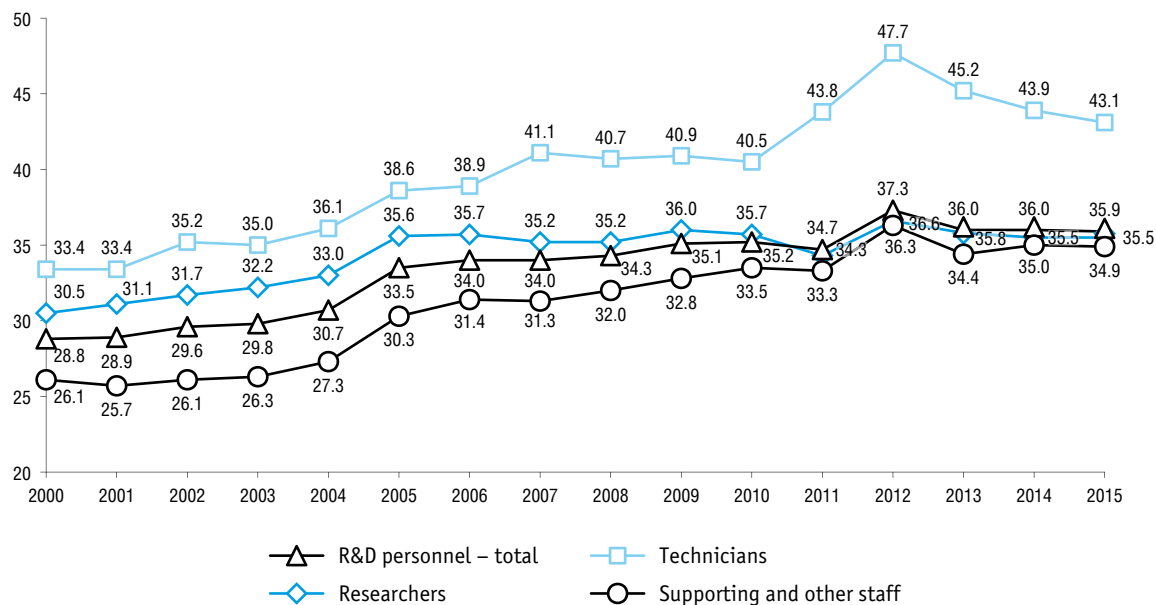
(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	282166	255850	272718	274802	272255	260854	260360	259007	254896	271466	261869	263712	265429
Researchers	146342	129725	139378	138728	138169	132261	132955	131734	128672	136442	132117	132701	134794
Technicians	27178	25085	25462	25667	26545	24531	24554	24009	26960	28094	27777	27761	27090
Supporting staff	66226	59706	61448	62482	61031	58591	56846	56530	54176	60067	56795	56744	56552
Others	42420	41334	46430	47925	46510	45471	46005	46734	45088	46863	45180	46506	46993

5.2.4. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE GOVERNMENT SECTOR BY OCCUPATION



5.2.5. GOVERNMENT SECTOR R&D PERSONNEL AS A PERCENTAGE OF THE TOTAL NUMBER OF R&D PERSONNEL BY OCCUPATION



5.2.6. GOVERNMENT SECTOR R&D PERSONNEL BY EDUCATIONAL ATTAINMENT

(headcount)

	Total	Higher education	Secondary vocational education	Other education
R&D personnel				
2005	272718	177676	40495	54547
2010	259007	178026	36091	44890
2012	271466	191193	35958	44315
2013	261869	187058	33629	41182
2014	263712	189447	33699	40566
2015	265429	194608	33163	37658
Researchers				
2005	139378	139378	—	—
2010	131734	131734	—	—
2012	136442	136442	—	—
2013	132117	132117	—	—
2014	132701	132701	—	—
2015	134794	134794	—	—
Technicians				
2005	25462	7802	12177	5483
2010	24009	9110	10155	4744
2012	28094	11957	10841	5296
2013	27777	12669	9747	5361
2014	27761	13245	9310	5206
2015	27090	13761	8609	4720

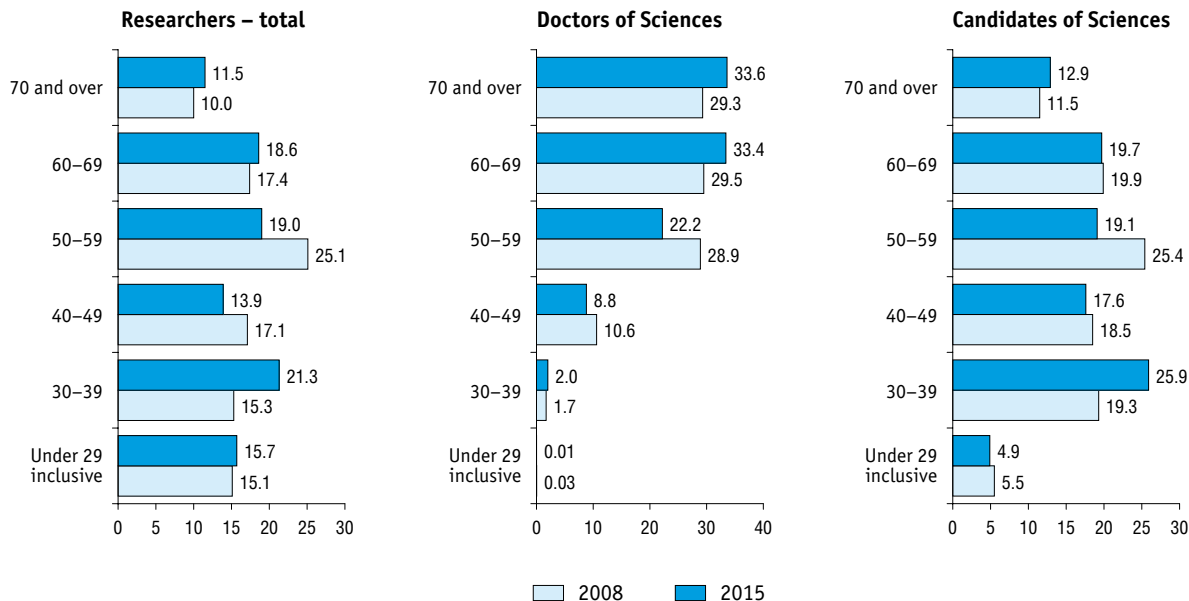
(continued)

	Total	Higher education	Secondary vocational education	Other education
Supporting staff				
2005	61448	19119	15834	26495
2010	56530	21762	14287	20481
2012	60067	24637	13977	21453
2013	56795	24082	13110	19603
2014	56744	24586	13038	19120
2015	56552	26144	13119	17289
Others				
2005	46430	11377	12484	22569
2010	46734	15420	11649	19665
2012	46863	18157	11140	17566
2013	45180	18190	10772	16218
2014	46506	18915	11351	16240
2015	46993	19909	11435	15649

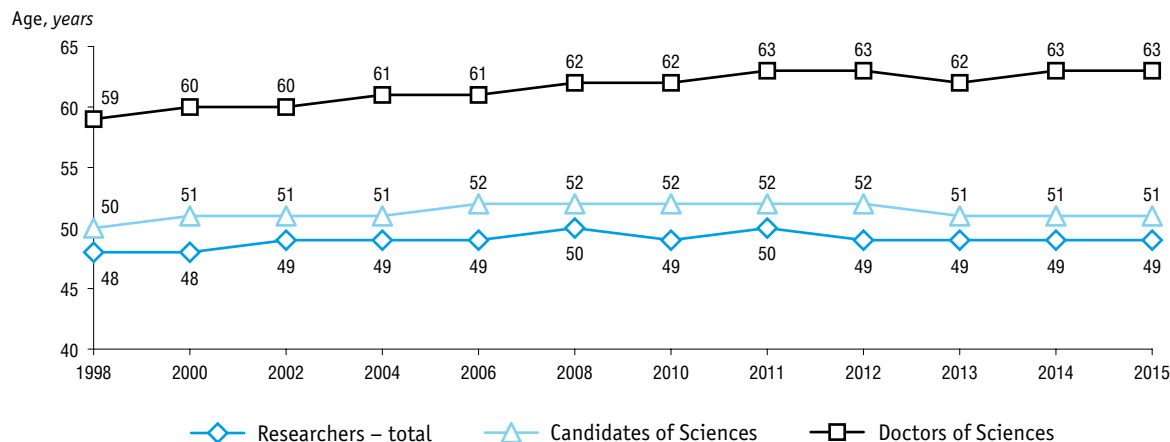
5.2.7. RESEARCHERS IN THE GOVERNMENT SECTOR BY GENDER AND AGE (headcount)

	2008			2015		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	132261	17326	43043	134794	18264	45642
Age, years:						
under 29 inclusive	19971	5	2348	21144	1	2223
30–39	20242	289	8296	28769	362	11813
40–49	22644	1838	7969	18693	1609	8014
50–54	16357	2194	5445	11776	1552	4084
55–59	16849	2821	5492	13789	2506	4646
60–69	23031	5106	8553	25090	6104	8971
70 and over	13167	5073	4940	15533	6130	5891
Males	72653	13078	23696	75500	13325	24652
Age, years:						
under 29 inclusive	11530	2	1354	12173	1	1266
30–39	9970	209	4091	15651	244	6102
40–49	10894	1307	3946	9199	1018	3657
50–54	8373	1583	2966	5934	1008	2102
55–59	9183	2073	3229	7344	1687	2549
60–69	13688	4001	4974	14778	4522	5392
70 and over	9015	3903	3136	10421	4845	3584
Females	59608	4248	19347	59294	4939	20990
Age, years:						
under 29 inclusive	8441	3	994	8971	–	957
30–39	10272	80	4205	13118	118	5711
40–49	11750	531	4023	9494	591	4357
50–54	7984	611	2479	5842	544	1982
55–59	7666	748	2263	6445	819	2097
60–69	9343	1105	3579	10312	1582	3579
70 and over	4152	1170	1804	5112	1285	2307

5.2.8. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE GOVERNMENT SECTOR BY AGE

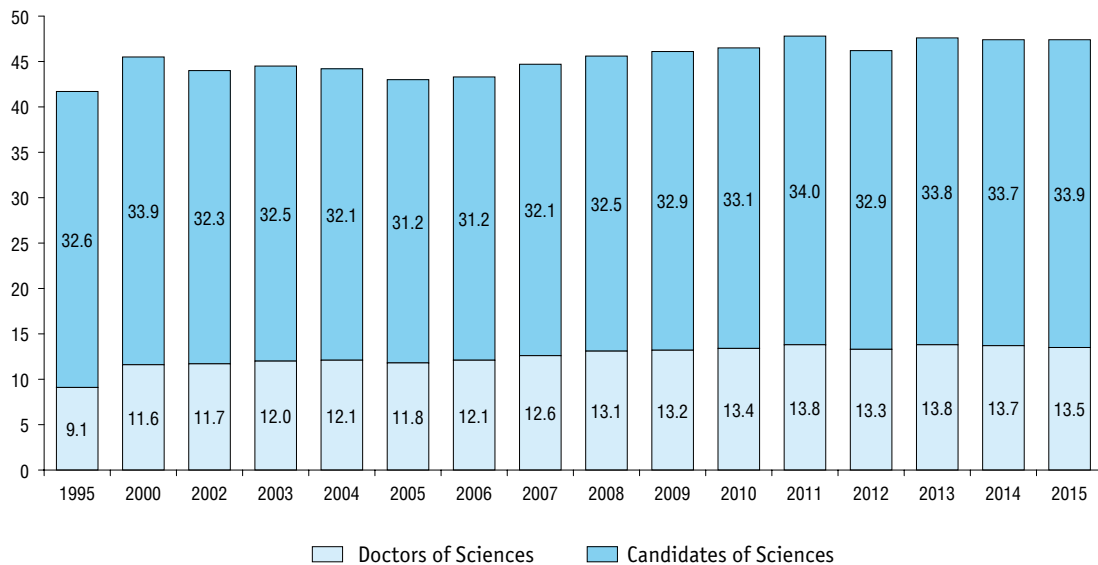


5.2.9. AVERAGE AGE OF RESEARCHERS IN THE GOVERNMENT SECTOR

5.2.10. RESEARCHERS WITH ACADEMIC DEGREES IN THE GOVERNMENT SECTOR
(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Researchers with academic degrees	61062	58901	60066	60054	61707	60369	61309	61194	61605	63092	62837	62944	63906
Doctors of Sciences	13358	14987	16511	16766	17415	17326	17554	17646	17789	18181	18184	18198	18264
Candidates of Sciences	47704	43914	43555	43288	44292	43043	43755	43548	43816	44911	44653	44746	45642

5.2.11. RESEARCHERS WITH ACADEMIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE GOVERNMENT SECTOR



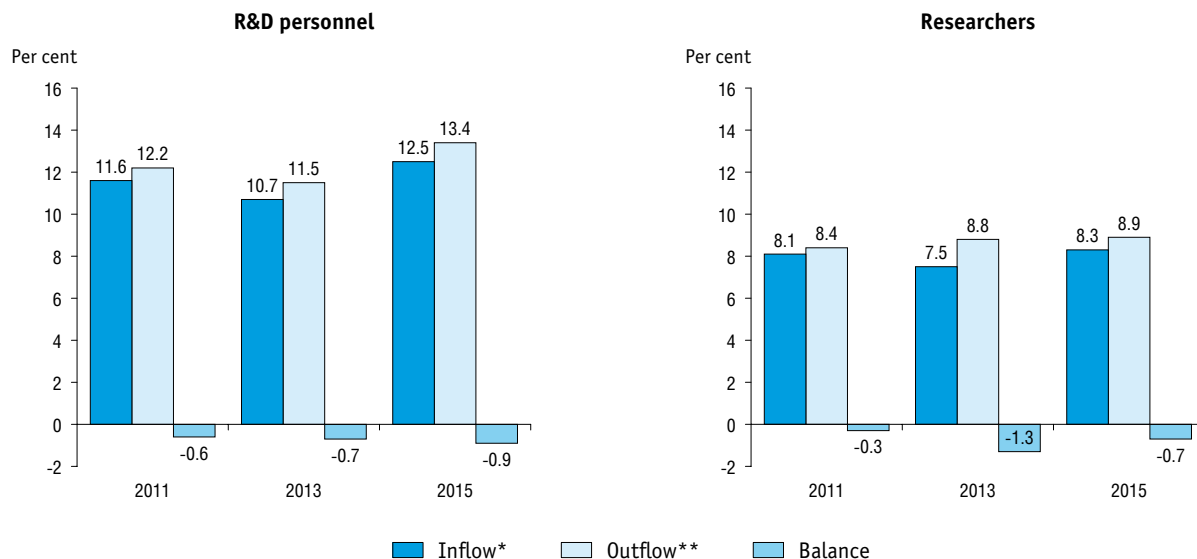
5.2.12. RESEARCHERS IN THE GOVERNMENT SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY (headcount)

	2008			2013			2014			2015		
	Researchers	Of whom		Researchers	Of whom		Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	132261	17326	43043	132117	18184	44653	132701	18198	44746	134794	18264	45642
Natural sciences	52719	8525	21841	53195	8920	22899	54676	8950	23242	56349	9010	23705
Engineering and Technology	44097	1740	6204	42914	1750	6084	42378	1765	5874	42326	1802	6044
Medical sciences	12918	3320	5921	13363	3521	6163	12710	3407	5801	12643	3369	5628
Agricultural sciences	10285	1225	3930	9898	1292	3820	10093	1315	3979	10008	1344	4040
Social sciences	5456	935	2251	6158	1188	2763	6174	1254	2859	6709	1213	3153
Humanities	6786	1581	2896	6589	1513	2924	6670	1507	2991	6759	1526	3072

5.2.13. R&D PERSONNEL TURNOVER IN THE GOVERNMENT SECTOR BY OCCUPATION (headcount)

	Number at the beginning of the reference year	Hired (inflow)				Left (outflow)				Number at the end of the reference year
		Total	Of whom			Total	Of whom			
			graduates from higher education institutions	graduates from other research institutes	others		left voluntarily	were made redundant	left due to other reasons	
Total										
2005	275249	32634	3990	5456	23188	35165	24924	851	9390	272718
2011	256637	29523	3152	4193	22178	31264	20567	1115	9582	254896
2013	264121	28184	2650	3461	22073	30436	20179	642	9615	261869
2015	268080	33169	3182	4136	25851	35820	20622	1319	13879	265429
Researchers										
2005	139746	11715	3127	3121	5467	12087	8871	358	2858	139378
2011	129871	10428	2192	2337	5899	10944	7072	335	3537	128717
2013	133682	10035	1894	2211	5930	11819	8172	277	3370	132117
2015	136237	11127	2147	2347	6633	12169	7725	505	3939	134794
Technicians										
2005	25569	4128	336	630	3162	4227	2892	83	1252	25462
2011	24540	4424	363	220	3841	4484	2717	146	1621	26960
2013	28152	4034	349	292	3393	4371	2696	55	1620	27777
2015	28250	4634	463	439	3732	5846	2689	138	3019	27090
Supporting and other staff										
2005	109934	16791	527	1705	14555	18851	13161	410	5280	107878
2011	102226	14671	597	1636	12438	15836	10778	634	4424	99219
2013	102287	14115	407	958	12750	14246	9311	310	4625	101975
2015	103593	17408	572	1350	15486	17805	10208	676	6921	103545

5.2.14. HIRING (INFLOW) AND DEPARTURE (OUTFLOW) OF R&D PERSONNEL IN THE GOVERNMENT SECTOR

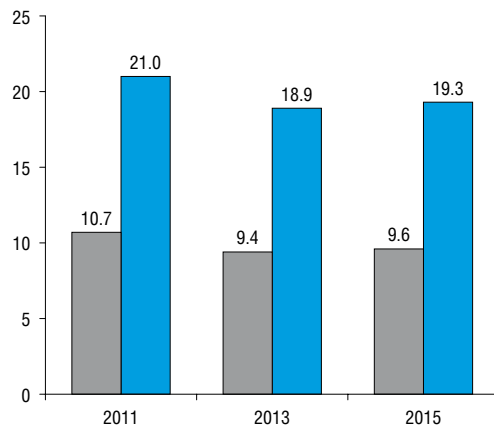


* The ratio of those hired during the year to the number of employees at the end of the year.

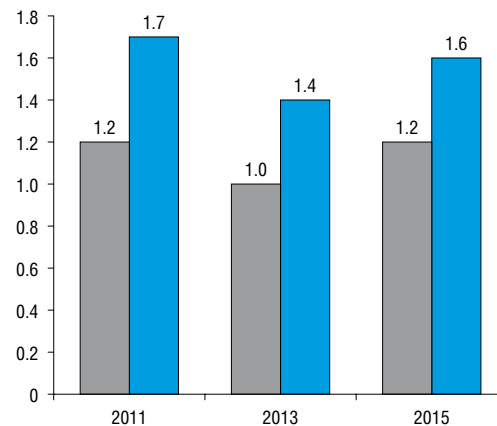
** The ratio of those who left during the year to the number of employees at the beginning of the year.

5.2.15. HIRING OF HIGHER EDUCATION GRADUATES (INFLOW) BY INSTITUTIONS IN THE GOVERNMENT SECTOR

Higher education institutions graduates
as a percentage of those hired



Higher education institutions graduates
as a percentage of R&D personnel*



■ R&D personnel – total ■ Researchers

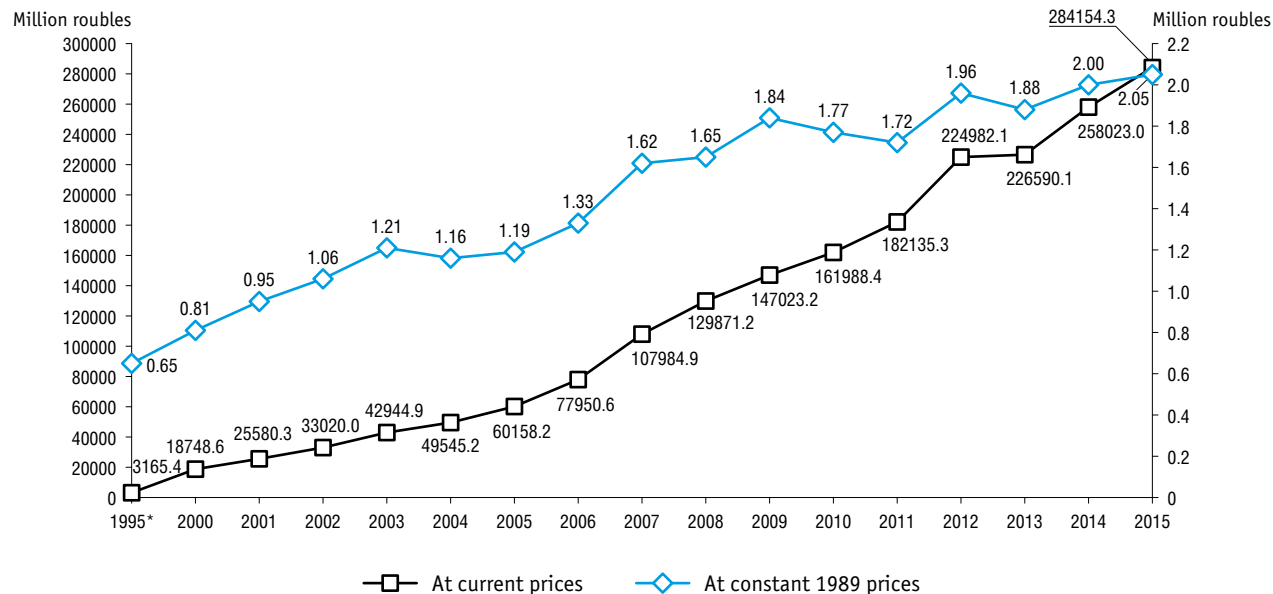
* The ratio of the higher education institutions graduates hired during the year to the number of employees at the end of the year.

5.2.16. GROSS DOMESTIC EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR BY TYPE OF INSTITUTIONS

(thousand roubles)

	2005	2010	2011	2012	2013	2014	2015
Total	60158166.6	161988411.4	182135309.9	224982089.2	226590120.7	258023009.1	284154288.3
Scientific research institutes	55762222.6	136870186.3	151261078.9	190774482.9	191023430.1	222183967.5	241159555.3
Design organisations, design-and-engineering organisations	4007361.7	20163653.6	23348735.0	24722611.1	25707283.0	27081699.7	31243788.5
Construction project and exploration organisations	21993.6	524208.6	551628.3	561026.1	433811.9	449560.6	384269.6
Pilot plants	20300.0	139733.5	528561.1	970655.0	1076831.6	925741.2	998142.5
Others	346288.7	4290629.4	6445306.6	7953314.1	8348764.1	7382040.1	10368532.4

5.2.17. GROSS DOMESTIC EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR



* Billion roubles.

5.2.18. GROSS DOMESTIC EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR BY SOURCE OF FUNDS

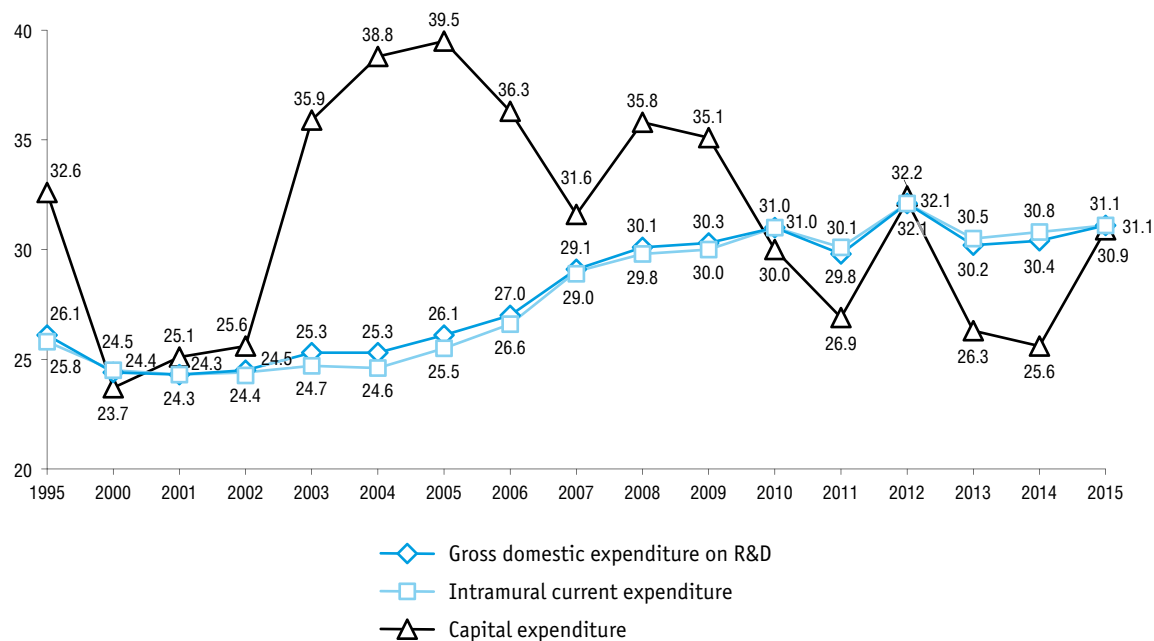
	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
At current prices, thousand roubles, 1995 – million roubles						
1995	3165439.4	2779222.3	255799.4	2313.0	821.0	127283.7
2000	18748588.2	15060439.1	2028296.2	11323.4	3898.5	1644631.0
2002	33020017.4	26539969.2	4019173.2	16110.2	49374.0	2395390.8
2003	42944862.9	34808445.2	4925941.0	23854.9	22789.9	3163831.9
2004	49545237.7	40562960.9	6491792.8	47839.9	10698.3	2431945.8
2005	60158166.6	50589802.5	6845507.2	46912.8	21976.9	2653967.2
2006	77950634.9	65449102.1	9136754.4	111817.6	52071.9	3200888.9
2007	107984917.2	85896140.4	14355790.2	80481.6	12412.3	7640092.7
2008	129871228.3	108231726.8	16119227.3	183124.2	120667.0	5216483.0
2009	147023165.7	124027349.4	16292839.6	90578.1	38990.4	6573408.2
2010	161988411.4	134275595.6	20873979.0	205154.5	73117.4	6560564.9
2011	182135309.9	153529403.4	21528707.1	244802.6	61568.4	6770828.4
2012	224982089.2	186513895.7	29459319.3	197336.7	75635.7	8735901.8
2013	226590120.7	186895055.8	31300159.7	211201.3	105228.8	8078475.1
2014	258023009.1	219020381.4	29660844.5	357181.2	100284.6	8884317.4
2015	284154288.3	240265758.8	32877099.7	321525.4	163335.5	10526568.9

(continued)

	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
	Per cent					
1995	100	87.8	8.1	0.07	0.03	4.0
2000	100	80.3	10.8	0.06	0.02	8.8
2002	100	80.4	12.2	0.05	0.1	7.3
2003	100	81.1	11.5	0.06	0.05	7.4
2004	100	81.9	13.1	0.1	0.02	4.9
2005	100	84.1	11.4	0.08	0.04	4.4
2006	100	84.0	11.7	0.1	0.07	4.1
2007	100	79.5	13.3	0.07	0.01	7.1
2008	100	83.3	12.4	0.1	0.09	4.0
2009	100	84.4	11.1	0.06	0.03	4.5
2010	100	82.9	12.9	0.1	0.05	4.1
2011	100	84.3	11.8	0.1	0.03	3.7
2012	100	82.9	13.1	0.09	0.03	3.9
2013	100	82.5	13.8	0.09	0.05	3.6
2014	100	84.9	11.5	0.1	0.04	3.4
2015	100	84.6	11.6	0.1	0.06	3.7

* Including budget funds, intramural funds and the funds of government sector institutions.

5.2.19. GOVERNMENT SECTOR EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF EXPENDITURE



5.2.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR BY TYPE OF EXPENDITURE

(thousand roubles)

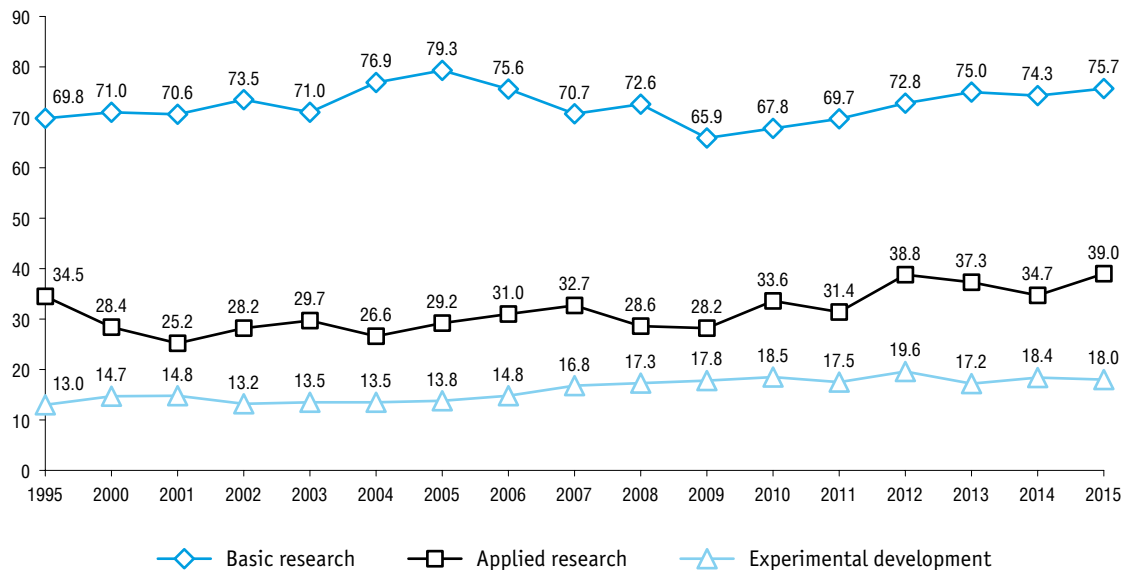
	2005	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D	60158166.6	161988411.4	182135309.9	224982089.2	226590120.7	258023009.1	284154288.3
Intramural current expenditure	56342327.7	151825126.6	170811017.0	210559632.9	213468794.6	244655172.5	265478556.9
Salaries	25406848.5	80849201.5	89553195.8	108036774.5	112439789.3	126267663.6	134412102.1
Of which for R&D personnel*	23066423.6	73752076.2	81321475.8	98720480.9	102744281.9	114929478.2	121375793.9
Social security payments	6257309.9	16436614.4	23348352.4	27038528.7	2923058.9	32567448.4	36154760.9
Equipment	3086873.3	5458681.5	5276489.5	8154615.9	6600021.2	7776357.0	7442689.6
Other material costs	9781232.9	22464861.8	25352173.1	33170617.4	32362326.9	39503365.7	42451174.6
Other current costs	11810063.1	26615767.4	27280806.2	34159096.4	32836118.3	38540337.8	45017829.7
Capital expenditure	3815838.9	10163284.8	11324292.9	14422456.3	13121326.1	13367836.6	18675731.4
Land and buildings	399698.5	3113137.6	2285830.0	2579811.6	2467555.2	3248423.4	3903611.8
Equipment	2485274.0	4647644.5	5963907.8	8948846.1	7352490.4	7037782.8	10358881.1
Other capital expenditure	930866.4	2402502.7	3074555.1	2893798.6	3301280.5	3081630.4	4413238.5

* Excluding secondary job employees and those working under labour contracts.

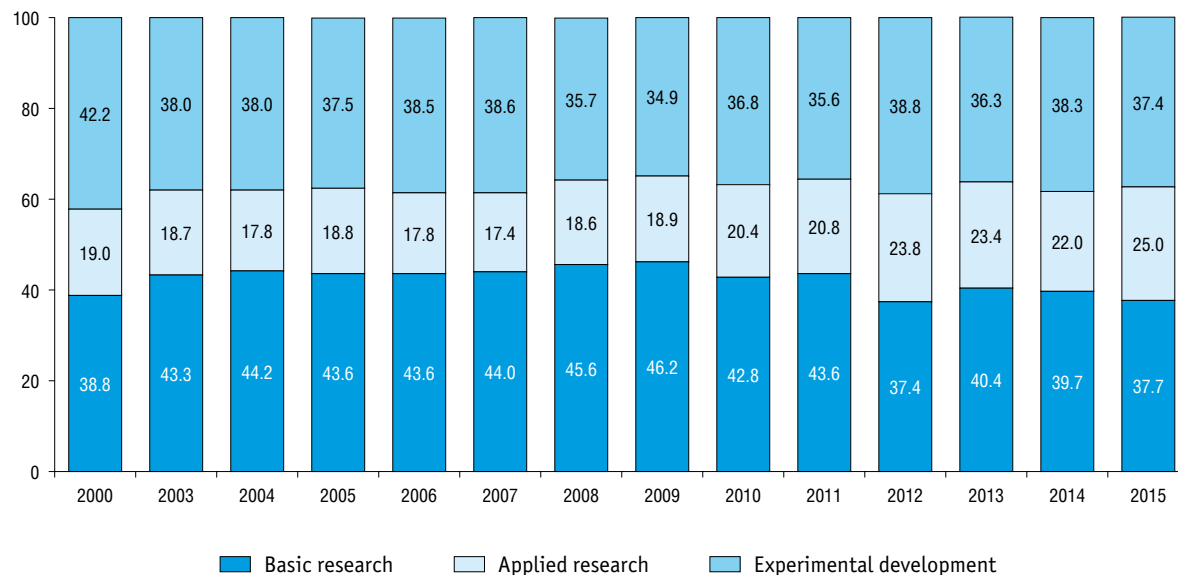
**5.2.21. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE PUBLIC SECTOR BY TYPE OF ACTIVITY
AND FIELD OF SCIENCE AND TECHNOLOGY**
(thousand roubles)

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2005							
Intramural current expenditure on R&D	56342327.7	20577533.0	25509704.3	3738833.2	2939051.4	1951167.1	1626038.7
Basic research	24586195.8	15976354.8	2622298.0	1662238.3	1678543.7	1333808.2	1312952.8
Applied research	10603039.3	2644812.7	4734050.4	1703960.2	840824.2	475142.3	204249.5
Experimental development	21153092.6	1956365.5	18153355.9	372634.7	419683.5	142216.6	108836.4
2012							
Intramural current expenditure on R&D	210559632.9	74578391.3	99706257.2	15817690.9	8026764.3	5652165.9	677836.3
Basic research	78699812.7	48982304.9	10692686.1	6227176.1	4157881.1	3442922.0	5196842.5
Applied research	50128152.6	16568445.2	19005871.9	8523260.5	2915626.9	1908941.7	1206006.4
Experimental development	81731667.6	9027641.2	70007699.2	1067254.3	953256.3	300302.2	375514.4
2013							
Intramural current expenditure on R&D	213468794.6	79572896.8	93847670.4	17128372.1	9466494.3	6624251.4	6829109.6
Basic research	86128282.9	51133027.0	12746351.4	7571746.5	4660236.1	4449803.8	5567118.1
Applied research	49843105.3	19084334.2	16571591.2	8104764.8	3455260.0	1661589.4	965565.7
Experimental development	77497406.4	9355535.6	64529727.8	1451860.8	1350998.2	512858.2	296425.8
2014							
Intramural current expenditure on R&D	244655172.5	92732641.7	107607344.3	18464196.6	10908795.6	7106804.7	7835389.6
Basic research	97017979.4	57696082.8	12355070.9	8397591.8	7316853.9	4853294.3	6399085.7
Applied research	53934451.4	19852066.9	20568881.7	8767461.7	2429711.6	1501888.3	814441.2
Experimental development	93702741.7	15184492.0	74683391.7	1299143.1	1162230.1	751622.1	621862.7
2015							
Intramural current expenditure on R&D	265478556.9	98742002.1	117329719.0	22341866.9	11448932.5	7440718.3	8175318.1
Basic research	99987000.6	58183429.9	14273618.3	7951401.7	7804653.1	4972403.3	6801494.3
Applied research	66248286.3	24349761.4	23686724.2	13081555.6	2396404.2	1982310.8	751530.1
Experimental development	99243270.0	16208810.8	79369376.5	1308909.6	1247875.2	486004.2	622293.7

5.2.22. GOVERNMENT SECTOR INTRAMURAL CURRENT EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



5.2.23. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR BY TYPE OF ACTIVITY



5.2.24. AVERAGE MONTHLY SALARY OF R&D PERSONNEL IN THE GOVERNMENT SECTOR

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average monthly salary, <i>roubles, 1995 – thousand roubles</i>	330.5	2015.6	7220.9	14208.3	19561.0	22979.7	24792.1	27869.4	32031.0	34532.8	38715.6	40513.5
As a percentage of the salary:												
in the national economy (=100%)	70.0	90.7	84.4	104.5	113.1	123.3	118.3	119.3	120.3	115.9	119.1	119.2
in manufacturing (=100%)	72.1	85.2	85.7	110.3	121.9	138.6	130.0	128.0	130.7	127.7	131.2	127.2
in construction (=100%)	56.2	76.4	79.9	99.1	105.3	126.8	117.1	117.7	123.4	124.7	131.9	135.6

5.3. Business Enterprise Sector

5.3.1. R&D INSTITUTIONS IN THE BUSINESS ENTERPRISE SECTOR BY TYPE

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	2345	2278	1703	1682	1742	1540	1446	1405	1450	1362	1269	1265	1400
Scientific research institutes	1089	1062	855	805	765	699	659	634	598	567	514	504	482
Design organisations, design-and-engineering organisations	615	564	410	398	391	334	306	290	287	262	265	254	260
Construction project and exploration organisations	204	94	55	51	45	37	31	31	32	27	26	26	21
Industrial enterprises	286	276	231	255	265	239	228	238	280	274	266	275	371
Pilot plants	31	32	16	15	19	20	21	16	14	19	9	10	11
Others	120	250	136	158	257	211	201	196	239	213	189	196	255

5.3.2. R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF INSTITUTIONS

(headcount)

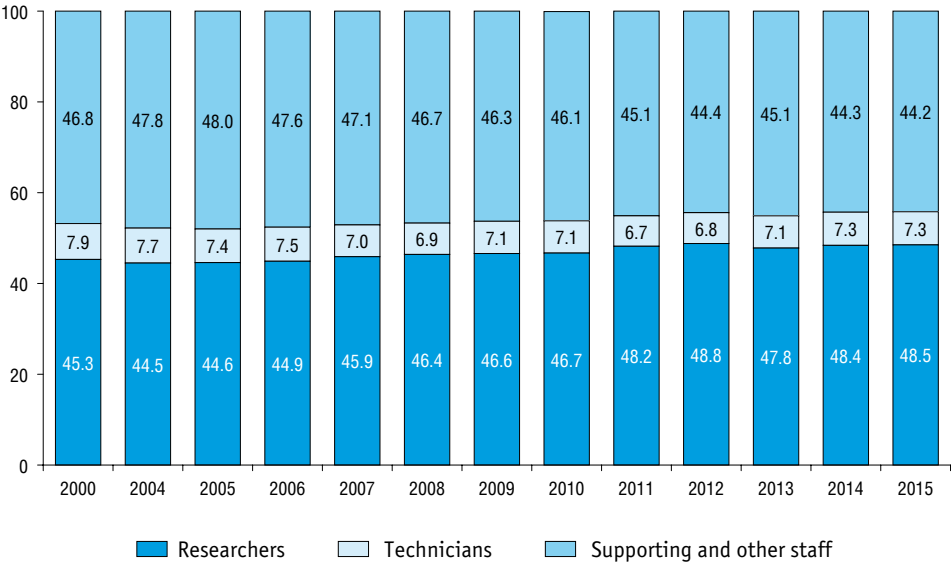
	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	726568	590646	496706	486613	478401	451532	432415	423112	419752	394182	405268	405529	408802
Scientific research institutes	438599	349242	255233	243004	234808	225430	214050	207166	196235	194274	205511	204860	202431
Design organisations, design-and-engineering organisations	174523	151705	161295	153259	148294	138713	135811	129281	135133	110381	112617	114752	115683
Construction project and exploration organisations	20844	8177	5284	5839	7001	6004	5320	4905	5076	5402	3751	3602	1629
Industrial enterprises	73410	52598	43524	59856	56759	52042	49042	51807	52004	52071	52232	49358	53868
Pilot plants	9998	3945	865	5736	2653	849	938	925	852	946	705	1374	1499
Others	9194	24979	30505	18919	28886	28494	27254	29028	30452	31108	30536	31583	33692

5.3.3. R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR BY OCCUPATION

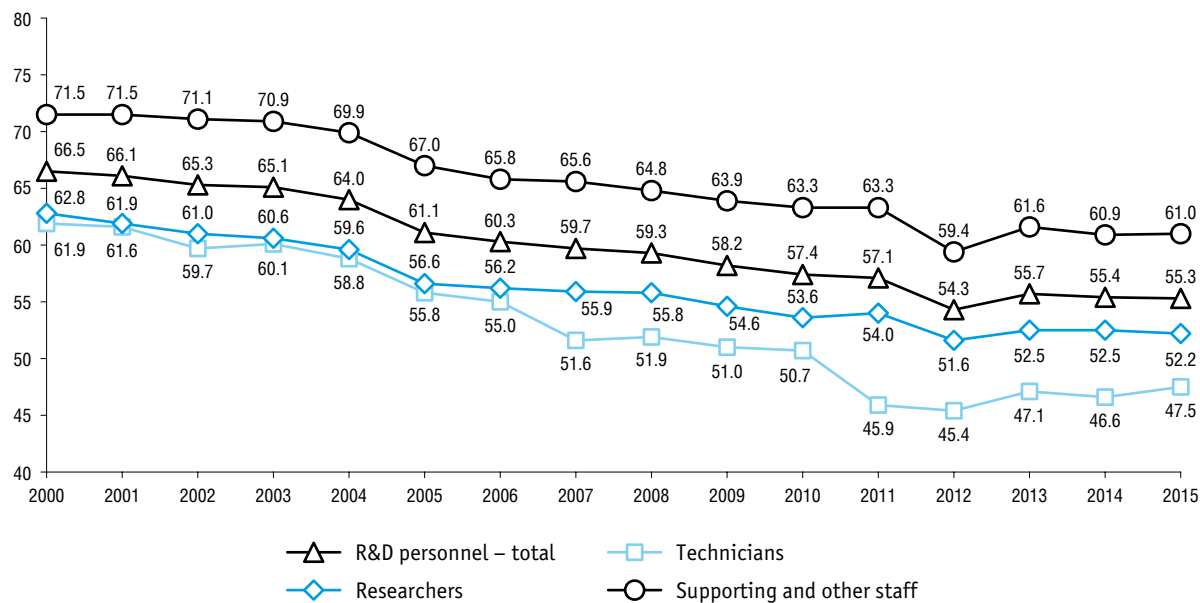
(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	726568	590646	496706	486613	478401	451532	432415	423112	419752	394182	405268	405529	408802
Researchers	336671	267640	221445	218702	219632	209579	201668	197785	202185	192285	193736	196320	198123
Technicians	70180	46535	38837	36315	33340	31230	30613	30063	28235	26720	28920	29452	29850
Supporting staff	201122	175261	147980	144966	140507	129496	123814	120485	116829	106306	109691	107215	108230
Others	118595	101210	90444	86630	84922	81227	76320	74779	72503	68871	72921	72542	72599

5.3.4. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR BY OCCUPATION



5.3.5. BUSINESS ENTERPRISE SECTOR R&D PERSONNEL AS A PERCENTAGE OF THE TOTAL NUMBER OF R&D PERSONNEL BY OCCUPATION



5.3.6. BUSINESS ENTERPRISE SECTOR R&D PERSONNEL BY EDUCATIONAL ATTAINMENT

(headcount)

	Total	Higher education	Secondary vocational education	Other education
R&D personnel				
2005	496706	288649	89265	118792
2010	423112	268821	69552	84739
2012	394182	263555	60764	69863
2013	405268	271434	61575	72259
2014	405529	276675	59564	69290
2015	408802	283664	60370	64768
Researchers				
2005	221445	221445	—	—
2010	197785	197785	—	—
2012	192285	192285	—	—
2013	193736	193736	—	—
2014	196320	196320	—	—
2015	198123	198123	—	—
Technicians				
2005	36837	6274	21435	9130
2010	30063	7842	15051	7170
2012	26720	7547	13096	6077
2013	28920	9428	12887	6605
2014	29452	10215	12503	6734
2015	29850	11656	11794	6400

(continued)

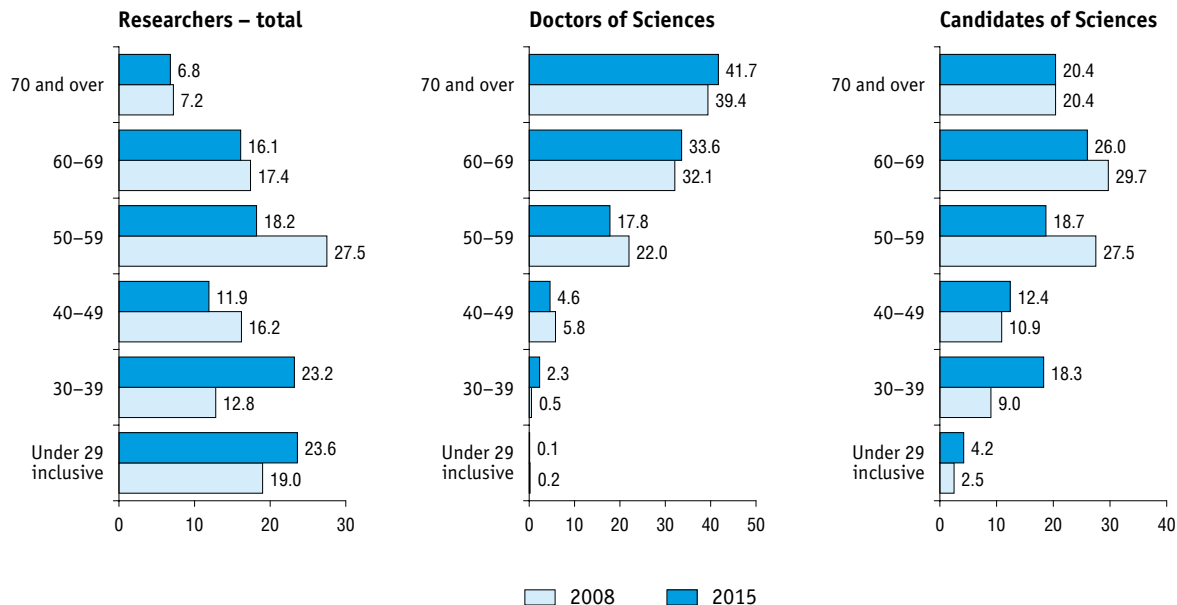
	Total	Higher education	Secondary vocational education	Other education
Supporting staff				
2005	147980	37101	42099	68780
2010	120485	38988	33362	48135
2012	106306	37181	29116	40009
2013	109691	39124	29508	41059
2014	107215	40615	28175	38425
2015	108230	42934	30297	34999
Others				
2005	90444	23829	25733	40882
2010	74779	24206	21139	29434
2012	68871	26542	18552	23777
2013	72921	29146	19180	24595
2014	72542	29525	18886	24131
2015	72599	30951	18279	23369

5.3.7. RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY GENDER AND AGE

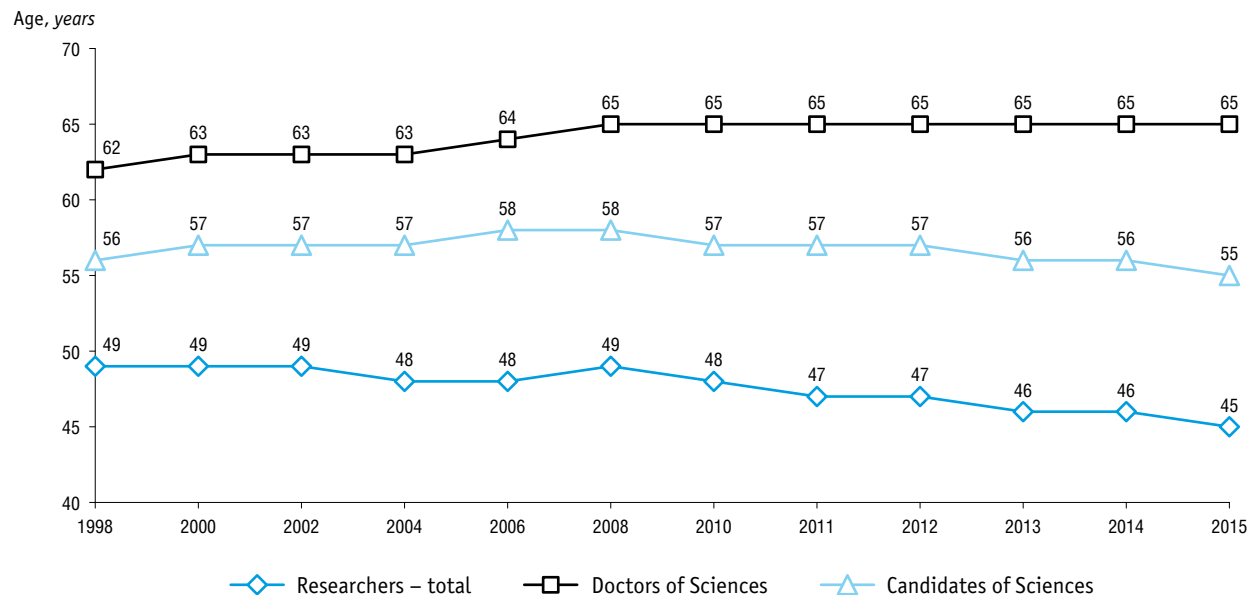
(headcount)

	2008			2015		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	209579	4284	20560	198123	3413	16857
Age, years:						
under 29 inclusive	39743	8	522	46854	4	701
30–39	26840	21	1845	46046	78	3090
40–49	33992	250	2234	23651	156	2087
50–54	28373	369	2334	16763	214	1293
55–59	29208	572	3324	19333	392	1861
60–69	36400	1375	6113	31975	1147	4383
70 and over	15023	1689	4188	13501	1422	3442
Males	125997	3905	16502	126019	3108	13546
Age, years:						
under 29 inclusive	25365	7	397	31232	4	538
30–39	16324	17	1303	30325	65	2295
40–49	17239	220	1676	13918	125	1520
50–54	15126	317	1817	9061	196	1020
55–59	16262	509	2667	11102	343	1542
60–69	23519	1276	5109	20028	1047	3694
70 and over	12162	1559	3533	10353	1328	2937
Females	83582	379	4058	72104	305	3311
Age, years:						
under 29 inclusive	14378	1	125	15622	–	163
30–39	10516	4	542	15721	13	795
40–49	16753	30	558	9733	31	567
50–54	13247	52	517	7702	18	273
55–59	12946	63	657	8231	49	319
60–69	12881	99	1004	11947	100	689
70 and over	2861	130	655	3148	94	505

5.3.8. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY AGE



5.3.9. AVERAGE AGE OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR

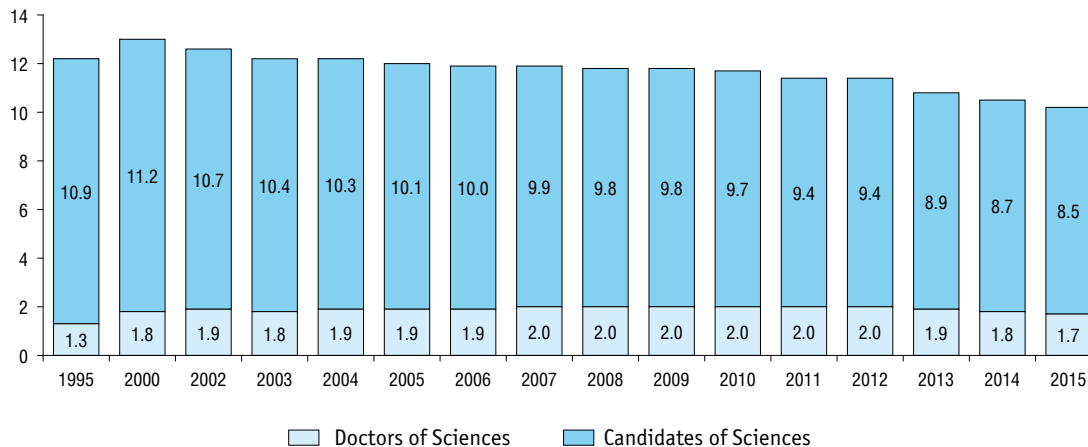


5.3.10. RESEARCHERS WITH ACADEMIC DEGREES IN THE BUSINESS ENTERPRISE SECTOR

(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Researchers with academic degrees	41207	34775	26661	25958	26257	24844	23861	23169	23045	21758	20955	20595	20270
Doctors of Sciences	4348	4806	4222	4108	4446	4284	4093	3987	4018	3767	3622	3511	3413
Candidates of Sciences	36859	29969	22439	21850	21811	20560	19768	19182	19027	17991	17333	17084	16857

5.3.11. RESEARCHERS WITH ACADEMIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR



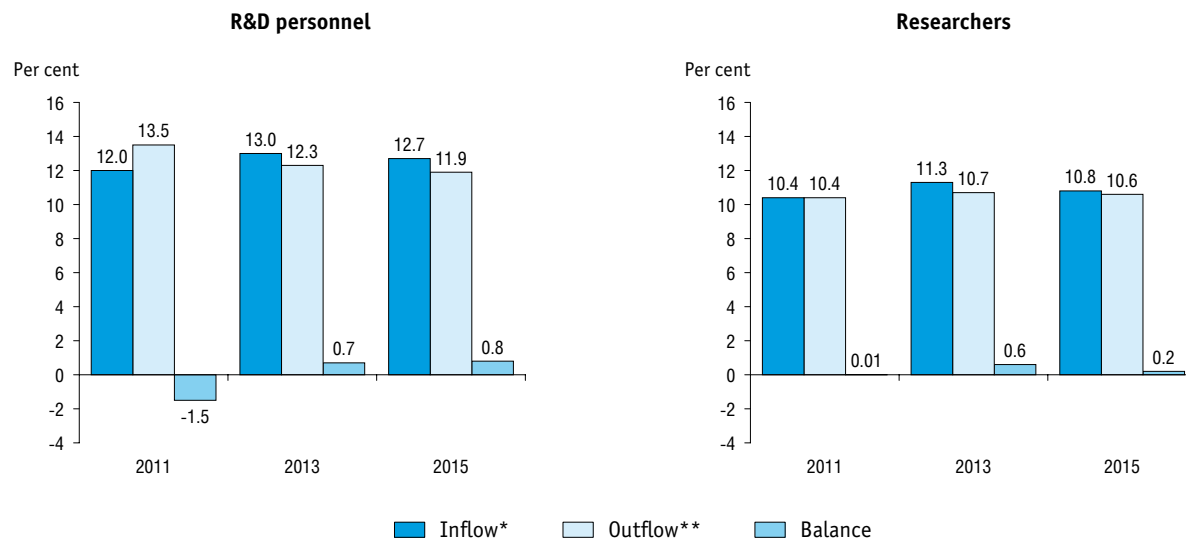
5.3.12. RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY (headcount)

	2008			2013			2014			2015		
	Researchers	Of whom		Researchers	Of whom		Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	209579	4284	20560	193736	3622	17333	196320	3511	17084	198123	3413	16857
Natural sciences	25014	1301	5106	19327	1059	4006	20007	1034	3963	17101	928	3480
Engineering and Technology	177503	2478	13712	170013	2306	12311	171705	2177	12034	176440	2172	12325
Medical sciences	1353	139	413	933	65	192	949	77	198	1116	64	179
Agricultural sciences	2401	185	685	690	38	234	587	46	159	437	44	131
Social sciences	3109	161	587	2670	150	578	2747	156	620	2577	166	602
Humanities	199	20	57	103	4	12	325	21	110	452	39	140

5.3.13. R&D PERSONNEL TURNOVER IN THE BUSINESS ENTERPRISE SECTOR BY OCCUPATION (headcount)

	Number at the beginning of the reference year	Hired (inflow)				Left (outflow)				Number at the end of the reference year
		Total	Of whom			Total	Of whom			
			graduates from higher education institutions	graduates from other research institutes	others		left voluntarily	were made redundant	left due to other reasons	
Total										
2005	508840	68528	8027	8756	51745	80662	52534	5722	22406	496706
2011	427274	50218	7976	6092	36150	57740	36033	1794	19913	419752
2013	401809	52700	6758	7632	38310	49241	32584	1159	15498	405268
2015	405181	52033	6175	7075	38783	48412	30324	2568	15520	408802
Researchers										
2005	227397	22807	6529	5028	11250	28822	19496	2053	7273	221445
2011	202213	21121	5890	3770	11461	21109	14428	696	5985	202185
2013	192306	21908	4703	4471	12734	20499	13769	380	6350	193736
2015	197658	21426	4225	3730	13471	20954	13382	831	6741	198123
Technicians										
2005	38078	5739	301	729	4709	6965	4347	388	2230	36837
2011	29057	4500	358	524	3618	5365	3378	124	1863	28235
2013	28318	5409	506	665	4238	4779	2829	75	1875	28920
2015	30047	4897	546	574	3777	4977	2973	304	1700	29850
Supporting and other staff										
2005	243365	39982	1197	2999	35786	44875	28691	3281	12903	238424
2011	196004	24597	1728	1798	21071	31266	18227	974	12065	189332
2013	181185	25383	1549	2496	21338	23963	15986	704	7273	182612
2015	177476	25710	1404	2771	21535	22481	13969	1433	7079	180829

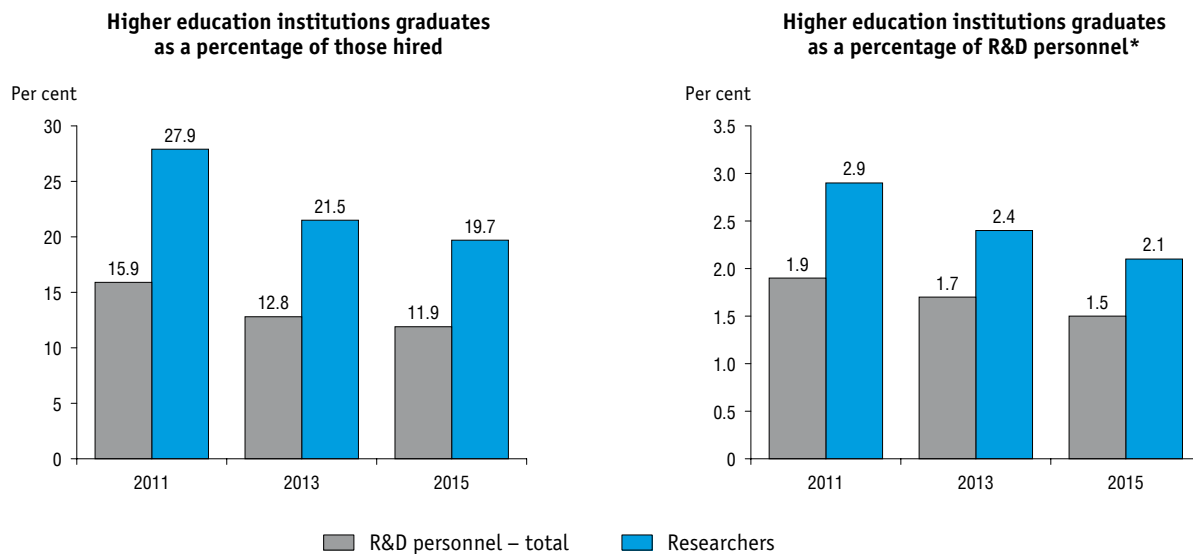
5.3.14. HIRING (INFLOW) AND DEPARTURE (OUTFLOW) OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR



* The ratio of those hired during the year to the number of employees at the end of the year.

** The ratio of those who left during the year to the number of employees at the beginning of the year.

5.3.15. HIRING OF HIGHER EDUCATION GRADUATES (INFLOW) BY INSTITUTIONS IN THE BUSINESS ENTERPRISE SECTOR



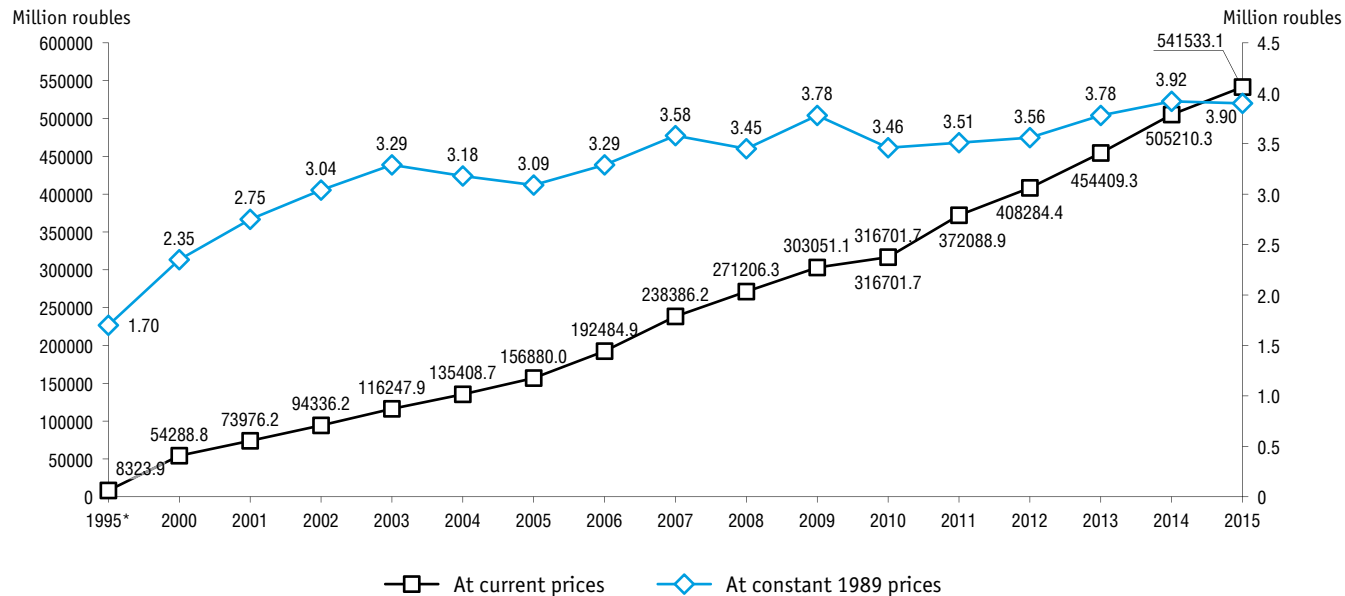
* The ratio of the higher education institutions graduates hired during the year to the number of employees at the end of the year.

5.3.16. GROSS DOMESTIC EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF INSTITUTIONS

(thousand roubles)

	2000	2005	2008	2010	2011	2012	2013	2014	2015
Total	54288781.4	156880029.0	271206280.5	316701679.9	372088873.4	408284378.5	454409251.0	505210341.3	541533094.3
Research institutes	31145022.1	79303185.8	126680440.5	149370680.2	169714137.6	200622676.3	223137546.4	246251822.0	264045184.4
Design organisations, design- and-engineering organisations	13115444.7	51857668.0	91233658.1	99778643.7	117208342.7	104269890.1	118708123.0	140108876.6	142841408.8
Construction project and exploration organisations	539721.1	1604470.7	4511306.2	3690958.0	4688711.6	5827594.8	3579155.2	3567752.9	2380598.7
Industrial enterprises	4726082.4	12633435.9	23918615.0	32838780.9	41251710.9	49952762.8	59346858.0	60962171.4	74693899.2
Pilot plants	294581.2	150835.5	331824.8	398159.1	372177.7	746678.7	808351.2	1749042.3	2223362.2
Others	4467929.9	11330433.1	24530435.9	30624458.0	38853792.9	46864775.8	48829217.2	52570676.1	55348641.0

5.3.17. GROSS DOMESTIC EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR



* Billion roubles.

5.3.18. GROSS DOMESTIC EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY SOURCE OF FUNDS

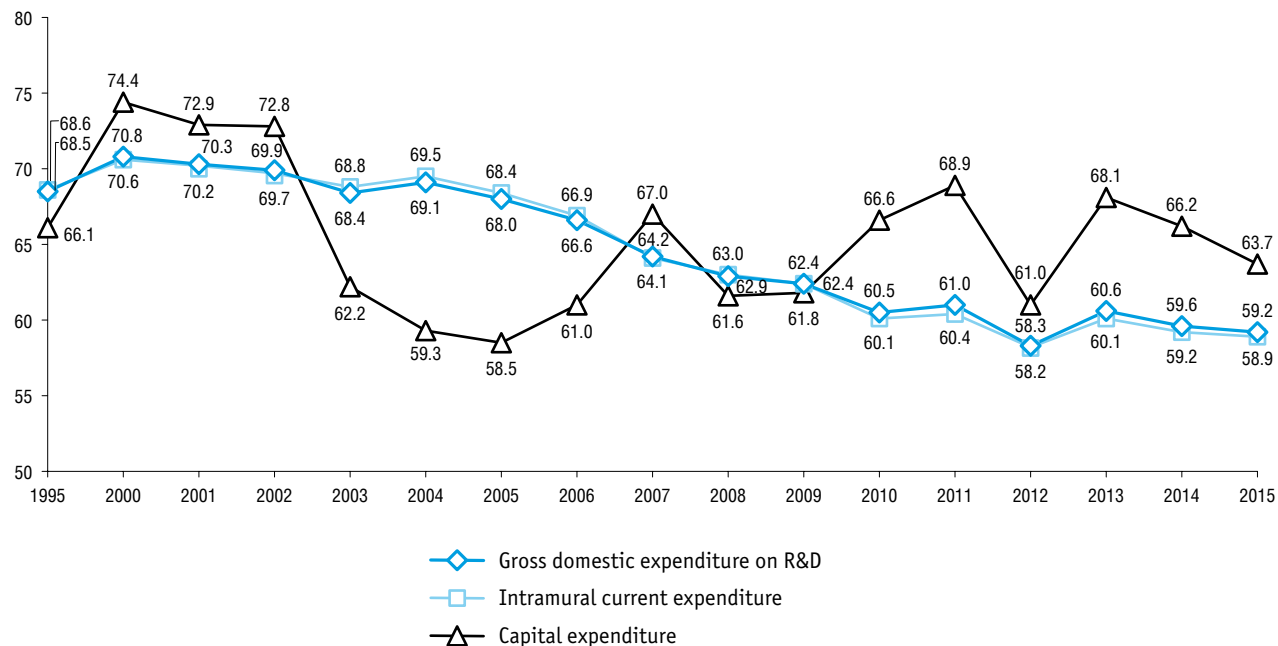
	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
At current prices, thousand roubles, 1995 – million roubles						
1995	8323907.6	4256825.1	3639140.1	822.4	486.8	426633.2
2000	54288781.4	24674880.5	22199361.6	23662.7	18968.0	7371908.6
2002	94336248.9	47710158.8	38602812.7	28047.5	63017.2	7932212.7
2003	116247853.0	59896801.9	44401742.9	77901.7	204665.7	11666740.8
2004	135408690.9	71716243.4	51502628.6	46246.5	71105.3	12072467.1
2005	156880029.0	84032725.4	58460580.8	46809.5	14570.8	14325342.5
2006	192484851.0	100122872.7	68769254.4	34681.0	160678.6	23397364.3
2007	238386207.4	131768069.7	87352197.2	616853.5	163906.9	18485180.1
2008	271206280.5	151975682.0	99123835.8	43931.1	468252.7	19594578.9
2009	303051131.5	173872629.4	104955691.5	60958.8	238908.1	23922943.7
2010	316701679.9	203267110.6	101760706.5	75409.3	427247.1	11171206.4
2011	372088873.4	218291814.8	134043614.4	376915.9	806970.4	18569557.9
2012	408284378.5	246761318.2	143181603.7	240986.2	152505.3	17947965.1
2013	454409251.0	279358934.6	161100909.7	515567.0	88727.4	13345112.3
2014	505210341.3	316622608.3	177116134.2	442911.7	359214.0	10669473.1
2015	541533094.3	343396867.3	185037359.3	561703.2	421868.8	12115295.7

(continued)

	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
	Per cent					
1995	100	51.1	43.7	0.01	0.01	5.1
2000	100	45.5	40.9	0.04	0.03	13.6
2002	100	50.6	40.9	0.03	0.07	8.4
2003	100	51.5	38.2	0.07	0.2	10.0
2004	100	53.0	38.0	0.03	0.05	8.9
2005	100	53.6	37.3	0.03	0.01	9.1
2006	100	52.0	35.7	0.02	0.08	12.2
2007	100	55.3	36.6	0.3	0.07	7.8
2008	100	56.0	36.5	0.02	0.2	7.2
2009	100	57.4	34.6	0.02	0.08	7.9
2010	100	64.2	32.1	0.02	0.1	3.5
2011	100	58.7	36.0	0.1	0.2	5.0
2012	100	60.4	35.1	0.06	0.04	4.4
2013	100	61.5	35.5	0.1	0.02	2.9
2014	100	62.7	35.1	0.09	0.07	2.1
2015	100	63.4	34.2	0.1	0.08	2.2

* Including budget funds, intramural funds and the funds of government sector institutions.

5.3.19. BUSINESS ENTERPRISE SECTOR GROSS DOMESTIC EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF EXPENDITURE



5.3.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF EXPENDITURE

(thousand roubles)

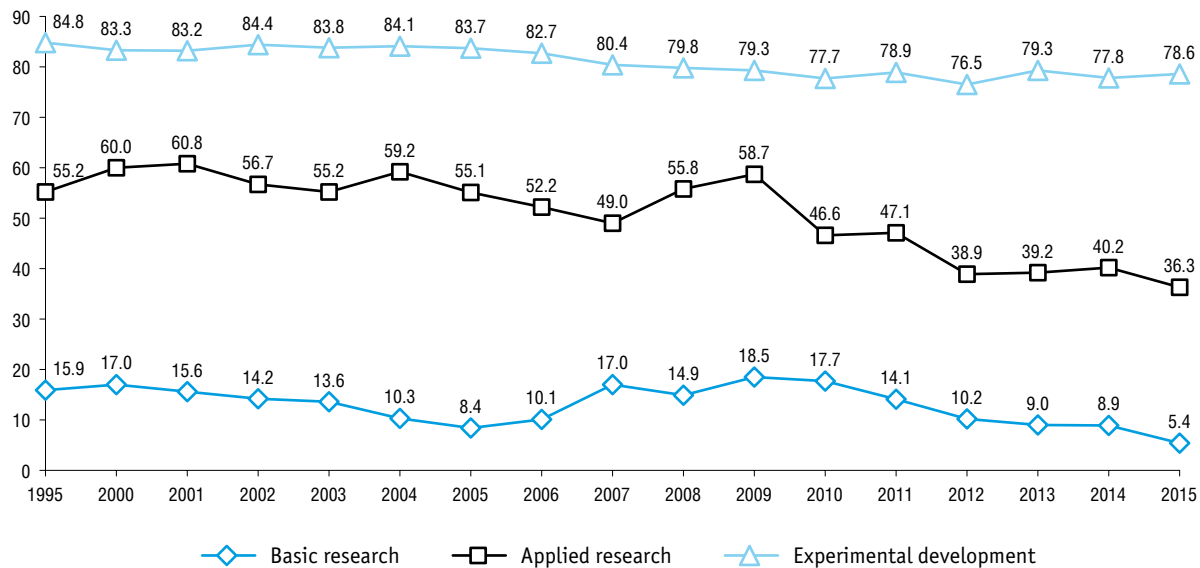
	2005	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D	156880029.0	316701679.9	372088873.4	408284378.5	454409251.0	505210341.3	541533094.3
Intramural current expenditure	151228693.6	294103827.7	343121369.6	380968190.9	420438999.3	470728154.3	503088818.5
Salaries	61762384.5	134771346.7	154670826.0	163680881.0	184301583.4	199981537.7	214055655.0
Of which for R&D personnel*	56579998.4	123576290.3	141005622.8	149328527.6	168490249.3	184318111.2	196822214.9
Social security payments	14652167.0	26089246.1	37534823.2	39738423.4	44519677.6	49274407.7	55348833.5
Equipment	5919453.8	9955224.5	11788168.9	13822393.6	13592306.5	13499794.4	17319573.0
Other material costs	39963918.4	63367540.7	72417381.8	85310764.1	96060693.9	111940812.4	109075443.3
Other current costs	28930769.9	59920469.7	66710169.7	78415728.8	81964737.9	96031602.1	107289313.7
Capital expenditure	5651335.4	22597852.2	28967503.8	27316187.6	33970251.7	34482187.0	38444275.8
Land and buildings	1208092.5	4950198.0	6068422.7	9006103.9	6020259.0	6094066.5	5984058.2
Equipment	3228403.1	14167838.2	16379917.3	13818410.4	17818744.0	19820476.8	21054397.0
Other capital expenditure	1214839.8	3479816.0	6519163.8	4491673.3	10131248.7	8567643.7	11405820.6

* Excluding secondary job employees and those working under labour contracts.

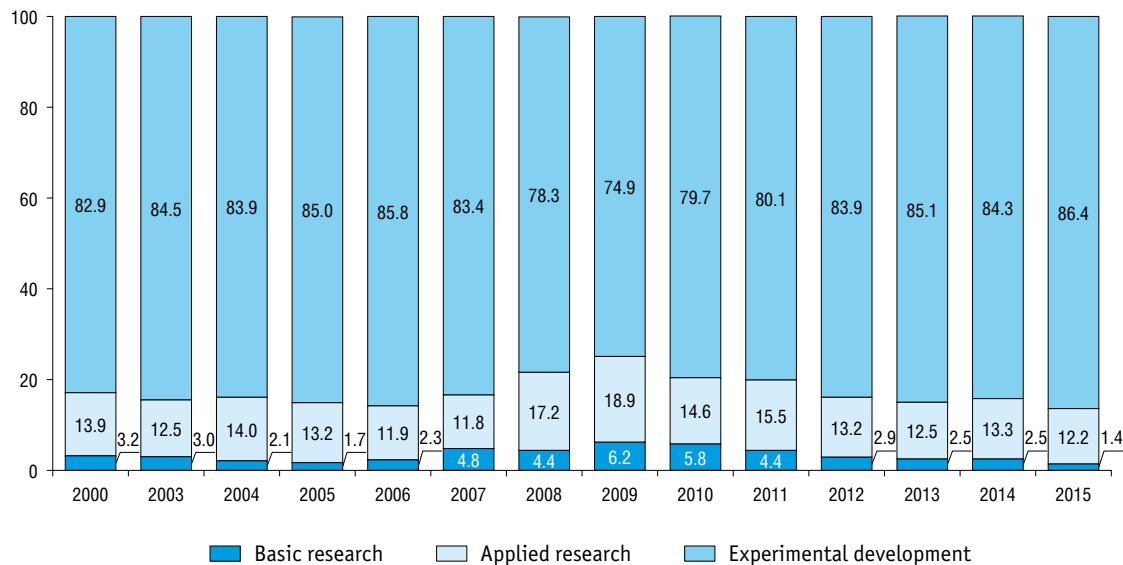
**5.3.21. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF ACTIVITY
AND FIELD OF SCIENCE AND TECHNOLOGY**
(thousand roubles)

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2005							
Intramural current expenditure on R&D	151228693.6	10041430.0	138455122.3	450558.6	1020195.6	1212995.6	48391.5
Basic research	2591506.7	1025517.8	1205156.9	53282.5	236864.8	47440.2	23244.5
Applied research	20026408.8	5053993.0	13842212.4	184566.8	446665.3	489579.6	9391.7
Experimental development	128610778.1	3961919.2	123407753.0	212709.3	336665.5	675975.8	15755.3
2012							
Intramural current expenditure on R&D	380968190.9	27243077.6	347059349.6	1992378.4	1492477.6	2959975.4	220932.3
Basic research	11034975.2	2857779.7	6972175.3	601995.0	201513.8	371427.0	30084.4
Applied research	50351025.6	10971542.8	35740717.8	1045163.7	684025.7	1855202.6	54373.0
Experimental development	319582190.1	13413755.1	304346456.5	345219.7	606938.1	733345.8	136474.9
2013							
Intramural current expenditure on R&D	420438999.3	27242178.5	387371546.1	1725365.5	695005.3	3272145.6	132758.3
Basic research	10319086.1	2228394.9	6697821.2	570043.5	214.9	817156.1	5455.5
Applied research	52414718.7	11542963.9	37944237.8	910860.1	297745.9	1694730.7	24180.3
Experimental development	357705194.5	13470819.7	342729487.1	244461.9	397044.5	760258.8	103122.5
2014							
Intramural current expenditure on R&D	470728154.3	28859233.5	435503592.5	2222531.9	727819.4	3252029.7	162947.3
Basic research	11654667.9	2995756.1	7271091.0	705469.6	60395.0	600783.9	21172.3
Applied research	62451087.5	13258425.5	46200081.4	938617.9	139398.7	1880216.0	34348.0
Experimental development	396622398.9	12605051.9	382032420.1	578444.4	528025.7	771029.8	107427.0
2015							
Intramural current expenditure on R&D	503088818.5	25579412.6	470180938.1	3064111.9	695241.7	3421527.3	147586.9
Basic research	7122577.4	3196716.9	2633478.4	696593.3	47856.6	494091.3	53840.9
Applied research	61520451.3	10793921.5	47539713.2	949480.0	127789.3	2074879.6	34667.7
Experimental development	434445789.8	11588774.2	420007746.5	1418038.6	519595.8	852556.4	59078.3

5.3.22. BUSINESS SECTOR EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



5.3.23. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF ACTIVITY



5.3.24. AVERAGE MONTHLY SALARY OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average monthly salary, roubles, 1995 – thousand roubles	297.6	2519.9	9599.6	15203.6	19345.3	21674.1	25359.7	29174.9	33165.2	36540.8	39855.8	42102.7
As a percentage of the salary:												
in the national economy (=100%)	63.0	113.3	112.2	111.8	111.9	116.3	121.0	124.8	124.5	122.7	122.7	123.9
in manufacturing (=100%)	64.9	106.5	114.0	118.1	120.5	130.7	132.9	133.9	135.3	135.1	135.1	132.2
in construction (=100%)	50.6	95.5	106.2	106.1	104.2	119.6	119.8	123.2	127.8	131.9	135.8	140.9

5.4. Higher Education Sector

5.4.1. R&D INSTITUTIONS IN THE HIGHER EDUCATION SECTOR BY TYPE

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	511	526	539	540	616	603	603	617	696	662	762	777	1124
Higher education institutions	395	390	406	417	500	503	506	517	581	562	673	702	1040
Scientific research institutes (centers)	88	107	109	106	95	80	78	71	67	54	51	37	43
Design organisations, design-and-engineering organisations	18	19	17	14	12	11	11	11	12	12	10	8	7
Pilot plants	1	2	–	–	1	1	1	1	2	4	...*	...*	...*
Others	9	8	7	3	8	8	7	17	34	30	27	29	32

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

5.4.2. R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY TYPE OF INSTITUTIONS

(headcount)

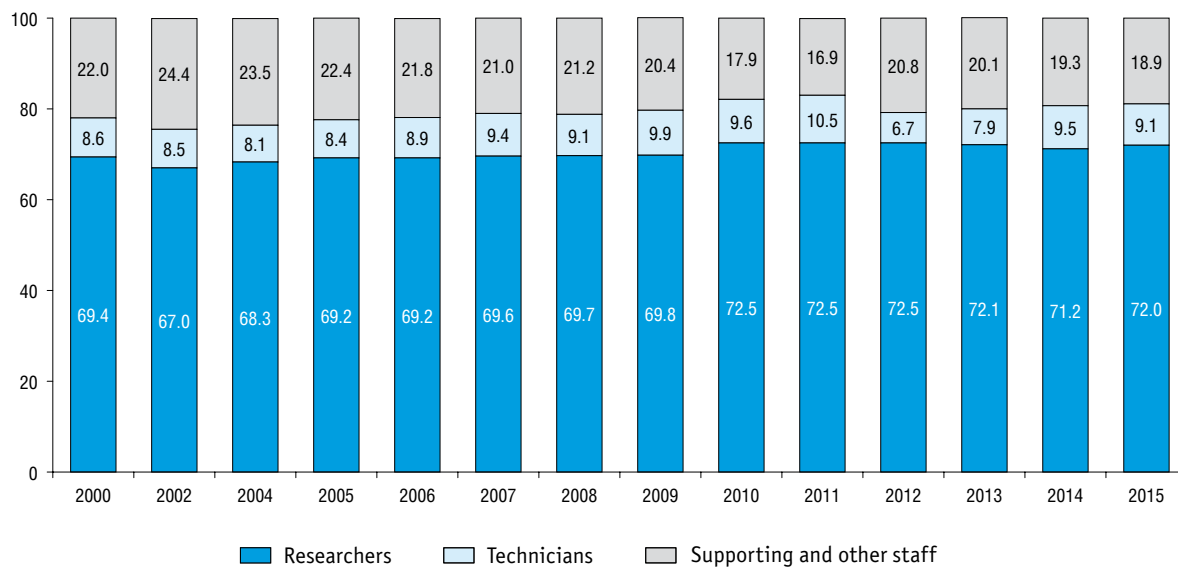
	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	52065	40787	43500	44473	49059	47595	48498	53290	59454	59469	59247	62400	63870
Higher education institutions	40015	31110	33942	35179	40440	40003	41767	46776	53944	53699	54092	58573	60151
Research institutes (centers)	9458	7254	7021	7294	6609	5522	4995	4796	3904	3070	2864	2049	2092
Design organisations, design-and-engineering organisations	2170	2198	1991	1878	1843	1783	1446	1392	1197	1830	1502	1408	1121
Pilot plants	23	4	–	–	2	1	2	2	8	9	...*	...*	...*
Others	399	221	546	122	165	286	288	324	401	861	775	369	506

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282-FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

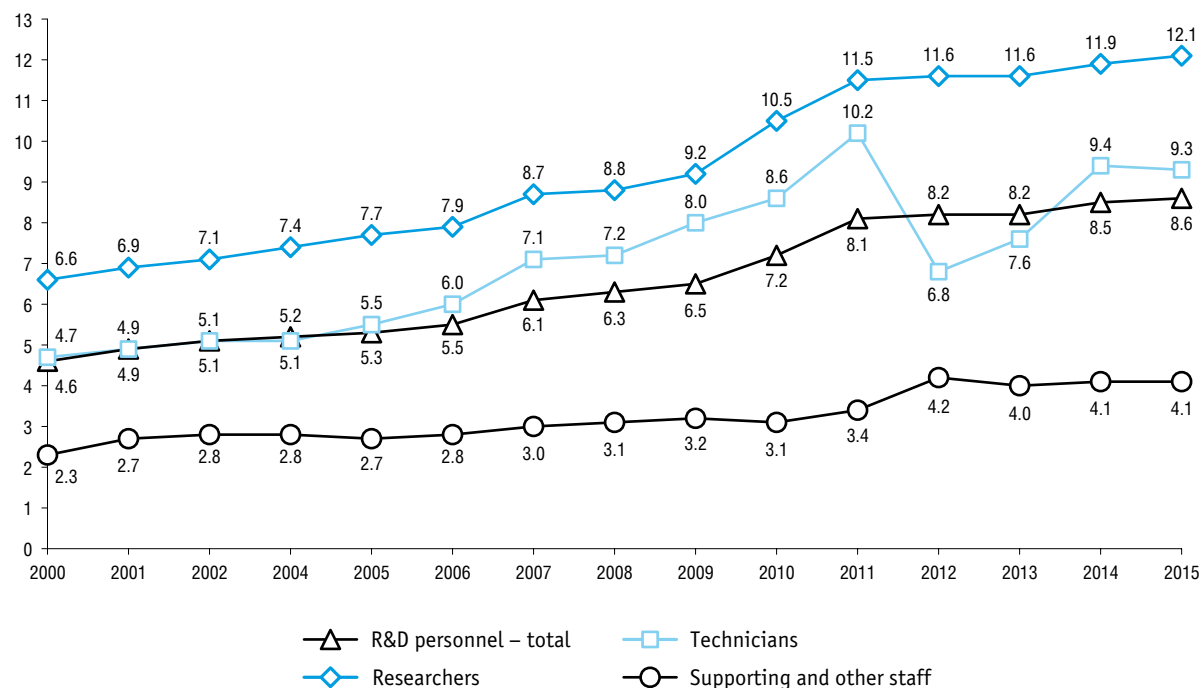
5.4.3. R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY OCCUPATION
(headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	52065	40787	43500	44473	49059	47595	48498	53290	59454	59469	59247	62400	63870
Researchers	35508	28325	30111	30793	34162	33160	33847	38640	43121	43103	42692	44427	45967
Technicians	4010	3509	3658	3972	4606	4349	4778	5095	6256	3998	4670	5939	5836
Supporting staff	7520	5463	6098	5945	6282	6520	6198	6564	7345	9264	8828	9538	9217
Others	5027	3490	3633	3763	4009	3566	3675	2991	2732	3104	3057	2496	2850

5.4.4. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY OCCUPATION



5.4.5. HIGHER EDUCATION SECTOR R&D PERSONNEL AS A PERCENTAGE OF THE TOTAL NUMBER OF R&D PERSONNEL BY OCCUPATION



5.4.6. R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY EDUCATIONAL ATTAINMENT (headcount)

	Total	Higher education	Secondary vocational education	Other education
R&D personnel				
2005	43500	35159	4430	3911
2010	53290	46112	3394	3784
2012	59469	52334	2673	4462
2013	59247	52927	2625	3695
2014	62400	56009	2274	4117
2015	63870	58144	2071	3655
Researchers				
2005	30111	30111	–	–
2010	38640	38640	–	–
2012	43103	43103	–	–
2013	42692	42692	–	–
2014	44427	44427	–	–
2015	45967	45967	–	–
Technicians				
2005	3658	1079	2082	497
2010	5095	2460	1526	1109
2012	3998	1755	987	1256
2013	4670	2570	919	1181
2014	5939	3835	816	1288
2015	5836	4120	742	974

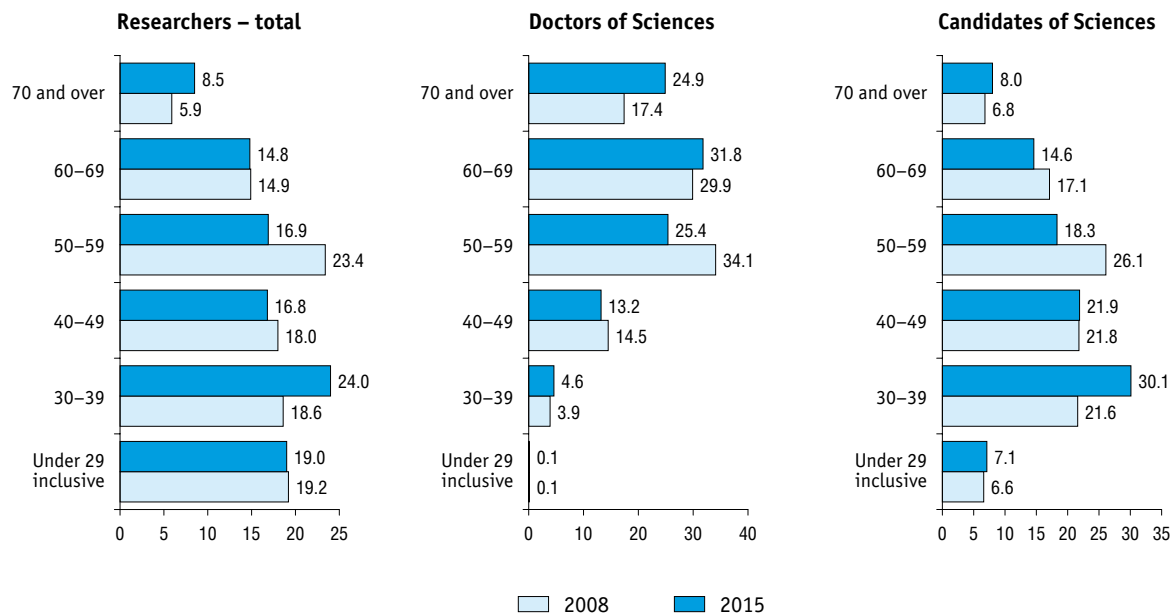
(continued)

	Total	Higher education	Secondary vocational education	Other education
Supporting staff				
2005	6098	2758	1465	1875
2010	6564	3695	1190	1679
2012	9264	5950	1093	2221
2013	8828	5917	1129	1782
2014	9538	6404	976	2158
2015	9217	6068	898	2251
Others				
2005	3633	1211	883	1539
2010	2991	1317	678	996
2012	3104	1526	593	985
2013	3057	1748	577	732
2014	2496	1343	482	671
2015	2850	1989	431	430

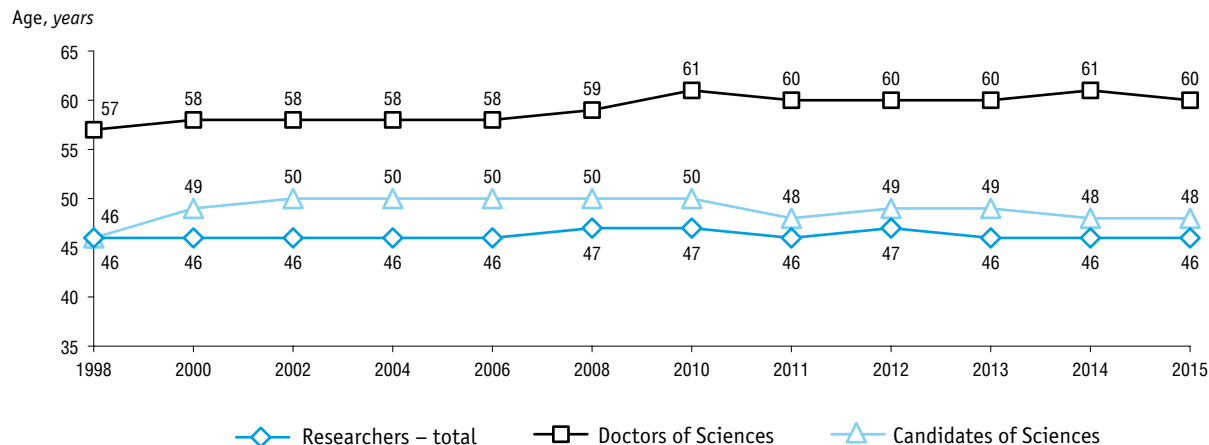
5.4.7. RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY GENDER AND AGE

	2008			2015		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	33160	3439	12040	45967	6318	20866
Age, years:						
under 29 inclusive	6379	4	792	8714	6	1480
30–39	6164	133	2606	11032	288	6275
40–49	5964	499	2619	7742	837	4578
50–54	3999	547	1603	3826	683	1907
55–59	3760	627	1544	3952	924	1905
60–69	4937	1029	2055	6807	2009	3047
70 and over	1957	600	821	3894	1571	1674
Males	19506	2538	6770	24659	4357	10280
Age, years:						
under 29 inclusive	4055	3	448	5125	6	851
30–39	3284	94	1353	5502	203	3011
40–49	3298	349	1412	3562	473	1957
50–54	2951	384	909	1891	425	858
55–59	2224	450	928	2076	619	937
60–69	3063	791	1205	4013	1440	1708
70 and over	1231	467	515	2490	1191	958
Females	13654	901	5270	21308	1961	10586
Age, years:						
under 29 inclusive	2324	1	344	3589		629
30–39	2880	39	1253	5530	85	3264
40–49	2666	150	1207	4180	364	2621
50–54	1648	163	694	1935	258	1049
55–59	1536	177	616	1876	305	968
60–69	1874	238	850	2794	569	1339
70 and over	726	133	306	1404	380	716

5.4.8. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY AGE



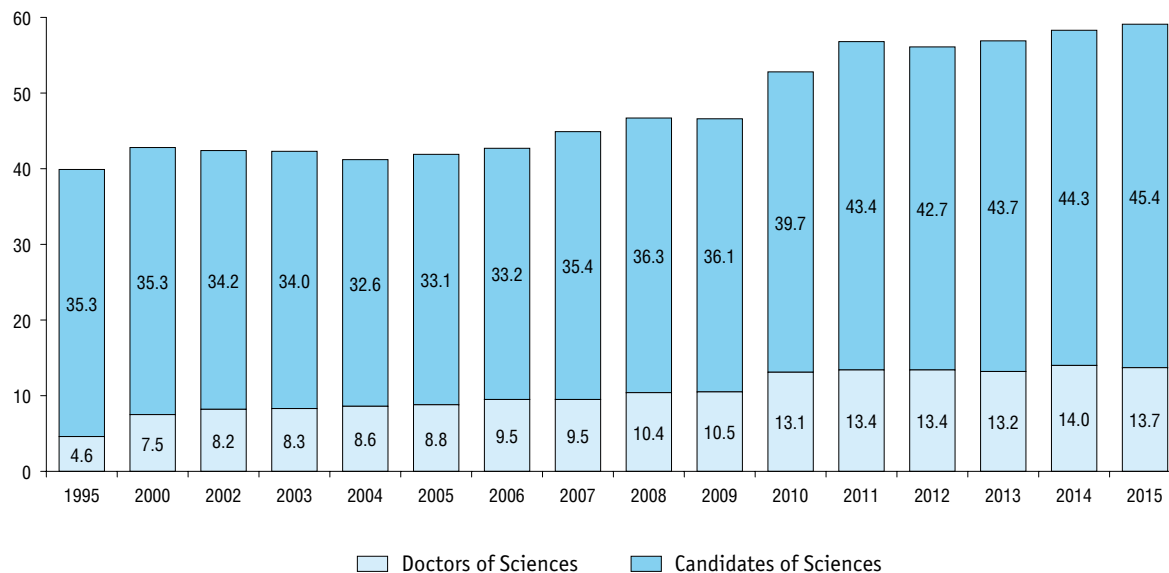
5.4.9. AVERAGE AGE OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR



5.4.10. RESEARCHERS WITH ACADEMIC DEGREES IN THE HIGHER EDUCATION SECTOR (headcount)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Researchers with academic degrees	14162	12113	12618	13153	15330	15479	15774	20423	24502	24144	24306	25899	27184
Doctors of Sciences	1617	2120	2654	2924	3252	3439	3568	5068	5774	5753	5638	6218	6318
Candidates of Sciences	12545	9993	9964	10229	12078	12040	12206	15355	18728	18391	18668	19681	20866

5.4.11. RESEARCHERS WITH ACADEMIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR



5.4.12. RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY (headcount)

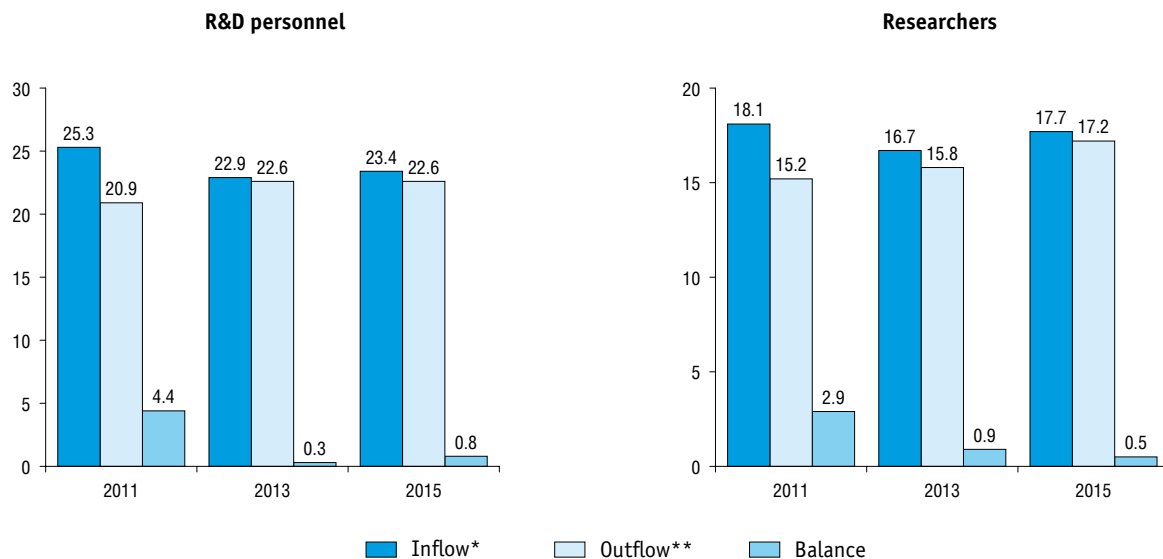
	2008			2013			2014			2015		
	Researchers	Of whom		Researchers	Of whom		Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	33160	3439	12040	42692	5638	18668	44427	6218	19681	45967	6318	20866
Natural sciences	13111	1535	5244	13004	2177	6341	13621	2318	6718	13175	2285	6515
Engineering and Technology	10524	484	2352	11989	716	3088	12403	919	3283	12856	939	3444
Medical sciences	2403	441	1142	2032	458	999	2035	413	956	2018	451	990
Agricultural sciences	933	116	416	1275	235	653	1188	209	625	851	163	421
Social sciences	4309	512	1818	9367	1280	5052	9659	1460	5281	11420	1562	6571
Humanities	1880	351	1068	5025	772	2535	5521	899	2818	5647	918	2925

5.4.13. R&D PERSONNEL TURNOVER IN THE HIGHER EDUCATION SECTOR BY OCCUPATION

(headcount)

	Number at the beginning of the reference year	Hired (inflow)				Left (outflow)				Number at the end of the reference year
		Total	Of whom			Total	Of whom			
			graduates from higher education institutions	graduates from other research institutes	others		left voluntarily	were made redundant	left due to other reasons	
Total										
2005	41601	8770	1475	1388	5907	6871	4096	25	2750	43500
2011	56117	15068	2579	1578	10911	11731	6151	64	5516	59454
2013	59043	13561	1648	2104	9809	13357	6381	212	6764	59247
2015	63192	14971	2293	2788	9890	14293	7256	350	6687	63870
Researchers										
2005	28951	5219	1229	1058	2932	4062	2470	16	1576	30111
2011	41648	7823	1707	1156	4960	6347	3639	42	2666	43121
2013	42229	7140	903	1604	4633	6663	3584	134	2945	42692
2015	45677	8141	1102	1934	5105	7854	4158	226	3470	45967
Technicians										
2005	3451	1030	114	115	801	820	467	1	352	3658
2011	4713	3267	398	136	2733	1723	924	8	791	6256
2013	4490	2260	277	187	1796	2081	870	37	1174	4670
2015	5443	2701	606	186	1909	2276	1318	28	930	5836
Supporting and other staff										
2005	9199	2521	132	215	2174	1989	1159	8	822	9731
2011	9756	3978	474	286	3218	3661	1588	14	2059	10077
2013	12324	4161	468	313	3380	4613	1927	41	2645	11885
2015	12072	4129	585	668	2876	4163	1780	96	2287	12067

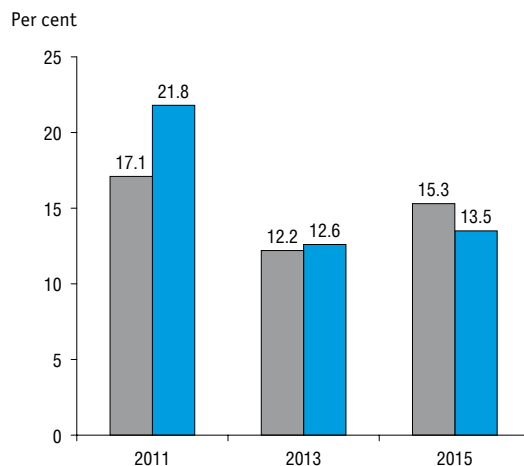
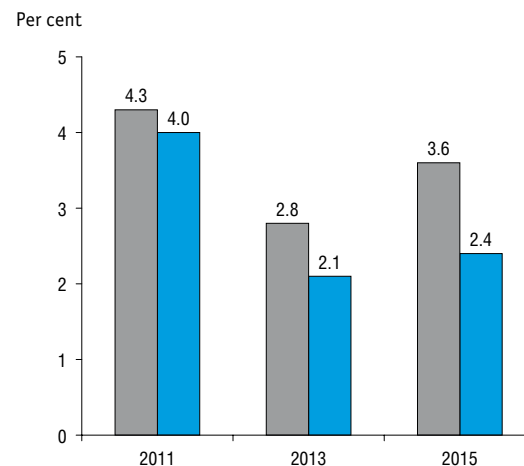
5.4.14. HIRING (INFLOW) AND DEPARTURE (OUTFLOW) OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR



* The ratio of those hired during the year to the number of employees at the end of the year.

** The ratio of those who left during the year to the number of employees at the beginning of the year.

5.4.15. HIRING OF HIGHER EDUCATION GRADUATES (INFLOW) BY INSTITUTIONS IN THE HIGHER EDUCATION SECTOR

Higher education institutions graduates
as a percentage of those hiredHigher education institutions graduates
as a percentage of R&D personnel*

■ R&D personnel – total ■ Researchers

* The ratio of the higher education institutions graduates hired during the year to the number of employees at the end of the year.

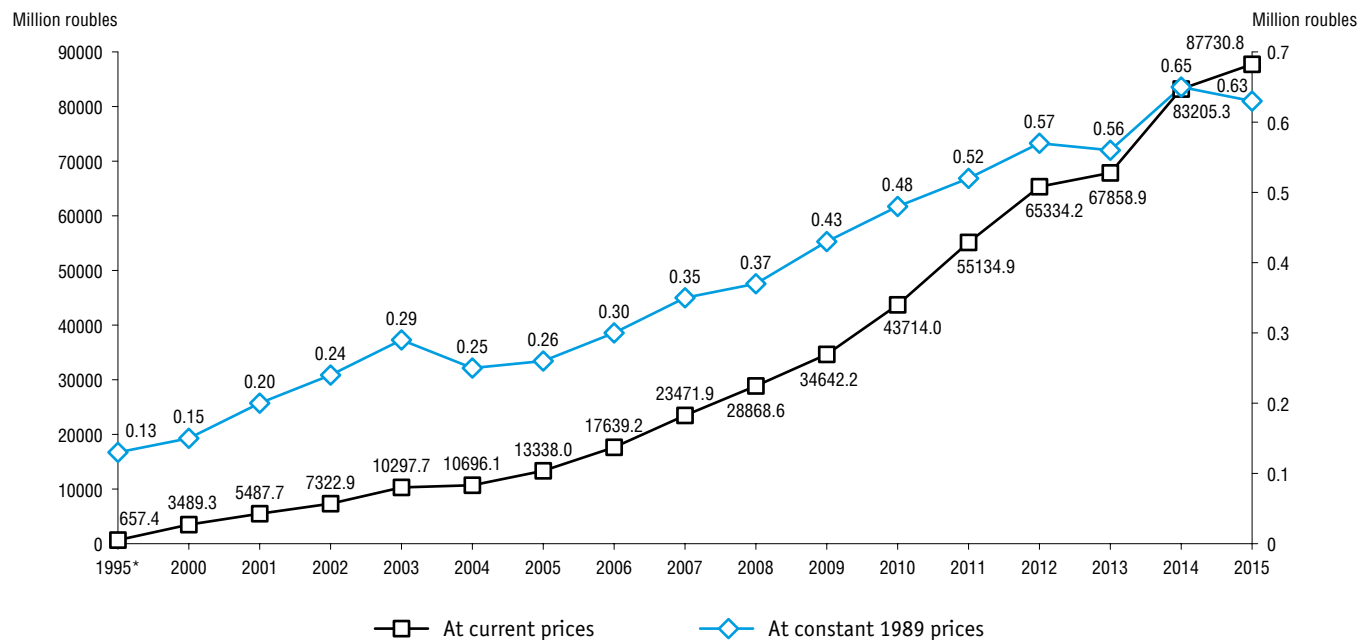
5.4.16. GROSS DOMESTIC EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY TYPE OF INSTITUTIONS

(thousand roubles)

	2000	2006	2007	2008	2010	2011	2012	2013	2014	2015
Total	3489342.2	17639173.8	23471870.9	28868566.7	43714007.3	55134893.9	65334232.1	67858855.1	83205260.1	87730781.4
Higher education institutions	2777397.1	14672493.3	20110291.8	25254713.6	38787366.4	51055347.1	59717923.7	63138131.0	77975805.2	82972415.2
Scientific research institutes (centers)	528449.7	2362999.9	2444732.5	2552781.1	3429235.6	2935458.1	3571846.1	3022702.5	3616147.7	3382500.2
Design organisations, design-and-engineering organisations	157818.5	600446.4	875313.6	869259.6	984428.5	809586.0	1344028.6	1090711.3	1092686.4	1114835.9
Pilot plants	78.5	–	14145.0	24376.0	26584.0	12042.6	14652.7	...*	...*	...*
Others	25598.4	3234.2	27388.0	167436.4	486392.8	322460.1	685781.0	596309.4	515769.8	253618.1

* The data are not published in order to ensure the confidentiality of the primary statistics received from organisations, in accordance with the Federal Law of 29.11.2007 № 282 FZ 'On the official statistical accounting and state statistics system of the Russian Federation' (Art. 4, par. 5; Art. 9, par. 1).

5.4.17. GROSS DOMESTIC EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR



* Billion roubles.

5.4.18. GROSS DOMESTIC EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY SOURCE OF FUNDS

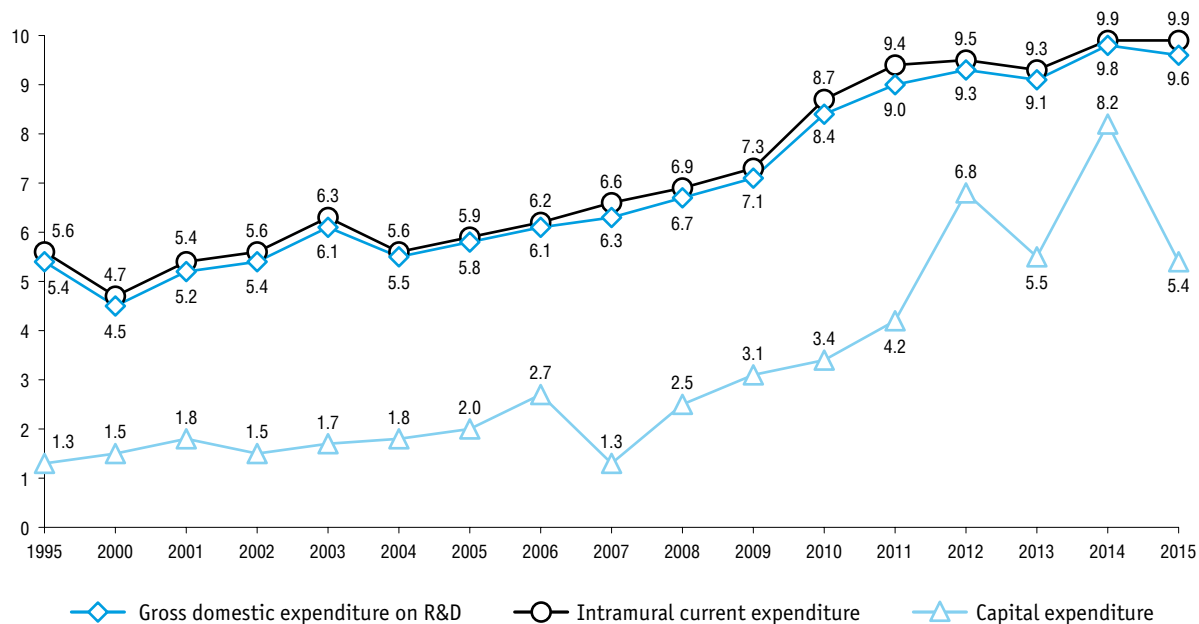
	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
At current prices, thousand roubles, 1995 – million roubles						
1995	657374.0	440429.9	181015.3	27407.6	1279.1	7242.1
2000	3489342.2	2220574.3	951898.2	178004.2	6651.5	132214.0
2001	5487653.7	3443940.3	1454005.4	297109.0	8069.0	284530.0
2002	7322943.2	4458540.7	1989239.9	382058.3	12154.0	480950.3
2003	10297745.0	6294220.6	2870119.3	704239.2	12759.1	416406.8
2004	10696125.8	6269141.4	3488281.5	597899.1	8162.1	332641.7
2005	13337987.1	7982229.6	3911201.8	889069.7	20503.0	534983.0
2006	17639173.8	10350996.7	5169607.6	1505274.5	26181.7	587113.3
2007	23471870.9	13931491.1	7267861.9	1573278.8	64898.0	634341.1
2008	28868566.7	18003735.9	8244450.2	1758509.8	84419.2	777451.6
2009	34642216.7	24181368.4	7769897.9	1741764.5	95595.8	853590.1
2010	43714007.3	30017817.7	10724045.9	2154774.3	55055.8	762313.6
2011	55134893.9	37047554.1	13224580.6	4030900.0	93584.3	738274.9
2012	65334232.1	40803297.5	17709405.2	5441235.5	371292.2	1009001.7
2013	67858855.1	40378679.8	18663427.9	7080091.0	448892.7	1287763.7
2014	83205260.1	50496387.8	22607546.6	8215233.9	506189.0	1379902.8
2015	87730781.4	51570251.1	24028351.9	9979551.2	671465.0	1481162.2

(continued)

	Total	Government sector funds*	Business enterprise sector funds	Higher education sector funds	Private non-profit sector funds	Funds from abroad
	Per cent					
1995	100	67.0	27.5	4.2	0.2	1.1
2000	100	63.6	27.3	5.1	0.2	3.8
2001	100	62.8	26.5	5.4	0.1	5.2
2002	100	60.9	27.2	5.2	0.2	6.6
2003	100	61.1	27.9	6.8	0.1	4.0
2004	100	58.6	32.6	5.6	0.08	3.1
2005	100	59.8	29.3	6.7	0.2	4.0
2006	100	58.7	29.3	8.5	0.1	3.3
2007	100	59.4	31.0	6.7	0.3	2.7
2008	100	62.4	28.6	6.1	0.3	2.7
2009	100	69.8	22.4	5.0	0.3	2.5
2010	100	68.7	24.5	4.9	0.1	1.7
2011	100	67.2	24.0	7.3	0.2	1.3
2012	100	62.5	27.1	8.3	0.6	1.5
2013	100	59.5	27.5	10.4	0.7	1.9
2014	100	60.7	27.2	9.9	0.6	1.7
2015	100	58.8	27.4	11.4	0.8	1.7

* Including budget funds, intramural funds and the funds of government sector institutions.

5.4.19. HIGHER EDUCATION SECTOR GROSS DOMESTIC EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF EXPENDITURE



5.4.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY TYPE OF EXPENDITURE
(thousand roubles)

	2005	2010	2011	2012	2013	2014	2015
Gross domestic expenditure on R&D	13337987.1	43714007.3	55134893.9	65334232.1	67858855.1	83205260.1	87730781.4
Intramural current expenditure	13144292.5	42552245.4	53389079.3	62268471.4	65103832.7	78939146.3	84495233.0
Salaries	6952057.5	25267352.4	31150804.4	35432527.8	37483889.6	45381722.2	48945642.1
Of which for R&D personnel*	3552276.8	14033490.5	16496816.3	19671272.1	21683297.6	25919161.2	27878480.3
Social security payments	1654258.7	5260709.4	7630274.5	8475705.7	8920077.8	10651630.2	12471272.2
Equipment	917350.6	2639343.7	2969583.7	3336796.8	3288338.4	4767932.9	3708006.7
Other material costs	1501392.4	3344896.4	3695390.0	5072129.7	5585226.3	6487280.5	6193042.0
Other current costs	2119233.3	6039943.5	7943026.7	9951311.4	9826300.6	11650580.5	13177270.0
Capital expenditure	193694.6	1161761.9	1745814.6	3065760.7	2755022.4	4266113.8	3235548.4
Land and buildings	39711.4	14186.1	67000.0	106798.5	233349.2	645364.7	141573.3
Equipment	104359.6	1068873.2	1622614.3	2688993.0	2133749.9	2561153.5	2375951.4
Other capital expenditure	49623.6	78702.6	56200.3	269969.2	387923.3	1059595.6	718023.7

* Excluding secondary job employees and those working under labour contracts.

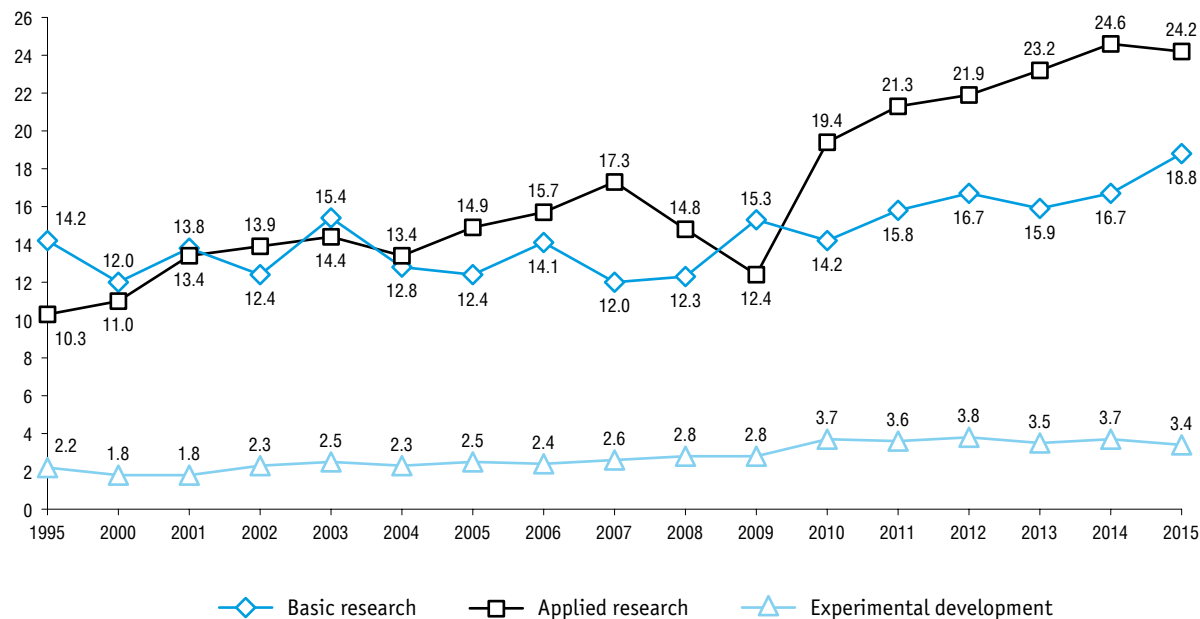
**5.4.21. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY TYPE OF ACTIVITY
AND FIELD OF SCIENCE AND TECHNOLOGY**
(thousand roubles)

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2005							
Intramural current expenditure on R&D	13144292.5	3896908.4	6853399.7	378448.2	200121.3	1419552.8	395862.1
Basic research	3841327.6	2342791.4	751584.6	147772.6	31818.6	342156.9	225203.5
Applied research	5405410.3	1112036.2	2918946.4	161855.9	121828.4	949311.8	141431.6
Experimental development	3897554.6	442080.8	3182868.7	68819.7	46474.3	128084.1	29227.0
2012							
Intramural current expenditure on R&D	62268471.4	16680876.1	29103142.6	2423858.7	1335727.7	9954116.6	2770749.7
Basic research	18092897.7	9987728.3	2764446.8	790365.8	228012.1	2720694.0	1601650.5
Applied research	28324950.6	4983014.1	14319866.5	1283660.8	903775.9	5941367.0	8932666.3
Experimental development	15850623.1	1710133.7	12018829.3	349832.1	203939.7	1292055.4	275832.9
2013							
Intramural current expenditure on R&D	65103832.7	17390347.8	29875049.0	2969687.3	1342285.6	10615711.4	2910751.6
Basic research	18292483.8	9321872.1	3188442.9	899868.3	184993.8	3200249.8	1497056.9
Applied research	31034270.9	6043026.6	15030689.6	1593736.0	898069.9	6307037.3	1161711.5
Experimental development	15777078.0	2025449.1	11655916.5	476083.0	259221.9	1108424.3	251983.2

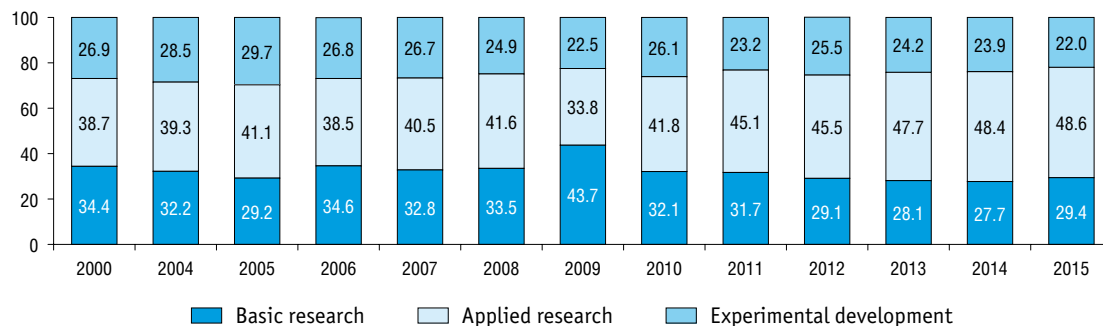
(continued)

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
2014							
Intramural current expenditure on R&D	78939146.3	22847258.1	34368948.3	4319356.6	1519234.5	12390936.4	3493412.4
Basic research	21840738.8	11783175.6	3215755.1	1160052.0	158747.2	3908850.7	1614158.2
Applied research	38214808.7	8240598.6	17468661.1	2682946.2	1133884.9	7048722.5	1639995.4
Experimental development	18883598.8	2823483.9	13684532.1	476358.4	226602.4	1433363.2	239258.8
2015							
Intramural current expenditure on R&D	84495233.0	24471293.5	36048768.8	4478205.2	1515246.7	12800336.7	5181382.1
Basic research	24839057.2	13659393.9	3644828.6	1348438.7	193512.2	3664822.7	2328061.1
Applied research	41098469.1	8214107.1	18786848.4	2576517.7	1171765.9	7925797.8	2423432.2
Experimental development	18557706.7	2597792.5	13617091.8	553248.8	149968.6	1209716.2	429888.8

5.4.22. HIGHER EDUCATION SECTOR EXPENDITURE ON R&D AS A PERCENTAGE OF THE TOTAL INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



5.4.23. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY TYPE OF ACTIVITY



5.4.24. AVERAGE MONTHLY SALARY OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average monthly salary, roubles, 1995 – thousand roubles	280.1	1400.3	7042.0	12233.1	16812.7	21191.5	23716.4	24963.9	30915.1	34101.0	41258.6	41850.5
As a percentage of the salary:												
in the national economy (=100%)	59.3	63.0	82.3	90.0	97.2	113.7	113.2	106.8	116.1	114.5	127.0	123.2
in manufacturing (=100%)	61.1	59.2	83.6	95.0	104.8	127.8	124.3	114.6	126.1	126.1	139.8	131.4
in construction (=100%)	47.7	53.0	77.9	85.3	90.5	116.9	112.0	105.4	119.1	123.1	140.6	140.0



6. R&D Output

6.1. PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS BY DOCUMENT TYPE

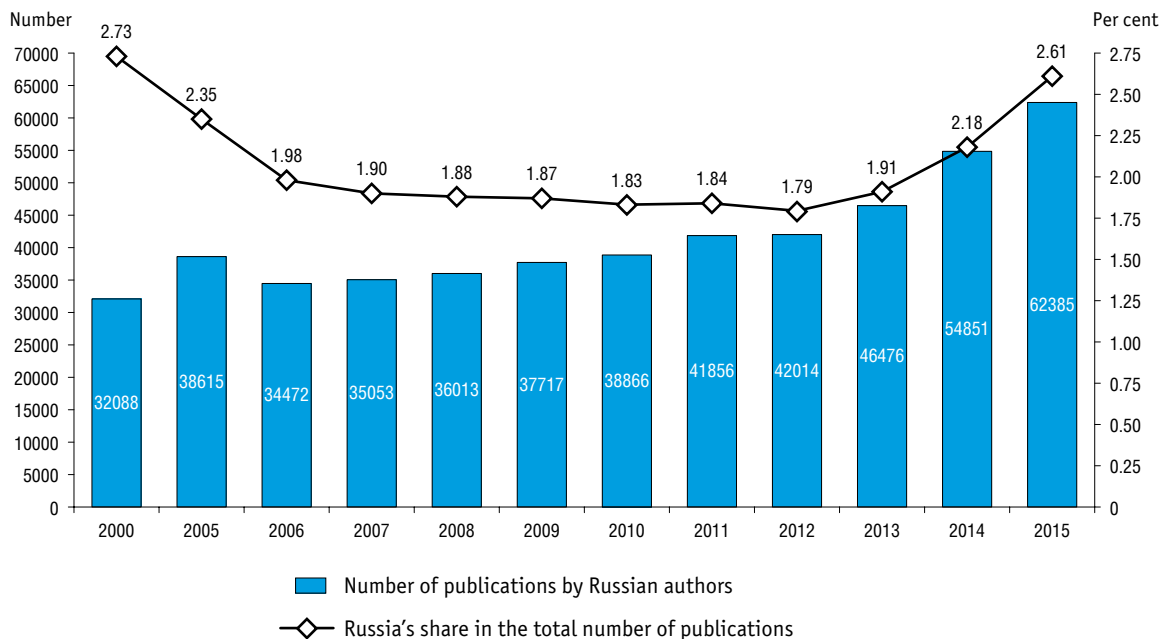
	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Publications – total	32 253	39 136	35 055	35 723	36 832	38 596	39 899	43 331	45 089	48 145	56 446	64 237
Articles	28 589	28 970	26 346	27 901	29 632	31 361	31 578	33 970	32 853	38 018	43 004	48 840
Conference papers	2 858	8 220	7 088	6 453	5 698	5 664	6 489	6 696	7 749	7 204	10 416	11 806
Reviews	641	1 425	1 038	699	683	692	799	1 190	1 412	1 254	1 431	1 739
Other	165	521	583	670	819	879	1 033	1 475	3 075	1 669	1 595	1 852

6.2. PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE BY DOCUMENT TYPE*

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Publications – total	32 683	30 543	29 634	31 212	33 430	33 685	32 415	34 050	34 184	36 816	41 399	48 891
Articles	27 020	24 383	23 775	25 081	26 926	27 605	26 894	28 501	27 738	29 034	30 128	34 166
Conference papers	7 290	6 443	5 787	5 900	5 076	4 568	3 332	2 957	3 336	3 711	7 124	11 388
Reviews	633	681	750	773	865	878	772	730	805	857	872	1 046
Other	1 362	2 120	2 106	2 220	2 594	2 469	2 685	2 752	2 775	3 674	3 560	3 417

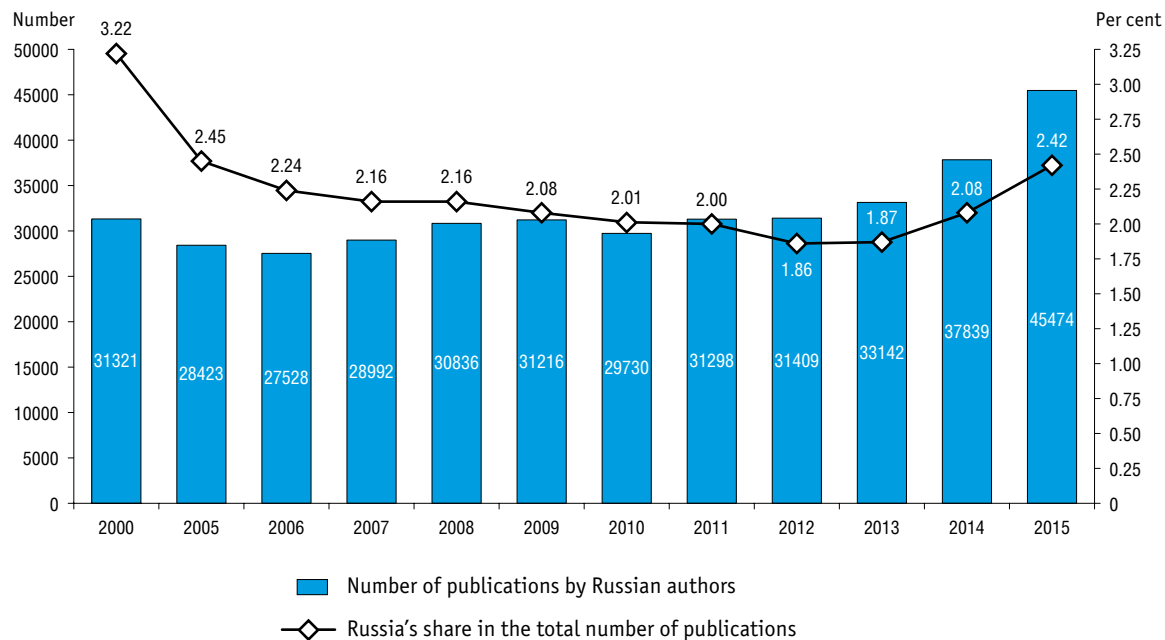
* Some publications may be classified both as articles and conference papers.

6.3. PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS*



* In sections 6.3–6.8 the term ‘publication’ means three types of documents: articles, reviews and conference papers.

6.4. PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE



6.5. ARTICLES BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS



6.6. ARTICLES BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE



6.7. PERCENTAGE DISTRIBUTION OF PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS BY FIELD OF SCIENCE AND TECHNOLOGY*

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Russia												
Natural sciences and exact sciences	67.6	58.5	65.3	65.0	67.1	66.2	65.8	63.4	61.5	59.5	57.8	56.1
Engineering and technology	27.2	27.5	25.8	28.1	28.2	29.7	29.1	29.0	29.0	29.1	29.3	29.4
Medical sciences	4.2	3.4	4.2	4.1	5.3	5.1	5.5	6.0	7.6	7.8	7.8	7.7
Agricultural sciences	3.0	2.3	2.9	2.9	3.1	3.3	3.3	3.7	3.5	3.4	3.5	3.8
Social sciences	1.1	1.5	1.8	2.2	2.2	2.7	2.4	2.8	4.2	3.8	4.6	6.1
Humanities	0.1	0.3	0.4	0.4	0.3	0.6	0.5	0.7	1.1	1.1	1.9	2.5
World total												
Natural sciences and exact sciences	45.2	42.1	44.5	45.6	47.7	48.7	47.3	45.8	45.1	44.3	44.0	45.1
Engineering and technology	21.9	22.1	24.3	26.0	27.6	27.4	26.9	25.9	25.0	25.0	25.3	26.4
Medical sciences	26.3	22.1	22.6	22.3	23.2	23.9	23.7	23.4	23.5	23.2	23.0	23.6
Agricultural sciences	6.3	5.5	5.8	5.8	5.9	5.6	5.5	5.6	5.5	5.4	5.3	5.5
Social sciences	7.9	8.4	9.1	9.8	10.4	10.7	11.0	10.9	10.6	10.5	10.7	11.0
Humanities	1.1	2.2	2.2	2.3	2.3	2.4	2.6	3.1	3.8	3.8	3.8	3.6

* The sciences are grouped in accordance with the OECD Fields of Science Classification based on the transitional table provided by Greek National Documentation Centre. The sum in the column may not add up to 100% because one publication may belong to two and more fields of science.

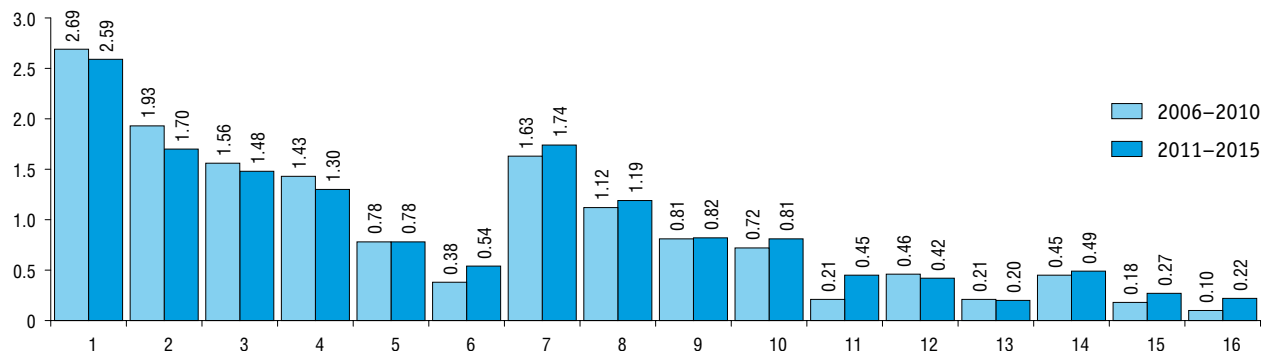
6.8. PERCENTAGE DISTRIBUTION OF PUBLICATIONS BY RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE BY FIELD OF SCIENCE AND TECHNOLOGY*

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Russia												
Natural sciences and exact sciences	80.1	80.7	80.5	79.6	78.8	78.1	78.7	78.3	76.9	76.4	74.7	76.0
Engineering and technology	27.6	27.4	25.7	26.6	26.6	25.9	23.5	23.8	25.8	26.0	30.2	28.6
Medical sciences	6.4	7.2	7.2	7.8	7.6	7.7	7.9	8.1	8.5	8.6	7.1	7.4
Agricultural sciences	1.1	1.0	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9
Social sciences	2.5	2.5	1.9	2.0	1.8	2.1	2.3	2.7	3.1	3.3	3.9	4.2
Humanities	0.6	0.6	0.7	0.8	0.7	1.3	1.4	1.1	1.5	1.4	1.9	2.2
World total												
Natural sciences and exact sciences	52.2	54.2	54.4	54.0	52.9	52.3	50.7	50.5	49.6	50.0	50.5	51.8
Engineering and technology	26.4	28.3	29.1	31.7	31.5	31.4	28.8	29.3	31.4	31.9	31.2	28.3
Medical sciences	27.8	26.2	25.9	25.7	25.8	25.5	26.9	26.6	25.9	25.7	25.7	27.3
Agricultural sciences	4.5	4.3	4.2	4.4	4.4	4.3	4.4	4.4	4.2	4.0	4.0	4.2
Social sciences	8.5	7.9	8.0	8.6	9.5	9.8	10.4	10.3	9.6	9.9	10.0	9.9
Humanities	4.7	3.9	4.0	4.1	5.0	4.5	3.9	3.8	3.8	3.9	3.9	3.4

* The sciences are grouped in accordance with the OECD Fields of Science Classification based on the transitional table provided by Thomson Reuters. The sum in the column may not add up to 100% because one publication may belong to two and more fields of science.

6.9. RUSSIA'S SCIENTIFIC SPECIALISATION INDICES BY PUBLICATION IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS BY FIELD OF SCIENCE AND TECHNOLOGY

Natural Sciences, Engineering and Technology, Medical Sciences



Natural Sciences

- 1 – Physical sciences
- 2 – Chemical sciences
- 3 – Mathematics
- 4 – Earth and related Environmental sciences
- 5 – Biological sciences
- 6 – Computer and information sciences

Engineering and Technology

- 7 – Materials engineering
- 8 – Chemical engineering

- 9 – Electrical engineering, electronic engineering, information engineering

- 10 – Mechanical engineering

- 11 – Medical Sciences

- 12 – Energy and environmental engineering

- 13 – Civil engineering

Medical sciences

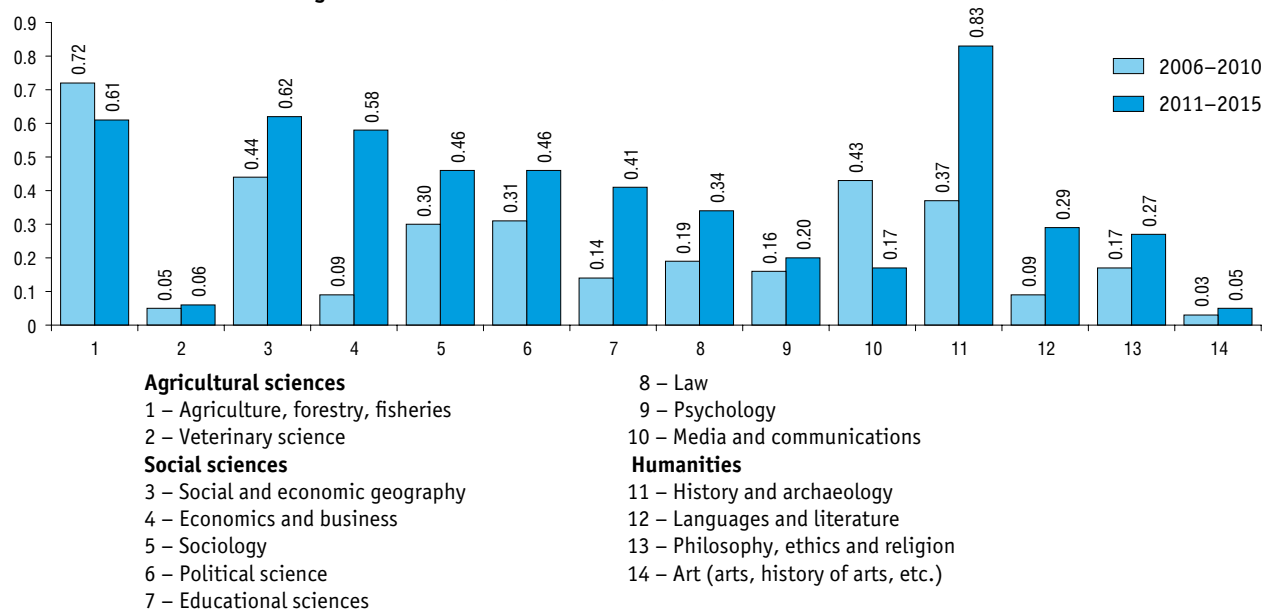
- 14 – Basic medicine

- 15 – Clinical medicine

- 16 – Health sciences

(continued)

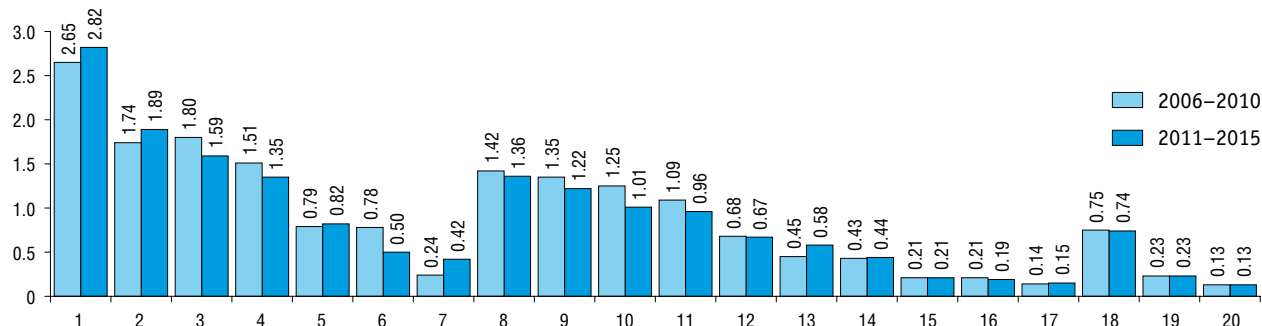
Agricultural sciences, social sciences, humanities



* The sciences are grouped in accordance with the OECD Fields of Science Classification based on the transitional table provided by the Greek National Documentation Centre. The graph does not illustrate the following fields and disciplines: Interdisciplinary Research, Environmental Biotechnology, Nano-technology, Animal and Dairy Science, because they are not present in the chart.

6.10. RUSSIA'S SCIENTIFIC SPECIALISATION INDICES (REVEALED COMPARATIVE ADVANTAGE) BY PUBLICATION IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE BY FIELD OF SCIENCE AND TECHNOLOGY*

Natural Sciences, Engineering and Technology, Medical Sciences



Natural Sciences

- 1 – Physical sciences
- 2 – Mathematics
- 3 – Chemical sciences
- 4 – Earth and related environmental sciences
- 5 – Biological sciences
- 6 – Interdisciplinary research
- 7 – Computer and information sciences

Engineering and technology

- 8 – Mechanical engineering
- 9 – Materials science and engineering
- 10 – Nano-technology

- 11 – Chemical engineering

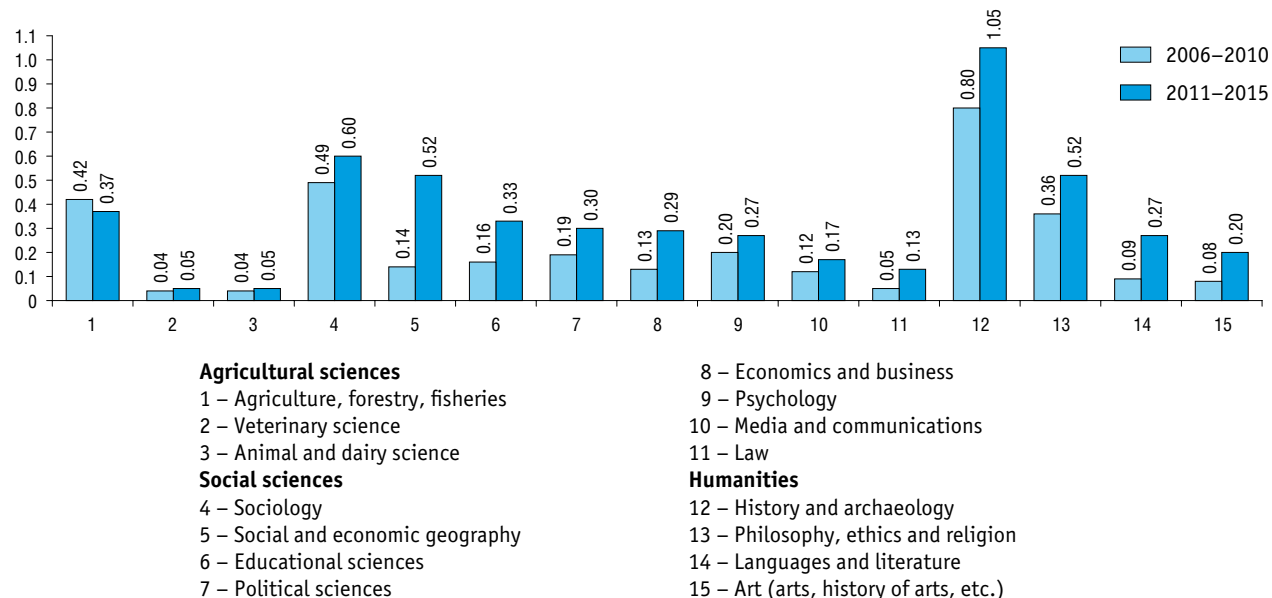
- 12 – Energy and environmental engineering
- 13 – Electrical engineering, electronic engineering, information engineering
- 14 – Environmental biotechnology
- 15 – Industrial biotechnology
- 16 – Medical engineering
- 17 – Civil engineering

Medical sciences

- 18 – Basic medicine
- 19 – Clinical medicine
- 20 – Health sciences

(continued)

Agricultural sciences, social sciences, humanities

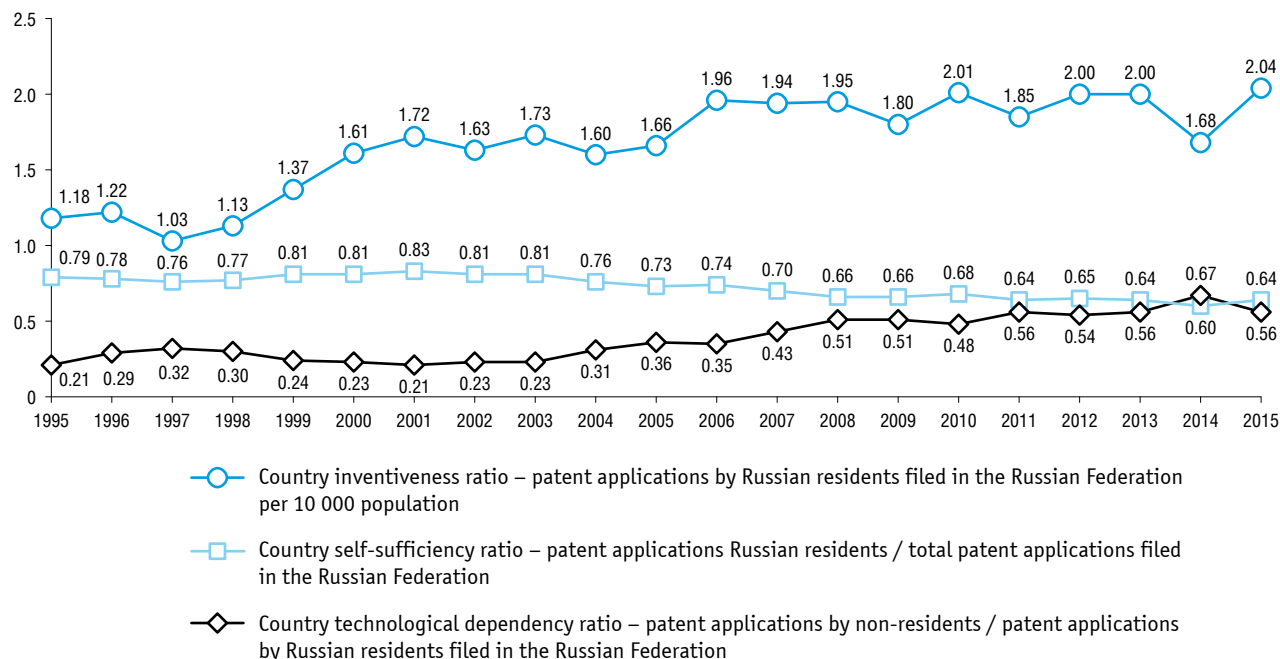


* The sciences are grouped in accordance with the OECD Fields of Science Classification based on the transitional table provided by Thomson Reuters.

6.11. PATENT APPLICATIONS AND PATENTS FOR AN INVENTION GRANTED

	1995	2000	2005	2010	2011	2012	2013	2014	2015
Patent applications filed in the Russian Federation	22202	28688	32254	42500	41414	44211	44914	40308	45517
by Russian residents	17551	23377	23644	28722	26495	28701	28765	24072	29269
by non-residents	4651	5311	8610	13778	14919	15510	16149	16236	16248
Patents granted in the Russian Federation	31556	17592	23390	30322	29999	32880	31638	33950	34706
by Russian residents	20861	14444	19447	21627	20339	22481	21378	23065	22560
by non-residents	4772	3148	3943	8695	9660	10399	10260	10885	12146
Valid Russian Federation patents	76186	144325	123089	181904	168558	181515	194248	208320	218974

6.12. INDICATORS OF PATENT ACTIVITY

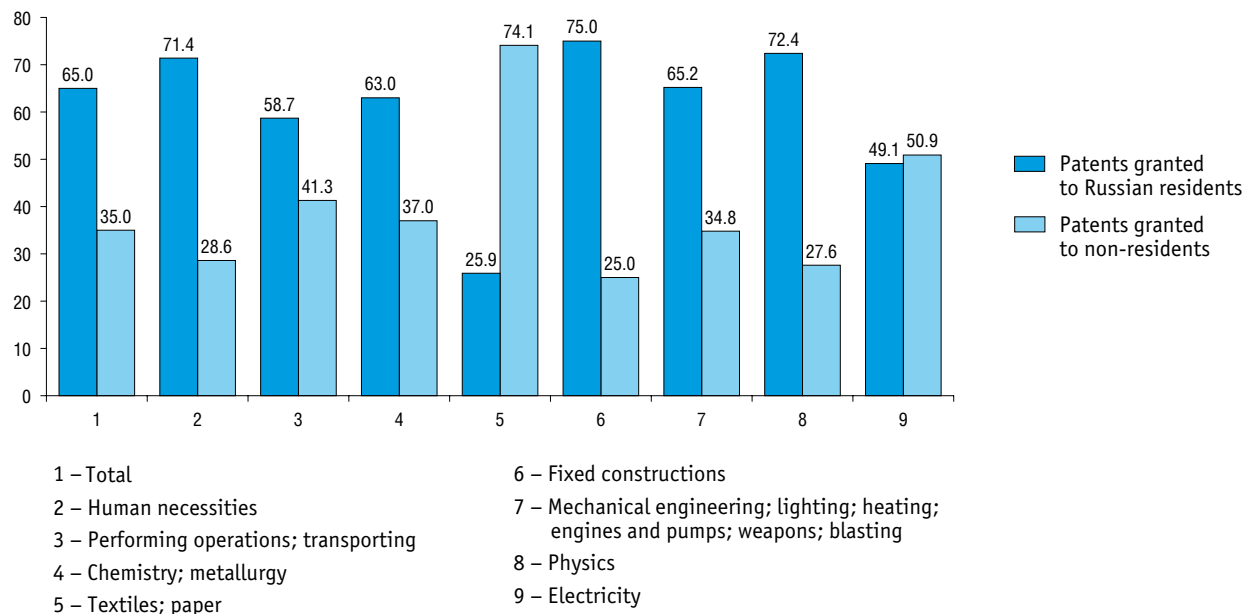


6.13. PATENTS GRANTED IN THE RUSSIAN FEDERATION BY SECTION OF THE INTERNATIONAL PATENT CLASSIFICATION*

	1995	2000	2005	2010	2011	2012	2013	2014	2015
Total	25633	17592	23390	30322	29999	32880	31638	33950	34706
A. Human necessities	4207	4347	6703	8468	8907	9506	8042	9890	8283
B. Performing operations; transporting	6129	2905	3669	4711	4412	4969	4965	5331	5618
C. Chemistry; metallurgy	4529	3332	3645	5167	5512	5524	5779	5154	5910
D. Textiles; paper	437	197	216	320	301	274	271	305	266
E. Fixed constructions	2042	1156	1659	1977	1603	1898	1807	2033	2068
F. Mechanical engineering; lighting; heating; engines and pumps; weapons; blasting	3033	2144	2634	3062	2761	3246	3453	3459	3824
G. Physics	3083	2172	3068	3734	3881	4381	4285	4484	5231
H. Electricity	2173	1339	1796	2883	2622	3082	3036	3294	3506

* Patents granted to Russian residents and non-resident applicants.

6.14. PERCENTAGE DISTRIBUTION OF PATENTS GRANTED IN THE RUSSIAN FEDERATION BY ASSIGNEE AND SECTION OF THE INTERNATIONAL PATENT CLASSIFICATION: 2015



6.15. UTILITY MODEL PATENT APPLICATIONS AND PATENTS GRANTED

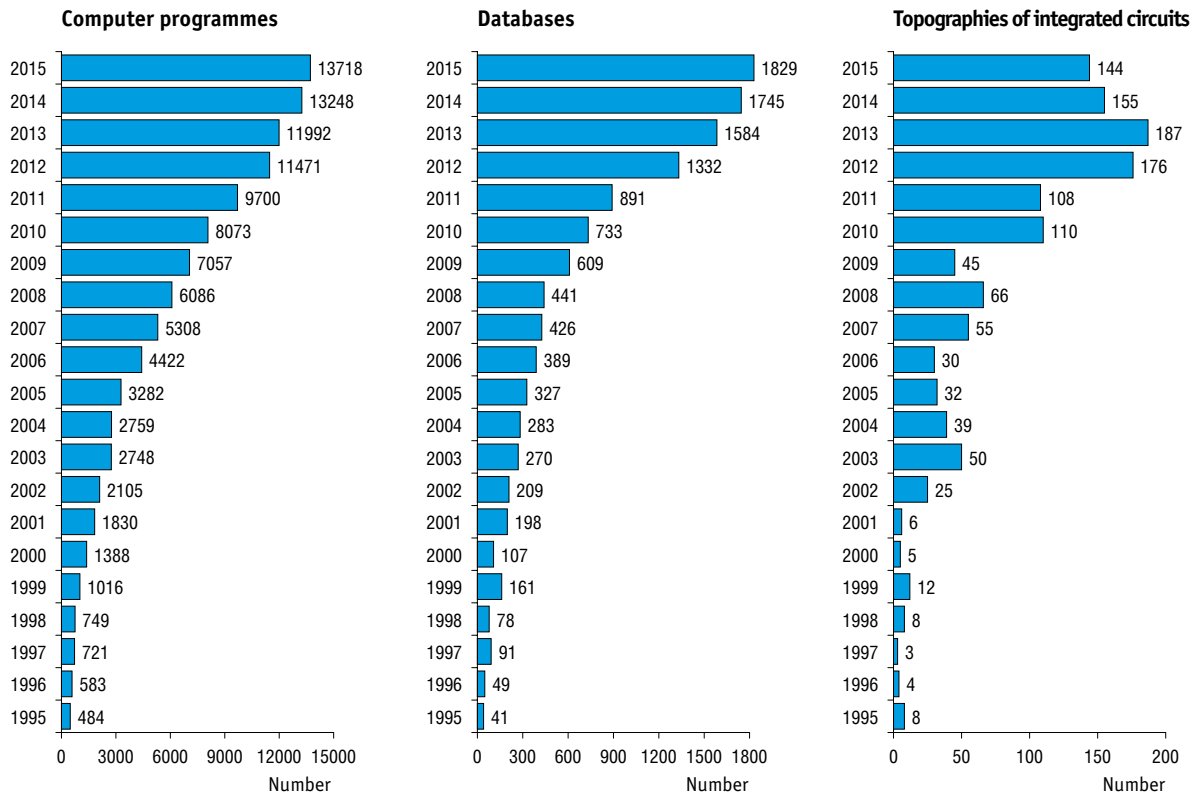
	1995	2000	2005	2010	2011	2012	2013	2014	2015
Patent applications filed in the Russian Federation	2039	4631	9473	12262	13241	14069	14358	13952	11906
by Russian residents	1997	4549	9082	11757	12584	13479	13589	13000	11403
by non-residents	42	82	391	505	657	590	769	952	503
Patents granted in the Russian Federation	1207	4098	7242	10581	11079	11671	12653	13080	9008
by Russian residents	1195	4041	6958	10187	10571	11152	12154	12267	8390
by non-residents	12	57	284	394	508	519	499	813	618
Valid Russian Federation patents	2971	15498	28364	54848	46876	50746	54420	58238	57448

6.16. UTILITY MODEL PATENTS GRANTED IN THE RUSSIAN FEDERATION BY SECTION OF THE INTERNATIONAL PATENT CLASSIFICATION*

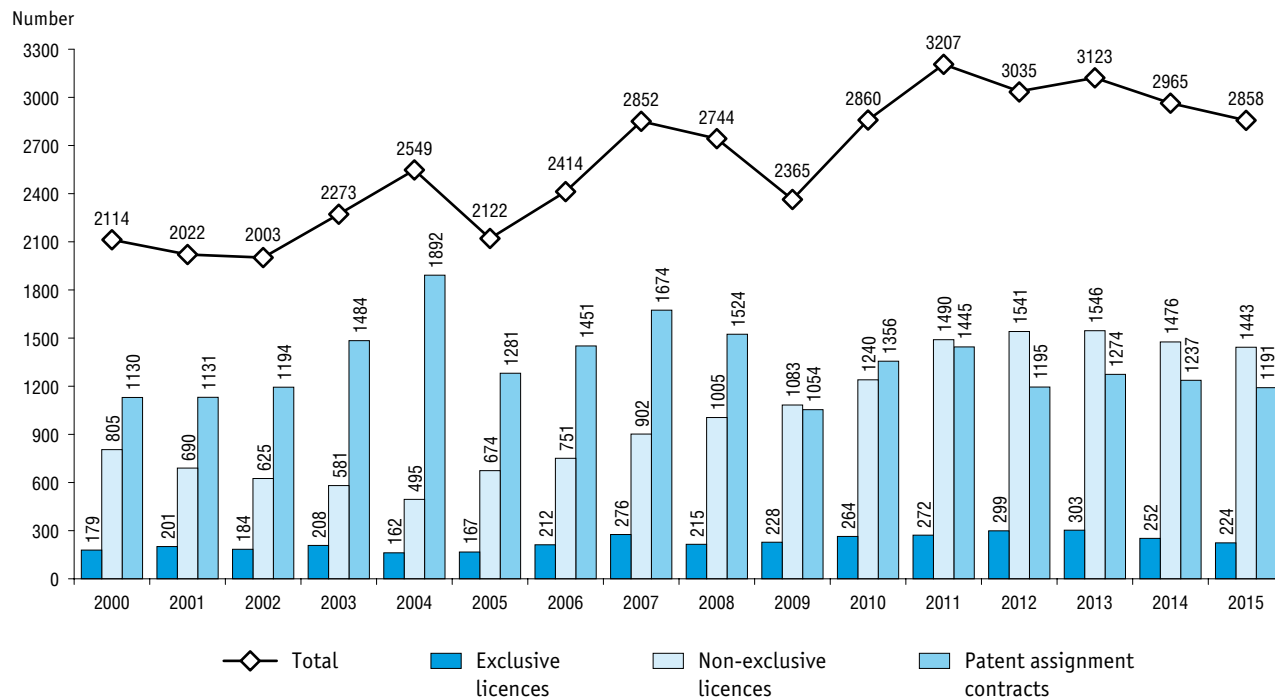
	1995	2000	2005	2010	2011	2012	2013	2014	2015
Total	1207	4098	7242	10581	11079	11671	12653	13080	9008
A. Human necessities	190	835	1344	1914	1833	1933	2091	2240	1579
B. Performing operations; transporting	311	1004	1741	2411	2518	2678	2917	2935	2021
C. Chemistry; metallurgy	30	145	289	398	340	370	398	383	269
D. Textiles; paper	37	73	73	57	68	55	52	45	42
E. Fixed constructions	115	465	1022	1503	1459	1466	1611	1684	1192
F. Mechanical engineering; lighting; heating; engines and pumps; weapons; blasting	235	679	1111	1701	1815	1957	2112	2459	1557
G. Physics	150	490	949	1580	1842	1912	2017	2011	1376
H. Electricity	139	407	713	1017	1204	1300	1455	1323	972

* Patents granted to Russian residents and to non-residents.

6.17. REGISTRATION OF INTELLECTUAL PROPERTY ITEMS IN THE FIELD OF INFORMATION TECHNOLOGY



6.18. REGISTRATION OF INTERNAL LICENCE TRADE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS*

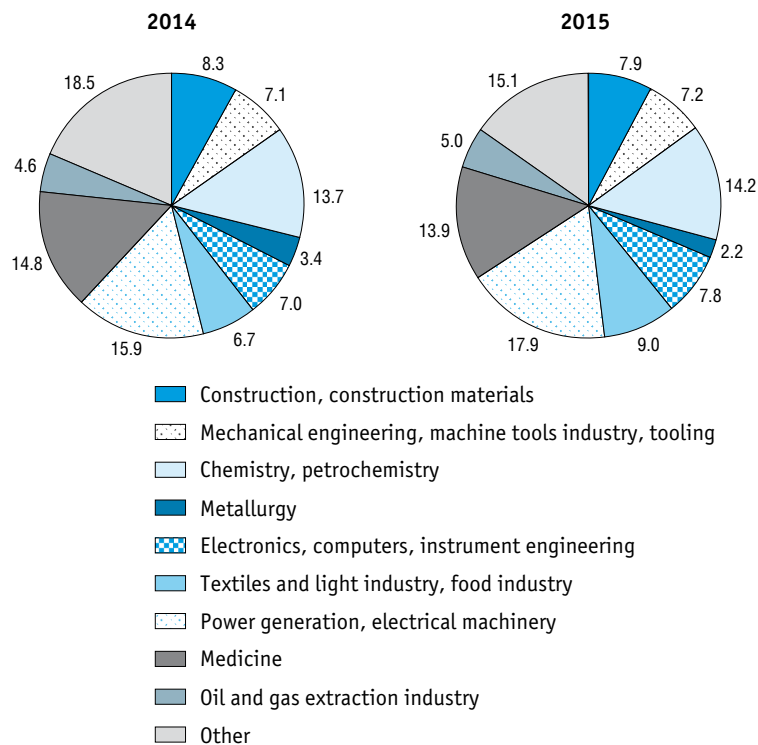


* Including patents for inventions, utility models, and industrial designs. Before 2008 – patent rights cession agreements.

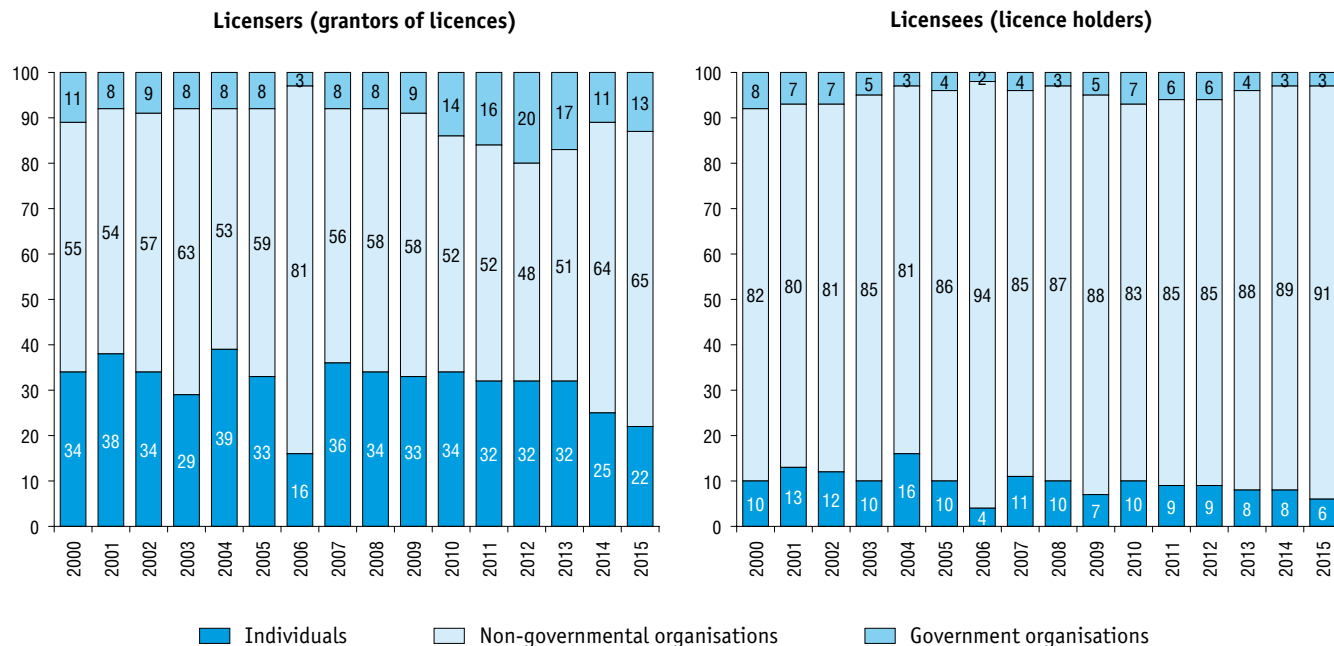
6.19. REGISTRATION OF INTERNAL LICENCE TRADE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY TECHNOLOGY FIELD

	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	2114	2122	2414	2852	2744	2365	2860	3207	3035	3123	2965	2858
I. Construction, construction materials	89	108	160	423	272	266	135	207	246	252	245	226
II. Mechanical engineering, machine tools industry, tooling	345	417	414	366	250	373	118	285	264	248	211	205
III. Chemistry, petrochemistry	203	268	500	120	94	94	286	454	438	382	407	406
IV. Metallurgy	85	69	181	245	133	186	86	113	103	108	100	62
V. Electronics, computers, instrument engineering	78	165	157	137	73	101	311	257	260	216	209	222
VI. Textiles and light industry, food industry	323	105	160	211	173	186	163	194	215	276	200	257
VII. Power generation, electrical machinery	150	223	220	390	247	364	421	567	499	490	470	511
VIII. Medicine	264	249	295	120	76	140	294	414	388	473	439	396
IX. Oil and gas extraction industry	224	136	100	434	338	449	162	158	152	168	135	142
X. Other	353	382	227	406	709	585	884	558	470	510	549	431

6.20. PERCENTAGE DISTRIBUTION OF INTERNAL LICENCE TRADE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY TECHNOLOGY FIELD



6.21. PERCENTAGE DISTRIBUTION OF INTERNAL LICENCE TRADE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY CATEGORY OF ECONOMIC ENTITY



6.22. TECHNOLOGY BALANCE OF PAYMENTS BY CATEGORY OF CONTRACTS

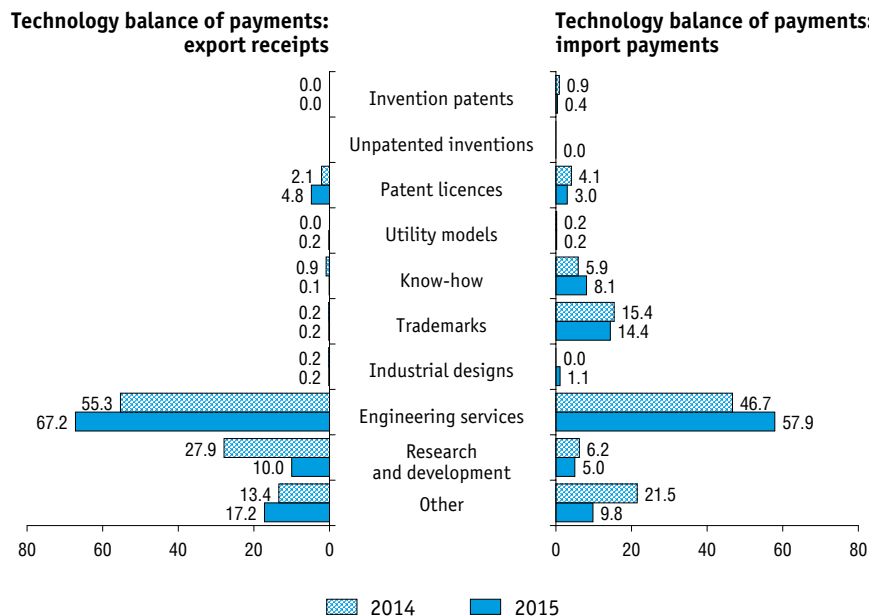
(thousand US dollars)

	Total	Invention patents	Unpatented inventions	Patent licences	Utility models	Know-how	Trademarks	Industrial designs	Engineering services	Research and development	Other
Technology balance of payments: export receipts											
2002	211478.4	214.5	–	210.0	...	1909.3	1446.9	84.9	143764.1	20812.0	43036.7
2003	237403.9	147.3	0.9	4000.6	...	1292.0	1185.5	2.0	166376.7	25974.2	38424.7
2004	383985.2	767.3	370.0	980.6	...	2933.9	1539.3	2.0	177335.0	63671.3	136385.8
2005	389396.4	926.3	467.0	1788.0	...	517.9	5583.5	1017.3	150858.8	83214.4	145023.2
2006	533385.9	100.8	4284.7	2576.1	...	398.0	6191.6	219.8	166911.1	89260.1	263443.7
2007	630391.6	347.2	–	5215.8	0.5	1985.1	7550.3	2457.0	267561.2	101170.3	244104.2
2008	833164.4	112.8	–	5183.8	3765.0	9709.5	17685.4	3752.3	491665.1	151463.4	149827.1
2009	618184.5	191.8	10.8	12825.7	936.2	10980.9	431.9	3554	410907.2	120877.9	57468.1
2010	627887.5	582.6	1987.0	11821.3	1718.9	13778.5	759.1	2531.0	368971.3	138356.8	87381.0
2011	584656.9	98.9	212.0	20334.7	688.0	4886.2	1251.7	2304.0	382161.5	111499.3	61220.6
2012	688469.9	21.0	–	21850.1	898.7	15653.4	999.4	2291.0	376428.2	170752.9	99575.2
2013	770584.8	81.0	110.0	25409.6	75.4	11798.9	388.2	2452.2	364000.7	235654.9	130613.9
2014	1279213.1	72.7	–	26610.9	35.9	11526.7	2765.3	2000.8	707674.2	356496.9	172029.7
2015	1654732.1	63.2	–	79062.3	4113.6	2474.5	3990.3	2492.1	1112557.2	164939.8	285039.1
Technology balance of payments: import payments											
2002	572488.8	403.2	–	3873.6	...	16042.0	83127.7	508.0	180620.6	182662.7	105251.0
2003	666114.1	675.9	1095.3	18375.9	...	20265.2	141515.7	533.5	413643.7	17953.6	52055.3
2004	823030.1	1164.3	531.6	19910.5	...	28024.4	215034.5	644.7	497121.0	9612.8	50986.3
2005	954199.2	8730.3	2983.5	19315.4	...	9489.7	191045.0	1519.5	582813.8	16512.8	121789.2
2006	1128425.8	3201.3	–	21402.1	101.2	49705.7	160720.2	217.9	658016.9	38631.3	196429.2
2007	1426387.6	14408.5	–	68538.3	959.1	70461.1	222142.6	559.3	754249.4	32476.3	262593.0

(continued)

	Total	Invention patents	Unpatented inventions	Patent licences	Utility models	Know-how	Trademarks	Industrial designs	Engineering services	Research and development	Other
2008	2087067.4	10716.8	16.5	63042.7	690.3	43270.8	408349.1	0.0	1156815.3	31030.0	373135.9
2009	1619031.6	1109.4	–	74956.9	253.3	61944.4	392697.1	1.0	879212.9	19857.7	188998.9
2010	1425983.3	4024.2	–	82853.9	3665.6	62117.0	419009.3	2.2	526913.5	49631.8	277765.8
2011	1862566.6	3531.0	–	71764.2	2264.3	92153.1	406684.6	26.2	692495.2	72676.4	520971.6
2012	2043187.9	6970.5	14.0	64208.4	5138.4	158428.1	465370.3	997.0	806467.1	66295.4	469298.7
2013	2463626.3	22600.3	–	85973.2	1998.2	133742.2	587894.4	704.3	959742.4	171256.5	499714.8
2014	2455830.7	20879.5	–	100797.0	4066.3	121719.8	381160.4	182.6	1147892.0	151488.5	527644.6
2015	2205429.3	9636.1	3.4	66104.7	3461.5	179228.9	318504.5	24447.9	1277698.4	110310.7	216033.2
Technology balance of payments											
2002	-361010.4	-188.7	–	-3663.6	...	-14132.7	-81680.8	-423.1	-36856.5	-161850.7	-62214.3
2003	-428710.2	-528.6	-1094.4	-14375.3	...	-18973.2	-140330.2	-531.5	-247267.0	8020.6	-13630.6
2004	-439044.9	-397.0	-161.6	-18929.9	...	-25090.5	-213495.2	-642.7	-319786.0	54058.5	85399.5
2005	-564802.8	-7804.0	-2516.5	-17527.4	...	-8971.8	-185461.5	-502.2	-431955.0	66701.6	23234.0
2006	-595039.9	-3100.5	4284.7	-18826.0	-101.2	-49307.7	-154528.6	1.9	-491105.8	50628.8	67014.5
2007	-795996.0	-14061.3	–	-63322.5	-958.6	-68476.0	-214592.3	1897.7	-486688.2	68694.0	-18488.8
2008	-1253903.0	-10604.0	-16.5	-57858.9	3074.7	-33561.3	-390663.7	3752.3	-665150.2	120433.4	-223308.8
2009	-1000847.1	-917.6	10.8	-62131.2	682.9	-50963.5	-392265.2	3553.0	-468305.7	101020.2	-131530.8
2010	-798095.8	-3441.6	1987.0	-71032.6	-1946.7	-48338.5	-418250.2	2528.8	-157942.2	88725.0	-190384.8
2011	-1277909.7	-3432.1	212.0	-51429.5	-1576.3	-87266.9	-405432.9	2277.8	-310333.7	38822.9	-459751.0
2012	-1354718.0	-6949.5	-14.0	-42358.3	-4239.7	-142774.7	-464370.9	1294.0	-430038.9	104457.5	-369723.5
2013	-1693041.5	-22519.3	110.0	-60563.6	-1922.8	-121943.3	-587506.2	1747.9	-595741.7	64398.4	-369100.9
2014	-1176617.6	-20806.8	–	-74186.1	-4030.4	-110193.1	-378395.1	1818.2	-440217.8	205008.4	-355614.9
2015	-550697.2	-9572.9	-3.4	12957.6	652.1	-176754.4	-314514.2	-21955.8	-165141.2	54629.1	69005.9

6.23. PERCENTAGE DISTRIBUTION OF TECHNOLOGY EXPORT AND IMPORT BY CATEGORY OF CONTRACTS



6.24. TECHNOLOGY BALANCE OF PAYMENTS BY COUNTRY

(thousand US dollars)

	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Total	770584.8	1279213.1	1654732.1	2463626.3	2455830.7	2205429.3	-1693041.5	-1176617.6	-550697.2
CIS countries	75303.4	198398.0	134126.3	88131.0	71229.1	36156.9	-12827.6	127168.9	97969.4
Azerbaijan	5599.7	5263.8	1116.3	836.5	12.0	103.2	4763.2	5251.8	1013.1
Armenia	18.0	151.5	164.8	296.0	17.8	77.0	-278.0	133.7	87.8
Belarus	27224.3	87698.8	79447.4	11221.3	15805.9	8330.2	16003.0	71892.9	71117.2
Kazakhstan	19849.1	57558.1	27409.6	6815.1	7235.2	10882.4	13034.0	50322.9	16527.2
Kyrgyzstan	1359.6	1752.8	4824.5	37.9	60.1	44.2	1321.7	1692.7	4780.3
Republic of Moldova	644.6	794.3	537.1	123.0	370.4	176.1	521.6	423.9	361.0
Tajikistan	5248.6	6746.8	7360.3	17.6	116.3	12.6	5231.0	6630.5	7347.7
Turkmenistan	113.5	3095.8	3043.9	—	13.6	60.0	113.5	3082.2	2983.9
Uzbekistan	1243.7	4885.6	2154.7	186.6	124.4	736.9	1057.1	4761.2	1417.8
Ukraine	14002.3	30450.5	8067.7	68597.0	47473.4	15734.3	-54594.7	-17022.9	-7666.6
OECD countries	409978.9	908085.0	620086.4	2275154.4	2298971.0	1862817.6	-1865175.5	-1390886.0	-1242731.2
Australia	116.6	168.6	64.2	568.7	661.8	3614.8	-452.1	-493.2	-3550.6
Austria	5113.6	3748.6	21974.7	35294.4	53621.8	84060.9	-40860.1	-49873.2	-62086.2
Belgium	4824.6	5012.3	8346.1	29924.5	38765.1	35310.6	-25099.9	-33752.8	-26964.5
Canada	3460.2	3222.4	3884.8	121197.8	10294.6	21350.3	-117737.6	-7072.2	-17465.5
Chile	—	—	31.7	—	—	—	—	—	31.7
Czech Republic	1551.6	2111.0	4702.3	31940.7	84109.6	16266.8	-30389.1	-81998.6	-11564.5
Denmark	6598.2	4823.4	6638.2	31823.8	87177.2	24054.3	-25225.6	-82353.8	-17416.1
Estonia	214.2	349.9	416.5	4598.6	601.4	1925.3	-4384.4	-251.5	-1508.8
Finland	19074.8	5895.6	4837.6	42057	62808.4	196087.1	-22982.2	-56912.8	-191249.5
France	31118.4	20381.3	20646.8	184481.0	181465.9	174907.1	-153362.8	-161084.6	-154260.3

(continued)

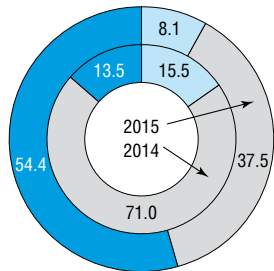
	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Germany	37631.0	42102.8	47236.1	223429.3	271533.0	392597.9	-185798.3	-229430.2	-345361.9
Greece	3.3	383.2	297.6	4058.4	3068.6	1406.6	-4055.1	-2685.4	-1109.0
Hungary	1469.3	1150.8	272.7	1791.0	4476.9	1518.6	321.7	-3326.1	-1245.9
Iceland	—	—	—	—	0.8	—	—	-0.8	—
Ireland	1637.5	1146.1	1916.4	5556.6	8362.4	5442.5	-3919.1	-7216.3	-3526.1
Israel	5351.9	1340.6	1574.8	542.1	1238.1	505.8	4809.8	102.5	1069.0
Italy	5833.1	108753.1	7204.6	166347.5	94195.6	53949.9	-160514.4	14557.5	-46745.3
Japan	6406.3	14815.4	6553.5	66490.6	59592.1	39138.3	-60084.3	-44776.7	-32584.8
Luxembourg	157.8	23500.4	2953.0	7293.4	36351.9	29899.2	-7135.6	-12851.5	-26946.2
Mexico	218.5	4286.6	21.6	4.4	2.6	53.6	214.1	4284.0	-32.0
Netherlands	44681.2	50449.0	32305.2	140125.3	104249.4	81365.1	-95444.1	-53800.4	-49059.9
New Zealand	5.0	44.6	—	215.7	603.0	—	-210.7	-558.4	—
Norway	14001.2	10649.6	4663.2	14690.3	2611.7	3089.3	-689.1	8037.9	-1573.9
Poland	353.5	964.6	392.9	28667.3	10675.6	7187.4	-28313.8	-9711.0	-6794.5
Portugal	286.1	592.6	1.9	72.8	253.5	414.3	213.3	339.1	-412.4
Republic of Korea	20555.9	9944.3	10024.7	57535.6	44174.4	44388.2	-36979.7	-34230.1	-34363.5
Slovakia	421.4	50.4	414.3	886.4	1177.8	479.0	-465.0	-1127.4	-64.7
Slovenia	915.0	932.2	384.4	1592.3	336.3	1075.9	-677.3	595.9	-691.5
Spain	6702.0	7984.6	1808.1	121445.8	36527.1	28977.5	-114743.8	-28542.5	-27169.4
Sweden	7912.1	9898.2	4996.2	36267.2	39116.4	42724.1	-28355.1	-29218.2	-37727.9
Switzerland	18658.2	15857.8	16940.2	169351.5	124912.1	166535.0	-150693.3	-109054.3	-149594.8
Turkey	798.2	363367.3	70293.4	24584.6	163367.3	11871.4	-23786.4	200000.0	58422.0
United Kingdom	29474.7	31858.5	19546.9	200226.5	155378.6	138564.1	-170751.8	-123520.1	-119017.2
USA	134433.2	162299.2	319102.5	522093.1	617260.4	254056.7	-387659.9	-454961.2	65045.8

(continued)

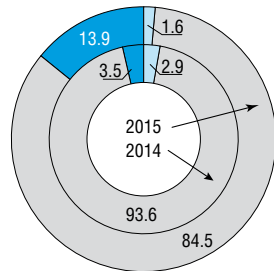
	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Other countries	285302.5	172730.1	900519.4	100340.9	85630.6	306454.8	184961.6	87099.5	594064.6
Brazil	1299.7	428.4	926.5	—	397.6	111.8	1299.7	30.8	814.7
Bulgaria	20097.4	19605.9	14242.1	1087.8	274.1	418.9	19009.6	19331.8	13823.2
China	75034.8	60362.2	460338.5	7265.1	15644.3	5899.7	67769.7	44717.9	454438.8
Cyprus	7826.2	11649.3	9084.1	36803.2	41810.6	28103.0	-28977.0	-30161.3	-19018.9
Georgia	421.8	201.7	210.3	—	—	18.9	421.8	201.7	191.4
Hong Kong	5899.4	4902.4	7035.6	2186.3	394.2	1948.8	3713.1	4508.2	5086.8
India	49675.2	26872.8	85910.6	3329.6	1058.6	1735.9	46345.6	25814.2	84174.7
Iran	54242.7	8762.1	17011.2	313.0	—	—	53929.7	8762.1	17011.2
Republic of South Africa	3607.9	823.7	991.7	1061.8	51.5	63.2	2546.1	772.2	928.5
Romania	211.4	286.7	4480.9	908.6	468.7	427.6	-697.2	-182.0	4053.3
Singapore	5430.8	585.4	1118.0	6289.0	14587.4	4525.2	-858.2	-14002.0	-3407.2
Taiwan	34.2	1150.9	838.9	116.5	10.8	677.3	-82.3	1140.1	161.6
Other	61431.0	37098.6	298331.0	40980.0	10932.8	262524.5	20451.0	26165.8	35806.5

6.25. PERCENTAGE DISTRIBUTION OF TECHNOLOGY EXPORT AND IMPORT BY COUNTRY GROUP

Technology balance of payments:
export receipts



Technology balance of payments:
import payments



■ CIS countries ■ OECD countries ■ Other countries

6.26. TECHNOLOGY BALANCE OF PAYMENTS BY SECTOR OF PERFORMANCE

(thousand US dollars)

	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Total	770584.8	1279213.1	1654732.1	2463626.3	2455830.7	2205429.3	-1693041.5	-1176617.6	-550697.2
Sectors of performance:									
government	144036.8	96353.5	56382.3	53088.6	92443.1	72446.0	90948.2	3910.4	-16063.7
business enterprise	622104.9	1176888.9	1591990.1	2410406.5	2362556.1	2132098.0	-1788301.6	-1185667.2	-540107.9
higher education	4443.1	5970.7	6359.7	130.0	830.3	884.1	4313.1	5140.4	5475.6
private non-profit	–	–	–	1.2	1.2	1.2	-1.2	-1.2	-1.2

6.27. TECHNOLOGY BALANCE OF PAYMENTS BY TYPE OF ECONOMIC ACTIVITY

(thousand US dollars)

	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Total	770584.8	1279213.1	1654732.1	2463626.3	2455830.7	2205429.3	-1693041.5	-1176617.6	-550697.2
Agriculture, hunting and forestry	–	1478.0	2932.0	180.4	1956.4	3683.7	-180.4	-478.4	-751.7
Fishing, aquaculture and related services	75.4	–	–	29.5	–	–	45.9	–	–
Mining and quarrying	1407.2	2057.1	11210.7	134826.8	208401.9	264897.9	-133419.6	-206344.8	-253687.2
Manufacturing	57440.7	143521.3	152094.1	1967032.1	1506157.5	1435667.2	-1909591.4	-1362636.2	-1283573.1
Electricity, gas and water supply	2070.0	5519.7	1983.3	1769.8	1643.2	9842.2	300.2	3876.5	-7858.9
Construction	563.6	24.0	25.1	9733.6	2221.5	953.2	-9170.0	-2197.5	-928.1
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	127933.6	388882.5	857611.8	35216.7	71575.8	222180.1	92716.9	317306.7	635431.7
Hotels and restaurants	–	–	–	100129.2	17047.0	16583.9	-100129.2	-17047.0	-16583.9
Transport and communications	38513.8	43002.3	27777.0	114174.2	196969.4	89845.7	-75660.4	-153967.1	-62068.7
Real estate, renting and business activities	538917.6	691226.2	598591.9	95201.7	441677.9	159022.4	443715.9	249548.3	439569.5
Of which:									
computer and related activities	145268.3	191511.8	184732.6	9110.5	7705.1	8451.2	136157.8	183806.7	176281.4
of which software development and related consultancy	112810.8	154491.2	155364.8	8162.8	6565.1	7585.5	104648.0	147926.1	147779.3
research and development	197102.9	315586.9	157917.7	35354.5	301861.6	108754.4	161748.4	13725.3	49163.3

(continued)

	Technology balance of payments: export receipts			Technology balance of payments: import payments			Technology balance of payments		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
Public administration and defence; compulsory social security	4.4	441.5	–	–	157.5	–	4.4	284.0	–
Education	3577.7	3060.5	2351.4	376.1	1362.5	624.1	3201.6	1698.0	1727.3
Health and social services	80.8	–	154.8	198.0	168.0	259.5	-117.2	-168.0	-104.7
Community, social and personal services	–	–	–	4758.2	6492.1	1869.4	-4758.2	-6492.1	-1869.4
Of which recreational, cultural and sporting activities	–	–	–	4758.2	6492.1	1869.4	-4758.2	-6492.1	-1869.4

6.28. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE

	1997	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Advanced manufacturing technology	996	688	637	735	780	854	897	864	1138	1323	1429	1409	1398
Design and engineering	223	165	138	148	177	173	196	216	316	305	426	445	359
Manufacturing, processing and assembling	390	281	291	362	365	369	328	383	405	548	517	506	548
Automatic handling, materials and parts transportation	20	20	9	13	8	14	21	18	24	23	22	22	12
Automatic inspecting or testing equipment	141	76	91	97	110	99	102	116	128	121	137	110	117
Communication and management	131	90	57	56	67	68	67	70	154	204	206	202	232
Manufacturing information systems	39	18	21	24	14	23	26	20	51	60	68	65	84
Integrated management and control	52	38	30	35	39	41	49	41	60	62	53	59	46

6.29. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGY BY DEGREE OF NOVELTY AND TYPE

	1997	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Technology new to the country	830	569	538	642	653	738	757	762	1028	1188	1276	1245	1223
Design and engineering	195	136	125	138	140	150	169	191	272	269	367	390	323
Manufacturing, processing and assembling	315	231	239	308	314	316	283	336	371	491	469	450	471
Automatic handling, materials and parts transportation	17	19	8	11	8	12	17	16	23	21	21	20	10
Automatic inspecting or testing equipment	101	66	72	79	91	87	92	98	117	101	108	84	82
Communications and management	118	74	52	52	52	65	61	67	147	194	195	187	218
Manufacturing information systems	38	14	20	24	13	20	22	17	41	55	66	59	78
Integrated management and control	46	29	22	30	35	37	40	37	57	57	50	55	41
Radically new technology	90	72	60	52	75	54	140	102	110	135	153	164	175
Design and engineering	18	12	12	7	17	7	27	25	44	36	59	55	36
Manufacturing, processing and assembling	41	32	30	25	30	24	45	47	34	57	48	56	77
Automatic handling, materials and parts transportation	–	1	–	1	–	1	4	2	1	2	1	2	2
Automatic inspecting or testing equipment	20	6	12	14	14	8	10	18	11	20	29	26	35
Communications and management	7	9	4	3	12	1	6	3	7	10	11	15	14
Manufacturing information systems	–	4	1	–	1	1	4	3	10	5	2	6	6
Integrated management and control	4	8	1	2	1	3	9	4	3	5	3	4	5

6.30. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGY BY DEGREE OF NOVELTY AND TYPE OF ECONOMIC ACTIVITY

	Total		Of which technology			
	2014	2015	new to the country		radically new	
			2014	2015	2014	2015
Advanced manufacturing technology	1409	1398	1245	1223	164	175
Mining and quarrying	25	18	23	17	2	1
Manufacturing	414	442	382	416	32	26
Electricity, gas and water supply	33	28	32	28	1	–
Transport and communications	39	54	5	50	5	4
Real estate, renting and business activities	586	560	498	458	88	102
Of which:						
research and development	546	529	461	429	85	100
other services	40	31	37	29	3	2
Education	312	296	276	254	36	42
Of which higher education	312	296	276	254	36	42

6.31. USE OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE

	1997	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Advanced manufacturing technology	55452	70069	140983	168311	180324	184568	201850	203330	191650	191372	193830	204546	218018
Design and engineering	7109	14385	43273	50653	54044	47116	54539	56130	41422	39664	38735	38598	39831
Manufacturing, processing and assembling	36538	35408	42976	50290	48956	47235	52460	55438	53563	55579	55424	58111	63379
Automatic handling, materials and parts transportation	707	685	970	1270	1420	1469	1668	1853	1649	1570	1823	1983	2129
Automatic inspecting or testing equipment	2644	2409	4525	5941	6758	7531	8075	9106	9395	9519	11314	12263	12876
Communication and management	6650	13713	44135	53971	62102	74468	77457	72798	77662	76479	78028	84730	89967
Manufacturing information systems	790	1823	3177	4092	4602	4175	4510	4848	4853	5171	5293	5555	6300
Integrated management and control	1014	1646	1927	2094	2442	2380	2877	3157	3106	3390	3213	3306	3536

6.32. USE OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE AND DURATION

	Total		Of which technology used during the period of					
			less than 1 year		1 to 5 years		6 and more years	
	2014	2015	2014	2015	2014	2015	2014	2015
Advanced manufacturing technology	204546	218018	16179	16844	84182	87543	104185	113631
Design and engineering	38598	39831	3712	3498	16461	17869	18425	18464
Manufacturing, processing and assembling	58111	63379	4893	5323	20635	21624	32583	36432
Automatic handling, materials and parts transportation	1983	2129	192	157	757	882	1034	1090
Automatic inspecting or testing equipment	12263	12876	1234	1109	6294	6368	4735	5399
Communication and management	84730	89967	5539	6067	36411	37103	42780	46797
Manufacturing information systems	5555	6300	379	460	2425	2500	2751	3340
Integrated management and control	3306	3536	230	230	1199	1197	1877	2109

6.33. USE OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE OF ECONOMIC ACTIVITY AND DURATION

	Total		Of which technology used during the period of					
			less than 1 year		1 to 5 years		6 and more years	
	2014	2015	2014	2015	2014	2015	2014	2015
Advanced manufacturing technology	204546	218018	16179	16844	84182	87543	104185	113631
Mining and quarrying	8892	9222	715	382	4760	5126	3417	3714
Manufacturing	127492	146700	9518	10815	47746	54736	70228	81149
Electricity, gas and water supply	16971	18443	1677	1762	7651	8359	7643	8322
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	353	357	21	7	158	168	174	182
Transport and communications	7625	8766	591	608	3530	4091	3504	4067
Real estate, renting and business activities	37416	29038	3085	2757	17844	12871	16487	13410
Of which research and development	29969	22195	2579	2331	13892	9424	13498	10440
Education	5681	5492	562	513	2449	2192	2670	2787
Of which higher education	5681	5492	562	513	2449	2192	2670	2787
Community, social and personal services	116	–	10	–	44	–	62	–

6.34. USE OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE AND SOURCE OF ACQUISITION: 2015

	Total	Of which technology		
		developed in the reporting entity	acquired	
			in Russia	abroad
Advanced manufacturing technology	218018	32182	122583	63253
Design and engineering	39831	9166	24293	6372
Manufacturing, processing and assembling	63379	13335	25545	24499
Automatic handling, materials and parts transportation	2129	253	917	959
Automatic inspecting or testing equipment	12876	1478	7390	4008
Communication and management	89967	6023	58609	25335
Manufacturing information systems	6300	1457	3660	1183
Integrated management and control	3536	470	2169	897

6.35. USE OF ADVANCED MANUFACTURING TECHNOLOGY BY TYPE OF ECONOMIC ACTIVITY AND SOURCE OF ACQUISITION: 2015

	Total	Of which technology		
		developed in the reporting entity	acquired	
			in Russia	abroad
Advanced manufacturing technology	218018	32182	122583	63253
Mining and quarrying	9222	361	6336	2525
Manufacturing	146700	21458	76499	48743
Electricity, gas and water supply	18443	1145	14482	2816
Wholesale and retail trade; repair of motor vehicles, motorcycles and of personal and household goods	357	13	307	37
Transport and communications	8766	603	5923	2240
Real estate, renting and business activities	29038	7150	15890	5998
Of which research and development	22195	6819	10235	5141
Education	5492	1452	3146	894
Of which higher education	5492	1452	3146	894

6.36. USE OF ADVANCED MANUFACTURING TECHNOLOGY DEVELOPED ON THE BASIS OF INVENTION PATENTS BY TYPE*

	1997	2000	2005	2006	2007	2008	2009	2010	2011*	2012	2013	2014	2015
Advanced manufacturing technology	3247	2804	3072	2168	1373	2463	1344	1012	6566	6032	9099	9519	9249
Design and engineering	829	1115	1055	814	499	223	244	274	1574	1582	2193	2129	1819
Manufacturing, processing and assembling	1756	1231	1411	914	442	506	415	337	2523	2236	2670	3203	3274
Automatic handling, materials and parts transportation	26	45	16	5	4	13	24	18	76	69	218	131	121
Automatic inspecting or testing equipment	328	171	262	142	115	725	114	116	661	739	726	715	704
Communication and management	197	182	258	213	238	885	426	209	1418	1138	2844	2870	2775
Manufacturing information systems	29	9	44	53	51	52	47	31	193	172	321	316	395
Integrated management and control	82	51	26	27	24	25	42	27	121	96	127	155	161

* Due to the change in methodology since 2011 the data are not comparable with the data of 2001–2010.

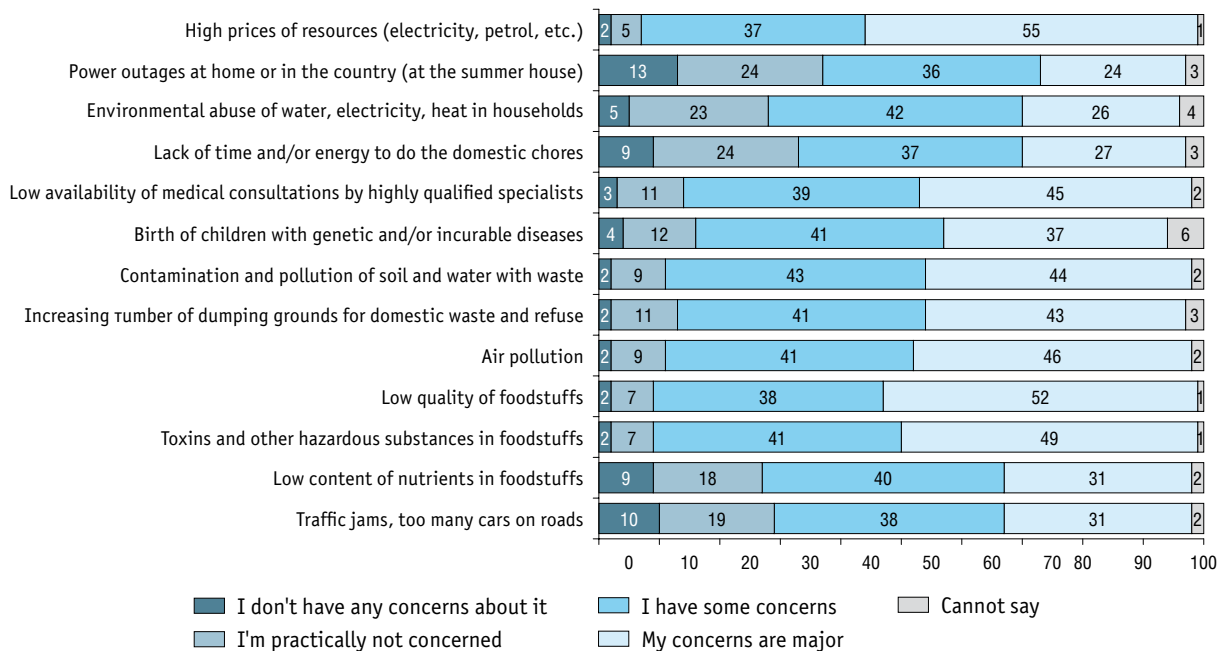


7. Attitudes and Public Opinion Regarding Science and Technology

7.1. RUSSIAN POPULATION'S CONCERNS ABOUT DIFFERENT SOCIAL ISSUES: 2015*

(as a percentage of those surveyed)

How strong are your concerns about the following issues?

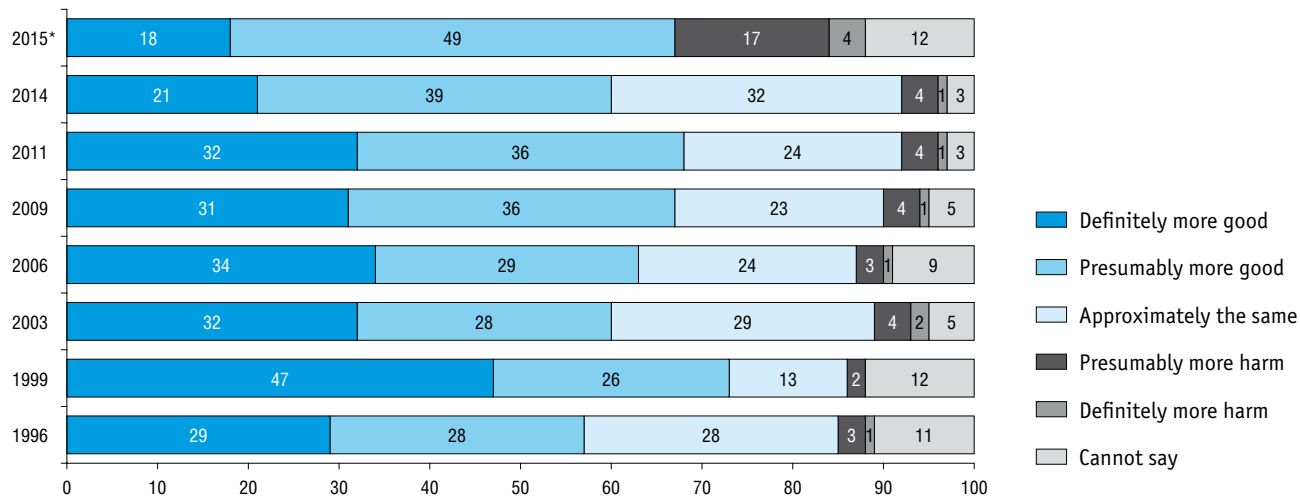


* Hereinafter in this section the data concerning Russia are based on the representative survey of population aged 16 and over (2009 – aged 18 and over), conducted by the HSE Institute for Statistical Studies and Economics of Knowledge (ISSEK) within the framework of the Basic Research Programme of the National Research University Higher School of Economics.

7.2. RUSSIAN PUBLIC OPINION REGARDING THE ROLE OF SCIENCE AND TECHNOLOGY IN SOCIETY

(as a percentage of those surveyed)

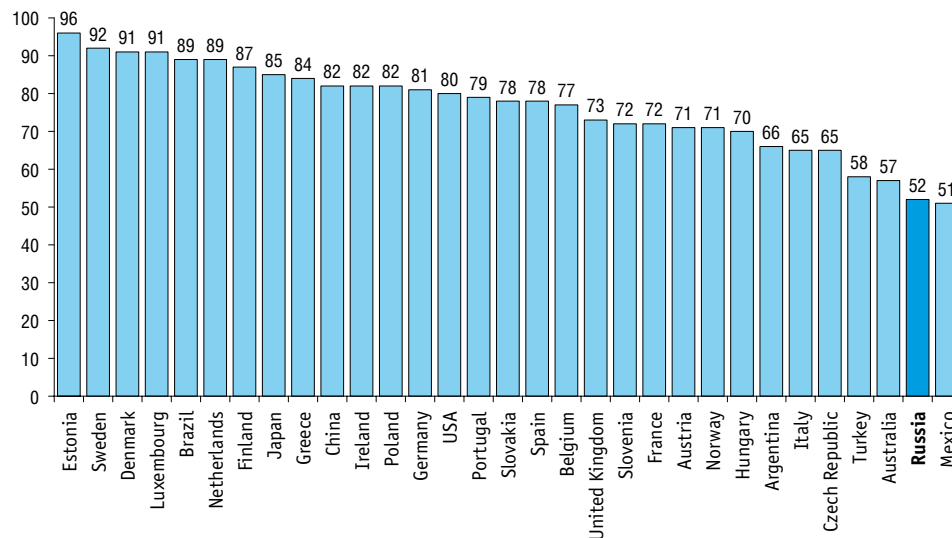
Russia: On the whole, do science and technology in your opinion, do more good or harm?



*In 2015 the variant 'Approximately the same' was excluded from the list of possible answers.

(continued)

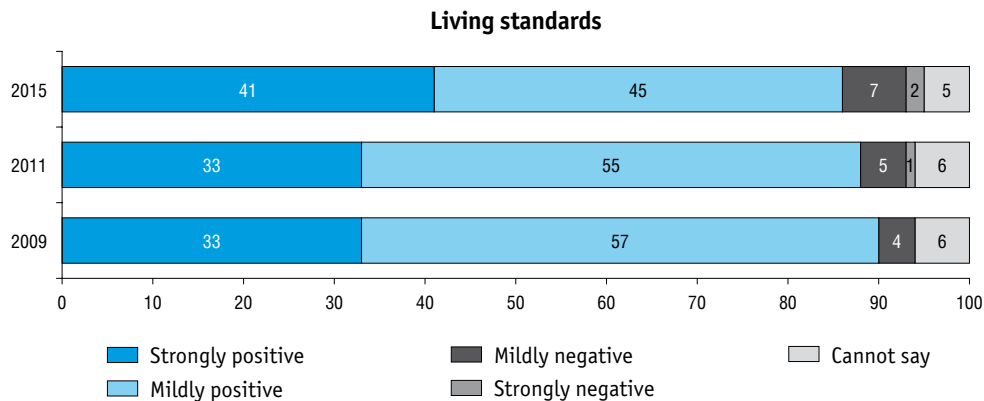
On the whole, do science and technology in your opinion, do more good or harm? **



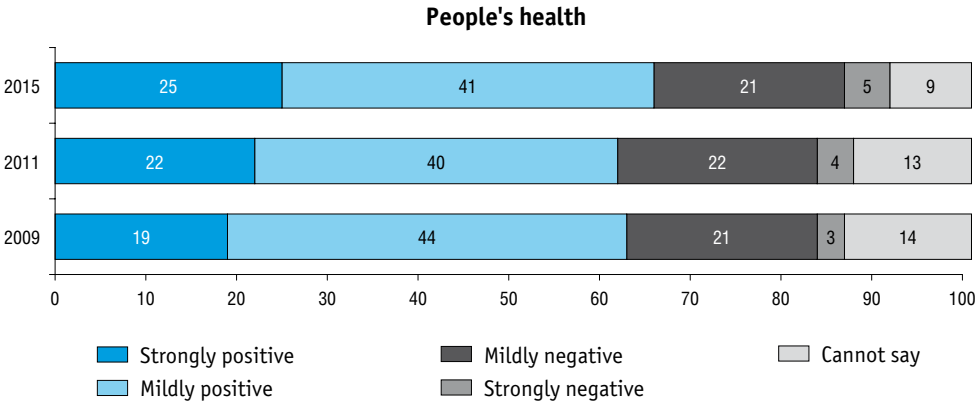
**The ratio (as a percentage) between the difference of positive and negative answers to the total number of those surveyed is taken into account (with the exception of those respondents who chose the answers 'Approximately the same' and 'Cannot say'). The data for Russia are given for 2015, for other countries – for the previous or following years for which the data are available (Source: OECD Science, Technology and Industry Scoreboard, 2015).

7.3. RUSSIAN PUBLIC OPINION CONCERNING THE IMPACT OF SCIENTIFIC AND TECHNOLOGICAL ADVANCEMENTS ON THE LIVING STANDARDS AND THE HEALTH OF PEOPLE AND ON THE ENVIRONMENTAL CONDITIONS

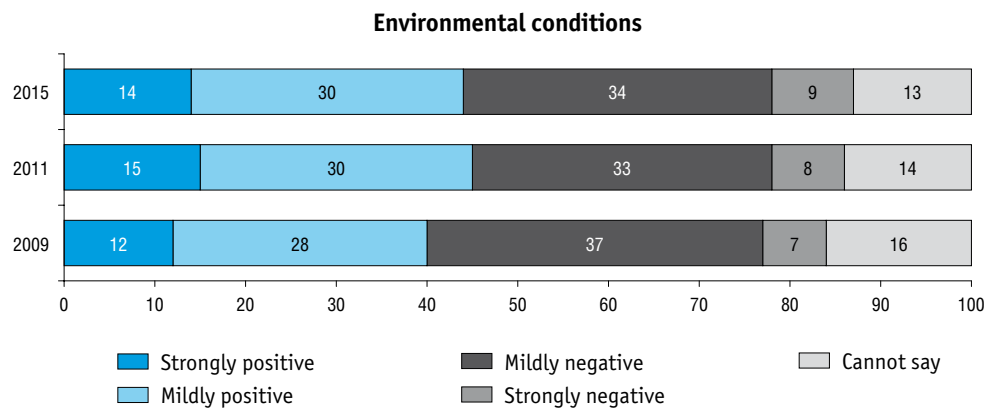
(as a percentage of those surveyed)



(continued)



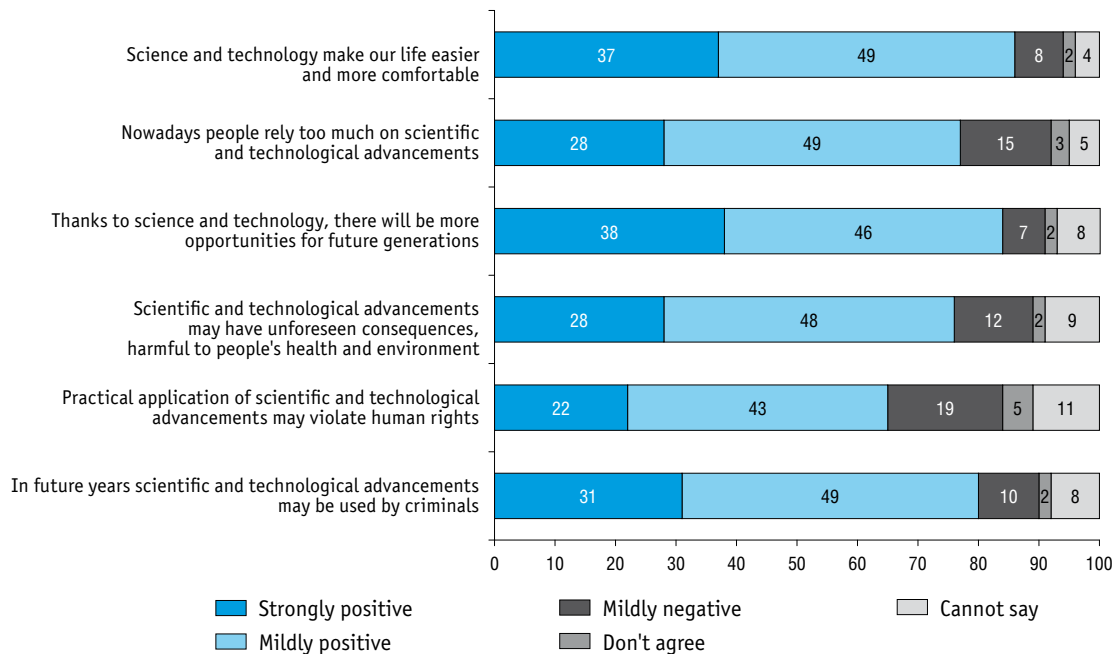
(continued)



7.4. RUSSIAN PUBLIC OPINION REGARDING THE IMPACT OF SCIENTIFIC AND TECHNOLOGICAL ADVANCEMENTS ON DIFFERENT SPHERES OF LIFE: 2015*

(as a percentage of those surveyed)

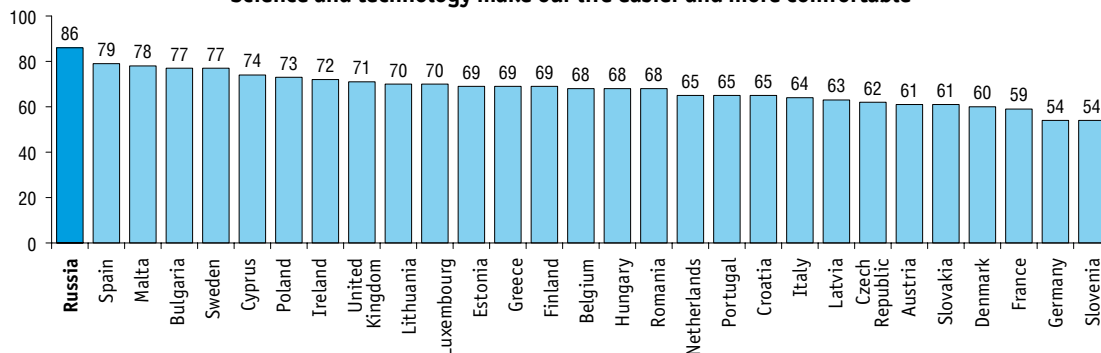
Russia: Do you agree with the following statements?



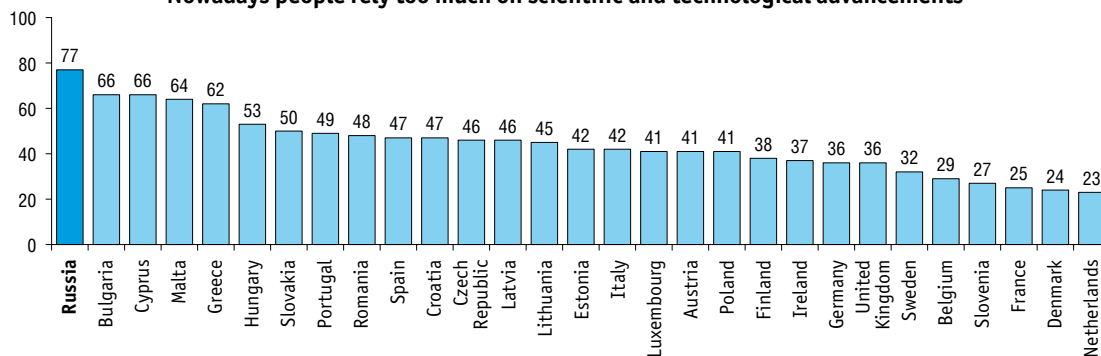
* Hereinafter in the section the data concerning European countries are for 2013 (Source: Special Eurobarometer 401: Responsible Research and Innovation (RRI), Science and Technology. European Commission, 2013).

(continued)

Science and technology make our life easier and more comfortable

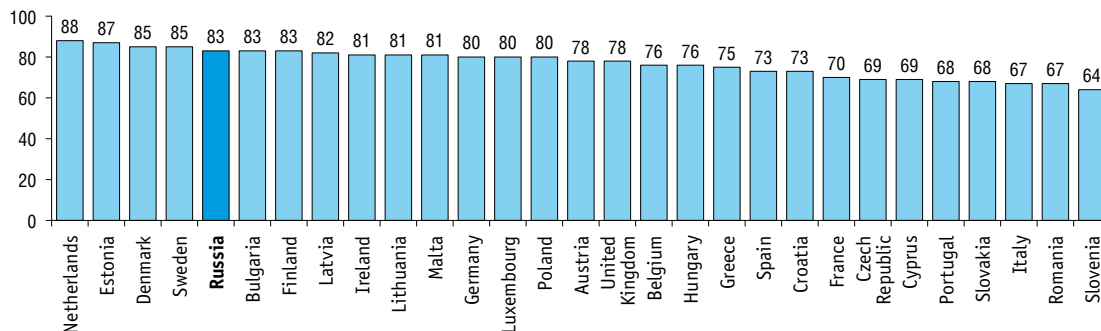


Nowadays people rely too much on scientific and technological advancements

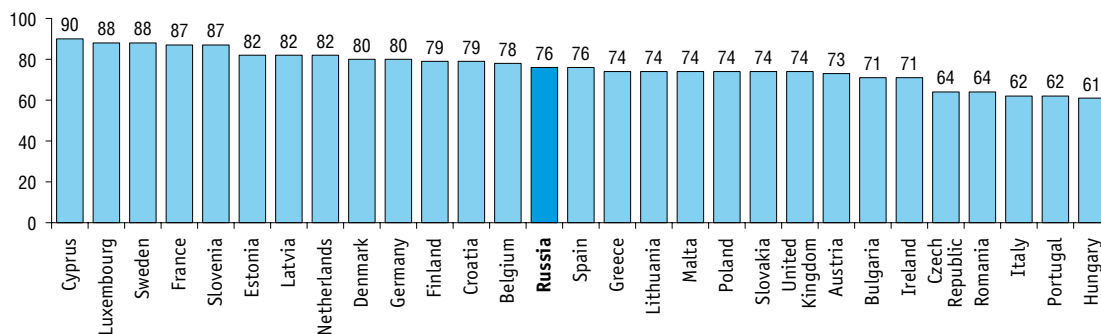


(continued)

Thanks to science and technology, there will be more opportunities for future generations

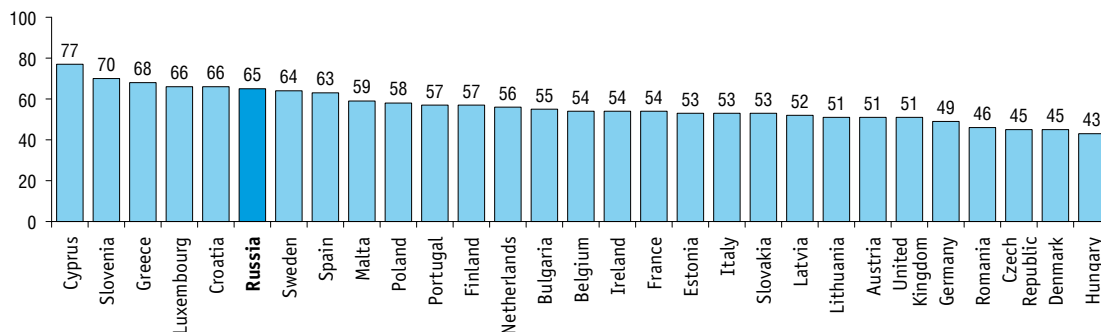


Scientific and technological advancements may have unforeseen consequences, harmful to people's health and environment

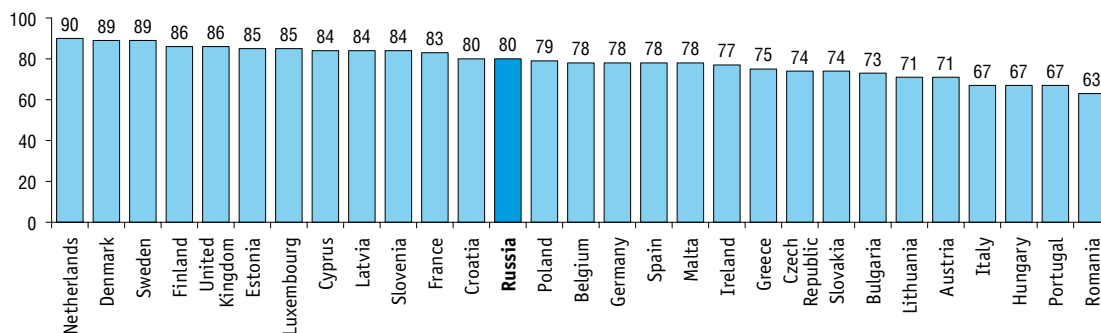


(continued)

Practical application of scientific and technological advancements may violate human rights

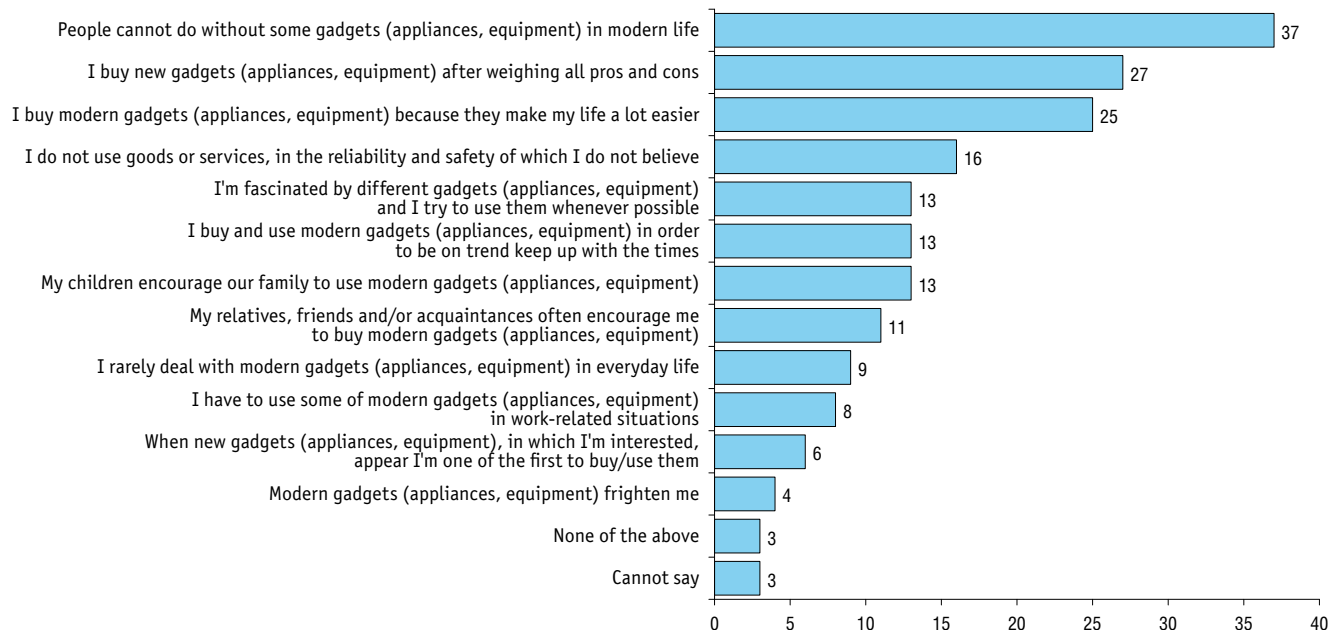


In future years scientific and technological advancements may be used by criminals



7.5. RUSSIAN PUBLIC OPINION ABOUT PURCHASING AND USE OF MODERN GADGETS (APPLIANCES, EQUIPMENT) IN EVERYDAY LIFE: 2015*
(as a percentage of those surveyed)

Which of the following answers most closely correspond to your attitude to modern gadgets (appliances, equipment)?



* The sum exceeds 100% because the respondents could choose more than one answer.



8. International Comparisons

8.1. GROSS DOMESTIC EXPENDITURE ON R&D

(million current PPP USD)

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Russia	8122.3	10726.9	18115.0	26543.7	30060.9	34628.2	33062.4	35183.1	38795.4	40683.5	39864.9	40525.9
CIS countries												
Armenia	...	13.1	36.6	40.9	47.4	53.1	45.6	54.5	52.6	51.3	58.4	...
Azerbaijan	...	95.6	132.3	182.1	200.2	333.0	309.1	304.7	326.6	341.3	350.7	...
Belarus	...	418	633.5	1135.4	983.3	860.5	1012.6	1101.9	1086.5	1125.4	...	...
Kazakhstan	...	207.3	597.4	561.2	612.9	661.6	480.9	540.7	620.8	691.4	...	...
Kyrgyzstan	...	12.6	21.6	30.2	27.1	23.6	23.2	25.2	27.2	27.5	24.5	...
Republic of Moldova	...	...	42.3	66.2	71.3	66.4	60.3	60.3	62.8	59.1	65.8	...
Tajikistan	...	...	10.0	8.6	9.8	12.5	14.1	21.0	21.6	24.3	...	...
Ukraine	...	1803.7	3561.8	3184.8	3295.7	2862.6	2929.5	2792.8	2902.2	2984.9	2440.8	...
Uzbekistan	...	...	...	...	...	...	...	...	...	...	339.0	...
OECD countries												
Australia	...	7964.1	...	...	19133.0	...	20572.2	20955.6	...	23084	...	...
Austria	2889.3	4476.1	6802.5	7916.7	8854.1	8857.6	9592.5	9906.5	11324.6	11918.5	12498.0	12865.4
Belgium	3798.7	5572.7	6171.1	7167.8	7799.3	8065.9	8772.0	9729.1	11023.9	11705.0	12023.3	...
Canada	11367.7	16746.6	23090.0	24742.0	24911.9	25046.8	25048.2	25674.6	26279	26303.8	25813.6	...
Chile	...	...	...	860.9	1026.1	963.7	1027.8	1232.1	1355.5	1471.9	1486.9	...
Czech Republic	1261.7	1864.1	2664.5	3586.1	3496.9	3659.2	3799.0	4683.8	5406.1	6031.9	6556.1	...
Denmark	2186.3	...	4418.9	5311.2	6235.8	6715.0	6816.5	7157.1	7424.3	7841.6	7920.9	...
Estonia	...	81.4	207.2	312.9	379.1	376.3	444.6	733.4	724.9	614.0	531.3	...
Finland	2171.2	4446.3	5601.2	6636.5	7487.9	7512.4	7658.3	7892.0	7486.2	7321.7	7050.8	...

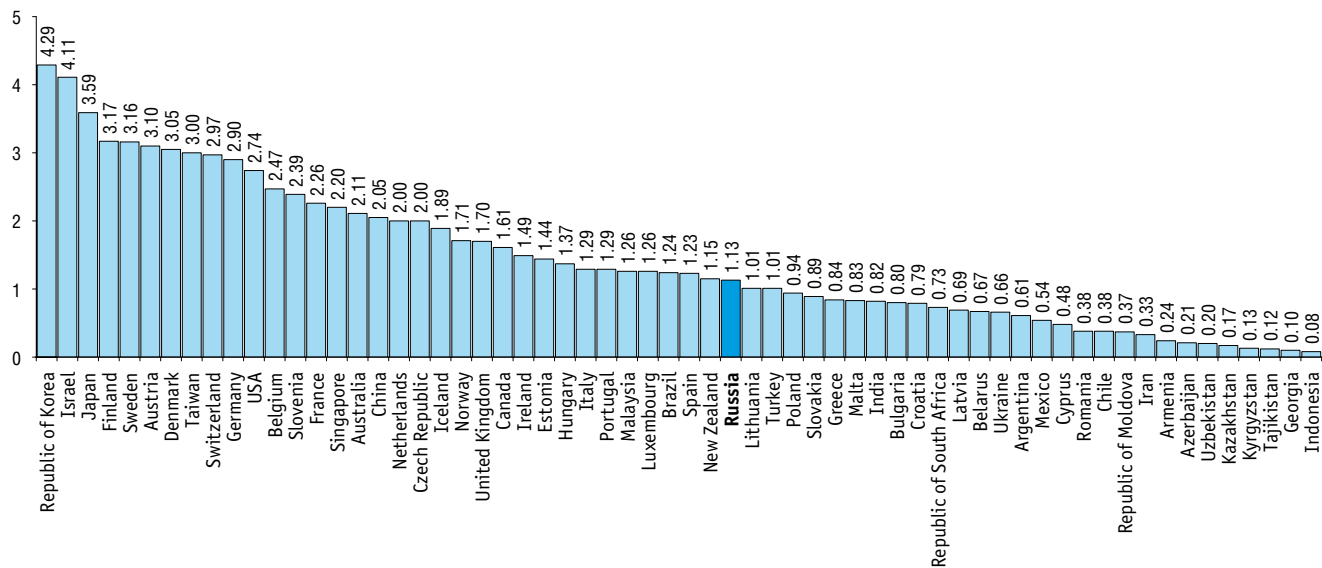
(continued)

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	27451.9	32969.4	39235.7	44011.4	46547.8	49741.1	50765.0	53428.4	54829.9	57986.8	58750.3	...
Germany	40190.9	52361.4	64298.8	74015.7	81970.7	82873.8	87966.1	96369.6	100697.1	102573.0	108827.2	...
Greece	677.1	...	1615.5	1866.8	2284.7	2129.8	1928.6	1986.9	2007.4	2383.5	2447.1	...
Hungary	667.6	977.1	1615.7	1870.7	2058.2	2382.0	2474.3	2696.2	2861.0	3322.8	3389.2	...
Iceland	95.1	216.5	287.1	310.6	333.6	337.8	...	314.8	...	259.0	272.3	...
Ireland	814.5	1222.8	2009.4	2537.3	2738.3	3065.7	3168.6	3203.8	3303.7	3361.9	3402.4	...
Israel	2663.6	6162.8	6966.3	8728.4	8706.4	8501.2	8658.7	9523.4	10448.8	10998.9	11376.5	...
Italy	11683.5	15252.3	17999.0	22315.0	24076.1	24640.9	25168.9	25769.3	27164.4	28128.1	27744.4	...
Japan	76617.3	98758.0	128694.6	147602.2	148719.2	136954.0	140607.4	148389.2	152325.6	162347.2	166861.3	...
Luxembourg	...	387.3	495.3	639.9	682.8	683.7	655.0	705.9	621.0	678.4	688.0	...
Mexico	1941.5	3362.8	5346.2	5717.1	6626.6	7009.8	7865.7	8058.5	8574.0	10053.4	11682.7	...
Netherlands	6554.1	9065.7	10904.4	12060.9	12467.8	12366.2	12831.0	14736.6	15093.7	15781.3	16291.1	...
New Zealand	607.3	...	1189.3	1435.1	...	1655.2	...	1766.6	...	1902.8	...	...
Norway	1733.4	...	3315.9	4189.7	4630.5	4675.4	4747.1	5057.4	5317.9	5608.4	5764.4	...
Poland	1810.8	2605.6	2982.4	3620.4	4150.9	4863.1	5726.5	6394.7	7914.3	8113.9	9031.1	...
Portugal	708.2	1324.6	1755.2	2989.5	3981.9	4375.5	4365.9	4142.4	3929.6	3874.1	3849.9	...
Republic of Korea	13195.6	18533.1	30618.3	40640.3	43906.4	45987.3	52172.8	58379.7	64862.5	68051.5	72266.8	...
Slovakia	411.5	384.4	440.1	517.9	594.1	592.6	816.7	903.5	1140.2	1227.8	1360.3	...
Slovenia	393.0	482.3	674.9	795.3	972.6	1019.0	1163.7	1418.6	1511.3	1560.8	1496.1	...
Spain	4997.7	7792.3	13330.8	18314.7	20414.9	20548.2	20350.3	20149.1	19361.2	19318.4	19245.9	...
Sweden	6293.1	...	10499.9	12083.8	13496.1	12720.7	12594.1	13419.7	13879.5	14304.1	13882.8	...
Switzerland	...	5767.2	...	...	10525.2	...	...	...	13571.2	...	...	...
Turkey	1203.9	2824.0	4617.5	7048.0	7744.5	8864.3	9859.3	11245.5	12731.4	13713.5	15132.3	...
United Kingdom	21887.3	27865.3	34080.7	38731.0	39396.9	39420.2	38165.6	39132.6	38811.9	41743.4	44174.1	...
USA	184077.0	269513.0	328128.0	380316.0	407238.0	406405.0	410093.0	428745.0	436078.0	456977.0	...	...

(continued)

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU countries which are not OECD members												
Bulgaria	...	258.6	347.4	429.0	498.8	548.9	637.0	614.9	709.7	742.7	954.5	...
Croatia	...	511.0	590.4	665.1	802.3	725.4	624.1	662.5	676.8	739.8	710.2	...
Cyprus	...	32.8	74.8	98.5	107.1	124.1	127.3	128.0	120.7	124.4	124.6	...
Latvia	...	84.3	167.6	232.2	252.0	165.4	223.1	279.9	281.9	271.9	314.3	...
Lithuania	...	178.0	364.6	498.9	524.4	479.8	487.1	617.2	644.5	723.3	794.9	...
Malta	...	...	48.0	55.6	58.3	58.1	75.7	83.7	105.9	109.1	111.2	...
Romania	974.6	468.8	831.8	1438.4	1866.7	1493.2	1516.6	1726.2	1738.4	1452.9	1505.4	...
Other countries												
Argentina	...	1592.8	2037.4	2676.2	2951.2	3410.0	4038.3	4655.2	5454.1	5785.0	5700.9	...
Brazil	...	15834.0	20547.2	25891.6	28943.7	28848.3	32514.7	33904.4	35462.2	39704.5	...	...
China	12781.9	33044.5	86827.6	124187.1	146126.6	185266.7	213460.1	247808.3	292062.9	333521.6	368731.6	...
Georgia	...	24.6	32.3	...	...	...	...	...	...	26.9	33.6	...
India	...	15662.8	26532.1	32866.2	37028.5	39401.9	42813.4	48063.0	...	...	...	...
Indonesia	...	659.0	...	...	...	1553.0	...	...	...	2131.9	...	...
Iran	...	...	5853.6	...	7690.5	3360.6	3537.7	...	4170.4	...	...	...
Malaysia	...	1405.8	...	...	4248.1	5400.0	6023.5	6456.6	7329.9	...	9679.6	...
Republic of South Africa	...	...	4051.2	4877.7	5162.9	4819.1	4433.3	4652.2	4824.2	...	...	...
Singapore	1265.3	3003.5	5080.1	6905.3	8036.2	6633.2	7218.1	8359.7	8204.7	8726.4	10054.8	...
Taiwan	5608.5	9182.7	15298.9	19396.5	21536.8	22651.1	25060.8	27422.7	29055.1	30722.4	32440.4	...

8.2. GROSS DOMESTIC EXPENDITURE ON R&D AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT: 2015*



* Or the previous or following years for which the data are available.

8.3. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE: 2015*

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Russia	100	31.1	59.2	9.6	0.1
CIS countries					
Armenia	100	83.1	...	16.9	...
Azerbaijan	100	86.1	9.9	4.0	...
Belarus	100	23.8	65.3	10.8	0.0
Kazakhstan	100	29.7	29.4	30.7	10.2
Kyrgyzstan	100	64.2	14.3	14.2	...
Republic of Moldova	100	69.6	18.4	12.0	...
Tajikistan	100	88.3	...	11.7	...
Ukraine	100	37.8	56.4	5.8	...
Uzbekistan	100	48.7	31.7	18.7	0.8
OECD countries					
Australia	100	11.2	56.3	29.6	2.8
Austria	100	4.4	70.8	24.3	0.4
Belgium	100	8.2	71.2	20.2	0.3
Canada	100	9.2	49.9	40.4	0.5
Chile	100	8.1	33.5	38.9	19.5
Czech Republic	100	18.2	56.0	25.4	0.4
Denmark	100	2.3	64.0	33.2	0.4
Estonia	100	11.0	43.5	44.3	1.2

* Or the previous or following years for which the data are available.

(continued)

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Finland	100	8.6	67.7	22.9	0.8
France	100	13.1	64.8	20.6	1.5
Germany	100	14.8	67.5	17.7	...
Greece	100	27.7	33.9	37.2	1.2
Hungary	100	13.7	71.5	13.5	...
Iceland	100	6.5	56.8	35.3	1.4
Ireland	100	4.6	74.7	20.7	...
Israel	100	1.9	84.5	12.5	1.1
Italy	100	14.5	55.7	26.9	2.9
Japan	100	8.3	77.8	12.6	1.3
Luxembourg	100	28.9	52.6	18.5	...
Mexico	100	30.5	39.0	28.9	1.6
Netherlands	100	11.9	56.0	32.1	...
New Zealand	100	23.2	46.4	30.4	...
Norway	100	15.2	53.7	31.0	...
Poland	100	24.0	46.6	29.2	0.3
Portugal	100	6.3	46.4	45.6	1.7
Republic of Korea	100	11.2	78.2	9.0	1.5
Slovakia	100	28.3	36.8	34.4	0.4
Slovenia	100	12.2	77.3	10.5	0.0
Spain	100	18.8	52.9	28.1	0.2
Sweden	100	3.7	67.0	29.0	0.2
Switzerland	100	0.8	69.3	28.1	1.8
Turkey	100	9.7	49.8	40.5	...
United Kingdom	100	7.8	64.4	26.1	1.7
USA	100	11.2	70.6	14.2	4.1

(continued)

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
EU countries which are not OECD members					
Bulgaria	100	24.7	65.7	8.8	0.8
Croatia	100	26.1	48.3	25.7	...
Cyprus	100	13.7	17.3	52.7	16.3
Latvia	100	24.0	35.5	40.5	...
Lithuania	100	17.3	29.6	53.1	...
Malta	100	9.0	59.8	31.2	...
Romania	100	43.0	41.5	15.2	0.4
Other countries					
Argentina	100	47.7	20.1	30.5	1.7
China	100	15.8	77.3	6.9	...
Georgia	100	...	...	100.0	...
India	100	60.5	35.5	4.1	...
Indonesia	100	39.4	25.7	34.9	...
Iran	100	56.1	10.6	33.3	...
Malaysia	100	8.2	45.7	46.1	...
Republic of South Africa	100	22.9	44.3	30.7	2.1
Singapore	100	11.4	61.2	27.4	...
Taiwan	100	12.6	77.2	10.0	0.3

8.4. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS: 2015*

	Gross domestic expenditure on R&D	Government sector funds	Business enterprise sector funds	Other national sources	Funds from abroad
Russia	100	69.5**	26.5	1.4	2.6
CIS countries					
Azerbaijan	100	67.6	30.5	1.7	0.2
Armenia	100	71.0	...	...	5.1
Belarus	100	48.3	43.8	...	7.9
Kazakhstan	100	63.7	28.9	...	0.8
Kyrgyzstan	100	90.4	7.4	0.2	1.0
Republic of Moldova	100	...	...	...	12.8
Tajikistan	100	92.5	...	0.2	0.2
Ukraine	100	43.8	35.2	0.2	19.8
Uzbekistan	100	58.9	35.9	...	0.8
OECD countries					
Australia	100	34.6	61.9	1.9	1.6
Austria	100	36.6	47.0	0.5	15.9
Belgium	100	28.5	56.9	1.4	13.2
Canada	100	34.6	45.4	14.0	6.0
Chile	100	44.1	32.0	10.2	13.8
Czech Republic	100	32.9	35.9	0.7	30.5
Denmark	100	30.4	57.9	4.3	7.4
Estonia	100	49.5	37.1	1.0	12.5

* Or the previous or following years for which the data are available.

** Including budget funds, government budget appropriations for higher education institutions; government sector institutions funds (including intramural funds of the institutions (organisations)).

(continued)

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Finland	100	27.5	53.5	1.7	17.3
France	100	35.2	55.0	1.7	8.0
Germany	100	28.8	65.8	0.3	5.0
Greece	100	53.3	29.8	3.7	13.2
Hungary	100	33.5	48.3	0.7	17.5
Iceland	100	35.0	39.2	5.8	20.1
Ireland	100	24.6	54.5	1.1	19.8
Israel	100	12.7	36.5	2.0	48.8
Italy	100	41.4	45.2	3.7	9.7
Japan	100	16.0	77.3	6.3	0.4
Luxembourg	100	48.4	16.5	2.8	32.3
Mexico	100	73.6	23.8	2.2	0.5
Netherlands	100	33.2	51.1	3.1	12.7
New Zealand	100	39.8	39.8	13.2	7.2
Norway	100	45.8	43.1	1.6	9.5
Poland	100	45.2	39.0	2.4	13.4
Portugal	100	46.4	42.3	5.2	6.1
Republic of Korea	100	23.0	75.3	1.0	0.7
Slovakia	100	41.4	32.2	2.7	23.7
Slovenia	100	21.8	68.4	0.6	9.3
Spain	100	41.4	46.4	4.8	7.4
Sweden	100	28.3	61.0	4.1	6.7
Switzerland	100	25.4	60.8	1.7	12.1
Turkey	100	26.3	50.9	21.8	1.1
United Kingdom	100	28.8	46.5	5.8	18.9
USA	100	27.7	60.9	6.9	4.5

(continued)

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
EU countries which are not OECD members					
Bulgaria	100	31.6	19.5	0.6	48.3
Croatia	100	41.7	42.9	2.6	12.8
Cyprus	100	62.1	12.1	6.2	19.6
Latvia	100	25.6	27.8	2.3	44.2
Lithuania	100	33.7	31.7	0.4	34.3
Malta	100	27.2	50.0	1.3	21.5
Romania	100	48.5	32.9	1.5	17.0
Other countries					
Argentina	100	75.4	21.4	2.5	0.7
Brazil	100	57.7	40.3	1.9	...
China	100	20.3	75.4	...	0.8
Georgia	100	42.1	...	43.9	14.0
Indonesia	100	84.5	14.7	0.2	...
Iran	100	61.6	30.9	7.4	...
Malaysia	100	29.7	60.2	2.5	4.6
Republic of South Africa	100	45.4	38.3	3.2	13.1
Singapore	100	37.1	54.1	2.0	6.8
Taiwan	100	21.7	77.2	1.0	0.1

8.5. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY FIELD OF SCIENCE AND TECHNOLOGY: 2015*

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
Russia	100	17.4	73.4	3.5	1.6	2.6	1.5
CIS countries							
Armenia	100	45.9	23.4	2.9	0.7	6.6	12.1
Azerbaijan	100	24.2	48.4	6.4	5.7	6.9	8.4
Belarus	100	17.0	68.2	4.3	5.6	3.8	1.1
Kazakhstan	100	36.3	38.8	5.6	9.1	4.6	5.6
Kyrgyzstan	100	49.8	19.2	10.8	9.9	2.0	8.2
Republic of Moldova	100	39.8	18.7	10.4	15.4	9.4	6.3
Tajikistan	100	24.5	10.9	6.7	26.6	10.3	21.0
Ukraine	100	19.6	57.7	5.5	6.2	4.7	1.9
Uzbekistan	100	31.1	36.2	7.4	7.5	11.0	6.7
OECD countries							
Australia	100	30.8	41.8	15.2	4.8	6.0	1.5
Chile	100	32.0	32.5	11.6	14.1	7.7	2.0
Czech Republic	100	33.2	50.2	7.9	2.2	3.5	3.1
Greece	100	15.1	39.9	20.5	4.7	8.4	11.3
Hungary	100	25.2	53.9	7.2	5.9	3.7	2.8
Iceland	100	15.9	47.5	4.8	8.7	19.3	3.8
Mexico	100	20.8	44.2	10.5	6.4	12.2	5.9
Netherlands	100	20.3	41.5	16.4	9.0	9.6	3.2
Poland	100	21.3	52.9	10.5	5.1	6.4	3.8
Portugal	100	24.0	41.6	12.3	3.6	11.7	7.0
Republic of Korea	100	13.8	68.6	11.8	2.2	2.2	1.4
Slovakia	100	17.8	48.8	10.0	6.9	10.3	6.2

* Or the previous or following years for which the data are available.

(continued)

	Total	Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities
Slovenia	100	34.9	53.7	2.8	2.1	3.9	2.7
Spain	100	19.1	53.1	14.2	5.9	5.1	2.5
Turkey	100	10.6	54.6	15.0	4.4	10.1	5.2
United Kingdom	100	7.2	5.2	8.0	1.4	6.7	6.2
EU countries which are not OECD members							
Bulgaria	100	18.1	23.7	43.3	6.9	3.6	4.3
Croatia	100	21.4	41.1	16.0	7.9	8.7	4.8
Cyprus	100	36.6	25.4	3.7	9.2	16.7	8.4
Latvia	100	31.9	34.0	11.1	9.1	10.7	3.3
Lithuania	100	24.2	15.2	10.0	4.7	11.6	8.9
Malta	100	26.4	29.6	22.4	3.0	11.2	5.8
Romania	100	28.3	42.3	12.3	...	4.2	4.6
Other countries							
Argentina	100	23.1	36.5	9.8	11.3	12.4	6.0
China	100	16.6	70.8	3.4	7.1	2.1**	...
Georgia	100	13.6	21.9	15.7	...	15.3	17.4
India	100	22.6	47.6	6.8	14.5	2.9	...
Malaysia	100	47.2	31.1	5.9	7.6	7.0	1.2
Republic of South Africa	100	33.0	27.3	17.2	7.7	12.6	2.2
Singapore	100	11.6	61.0	18.1	2.8	...	...
Taiwan	100	10.5	76.9	7.0	2.2	2.4	1.0

* Or the previous or following years for which the data are available.

** Including Humanities.

8.6. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY: 2015*

	Intramural current expenditure on R&D	Basic research	Applied research	Experimental development
Russia	100	15.5	19.9	64.7
CIS countries				
Armenia	100	34.3	9.6	56.1
Azerbaijan	100	52.2	21.2	2.6
Belarus	100	14.2	26.1	59.7
Kazakhstan**	100	29.5	54.1	16.4
Kyrgyzstan	100	53.1	10.2	36.7
Republic of Moldova	100	26.4	56.2	17.4
Tajikistan	100	62.7	21.6	15.7
Ukraine	100	24.6	16.5	47.8
Uzbekistan	100	22.6	41.8	28.8
OECD countries				
Australia**	100	20.1	38.7	41.2
Austria**	100	18.9	35.6	43.9
Belgium**	100	19.9	38.7	41.4
Chile	100	35.2	32.9	31.9
Denmark	100	19.1	36.9	44.1
Estonia	100	28.7	32.5	38.8
France**	100	24.2	37.9	34.5
Greece**	100	34.6	38.9	26.5
Hungary	100	19.9	31.1	48.9
Iceland	100	36.7	28.9	30.2
Ireland**	100	18.3	33.0	48.7

(continued)

	Intramural current expenditure on R&D	Basic research	Applied research	Experimental development
Israel	100	10.2	11.1	78.6
Italy**	100	25.4	48.0	26.7
Japan**	100	12.3	19.9	63.4
Mexico**	100	24.4	30.8	44.8
Netherlands**	100	28.7	45.5	25.8
New Zealand**	100	25.2	39.1	35.8
Norway	100	18.8	39.5	41.6
Poland	100	34.3	21.6	44.1
Portugal	100	24.8	41.1	34.1
Republic of Korea**	100	17.6	18.9	63.4
Republic of Korea**	100	32.9	32.4	34.7
Slovakia	100	44.1	25.4	30.6
Slovenia	100	13.9	50.5	35.6
Spain	100	22.9	41.3	35.8
Switzerland**	100	30.4	40.7	28.9
United Kingdom	100	13.1	46.2	40.7
USA	100	17.6	19.9	62.5
EU countries which are not OECD members				
Bulgaria**	100	12.5	73.8	13.7
Croatia**	100	33.2	33.9	32.9
Cyprus**	100	20.8	62.6	16.6
Latvia**	100	24.4	56.5	19.1
Lithuania**	100	30.9	45.6	23.5
Malta**	100	54.7	20.8	9.8
Romania	100	38.4	41.9	19.7

(continued)

	Intramural current expenditure on R&D	Basic research	Applied research	Experimental development
Other countries				
Argentina**	100	33.5	45.7	20.8
Georgia**	100	23.7	8.7	0.3
India**	100	16.0	22.3	23.5
China**	100	4.7	10.7	84.5
Malaysia	100	16.9	75.5	7.5
Singapore**	100	20.5	33.2	46.4
Taiwan**	100	9.0	23.0	68.1
Republic of South Africa**	100	25.3	46.3	28.4

* Or the previous or following years for which the data are available.

** As a percentage of gross domestic expenditure on R&D.

8.7. GOVERNMENT BUDGET APPROPRIATIONS ON R&D

(million current PPP USD)

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Russia	5977.1	4784.6	13254.0	18502.4	20829.0	27813.7	26060.3	28259.5	30546.1	35903.1	33932.8	34988.7
OECD countries												
Australia	2324.6	2859.3	3729.1	3835.7	3895.0	4639.5	4677.2	4742.0	4496.0	4958.2	4804.2	4716.7
Austria	1230.3	1430.3	1827.3	2040.5	2330.5	2545.8	2699.4	2906.4	2990.9	3222.2	3276.1	3397.5
Belgium	1164.9	1597.8	1987.2	2283.1	2684.0	2666.7	2782.5	2852.4	2998.2	3093.2	3320.4	...
Canada	3833.3	4589.9	6777.1	7534.1	7933.5	8413.0	8489.6	7736.9	7746.2	7943.3	...	...
Chile	...	...	...	...	...	...	...	691.5	821.9	881.4	985.4	994.6
Czech Republic	...	834.7	1148.4	1468.3	1436.7	1654.7	1620.9	1928.2	1953.8	2069.1	2101.9	2071.8
Denmark	792.3	1171.2	1326.1	1672.7	1930.4	2163.1	2302.1	2440.3	2496.7	2649.6	2651.3	2676.9
Estonia	...	44.9	90.1	139.7	189.6	183.7	196.3	240.2	277.7	289.9	262.9	...
Finland	929.9	1302.9	1651.7	1849.3	1976.6	2134.7	2272.8	2282.3	2261.9	2210.4	2167.2	2185.0
France	13264.7	14743.5	18084.5	15798.5	19214.2	20336.7	19106.4	19913.4	17838.8	18295.5	18096.3	17290.4
Germany	16069.2	16812.5	19865.0	22513.6	24261.3	26822.9	28916.9	30279.0	30638.2	32640.1	32683.3	33029.6
Greece	400.6	619.8	889.5	918.5	1466.4	1217.7	975.3	926.2	1098.5	1396.3	1284.7	1303.2
Hungary	...	...	708.7	747.7	881.2	952.1	767.5	662.9	767.9	1556.2	698.5	796.8
Iceland	44.9	76.2	91.0	98.9	116.6	130.4	120.3	122.9	130.3	146.8	140.6	...
Ireland	209.6	314.1	711.7	932.8	977.8	997.9	979.0	945.6	909.2	880.2	876.5	866.3
Israel	883.5	1292.4	1044.9	1026.9	1156.6	1254.5	1355.2	1479.7	1568.8	1652.1	1753.2	...
Italy	6731.0	9372.3	11050.6	12165.1	12602.6	12543.5	12245.3	11917.0	11688.9	11319.7	11287.8	...
Japan	14324.8	21193.4	27617.8	29188.0	30559.9	30857.4	32150.0	34105.2	35413.2	35133.9	34869.1	32794.6
Luxembourg	...	25.1	81.0	147.9	185.2	217.8	244.3	282.7	335.8	389.9	394.1	...
Mexico	1263.3	2119.1	2599.5	2873.6	3597.0	3727.0	4698.4	4735.8	...	...	...	...
Netherlands	2830.8	3793.3	4529.7	5194.9	5438.9	5764.1	5721.9	5992.1	5641.5	5936.0	5984.4	6206.2
New Zealand	307.7	...	...	542.7	657.7	685.7	681.5	729.2	735.4	775.1	895.8	991.2

(continued)

	1995	2000	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015
Norway	823.2	1057.5	1554.6	1979.8	2113.8	2302.8	2418.4	2501.0	2564.8	2753.8	2882.8	3111.6
Poland	1141.0	1539.9	1547.5	2011.4	2079.3	2440.3	2884.9	2649.6	3161.5	3396.4	4131.7	...
Portugal	560.3	1019.8	1581.1	1927.7	2420.9	2766.8	2799.1	2830.5	2634.3	2708.5	2804.3	3016.6
Republic of Korea	...	5017.9	9886.5	12675.7	14099.7	15405.6	16300.1	17423.9	18744.5	19677.4	20159.5	...
Slovakia	171.7	213.0	244.1	238.4	348.2	447.8	496.0	624.1	574.2	581.3	587.6	580.7
Slovenia	...	174.0	272.7	286.3	298.9	380.0	339.9	348.1	309.3	291.3	271.1	267.3
Spain	3011.2	5175.9	6479.5	10963.6	11684.6	12259.6	11589.5	10302.1	8942.4	8436.3	8671.7	...
Sweden	2087.4	1731.5	2535.0	2780.1	2917.3	3169.5	3282.6	3272.8	3578.6	3613.9	3684.7	3670.3
Switzerland	...	1474.8	...	...	2689.8	...	3076	...	3993.5	...	4331.3	...
Turkey	...	...	...	...	2726.5	3958.6	4027.7	4462.2	4408.7	5397.8	4824.9	4732.8
United Kingdom	8799.5	10517.4	13476.8	14478.3	14188.8	14370.4	13538.9	13020.0	13083.0	14435.9	14553.2	...
USA	68791.0	83612.5	131259.0	141890.3	144391.0	164292.0	148962.0	144379.0	143737.0	132477.0	136159.0	137172.0
Other countries												
Argentina	...	898.3	1092.1	1533.3	1724.9	2136.6	2258.4	2477.1	2808.2	...	...	...
Romania	554.6	178.2	441.7	1018.4	1283.6	968.2	935.1	926.4	777.0	774.7	837.0	1061.4
Taiwan	...	2967.0	4886.4	5910.0	6262.8	6667.9	7044.2	7362.6	7350.6	7303.9	7359.0	7569.5

8.8. R&D PERSONNEL: 2015*
(*person-years; in full-time equivalent*)

	R&D personnel	Researchers
Russia	833654	449180
CIS countries		
Armenia	5627	4144
Azerbaijan	23329	16337
Belarus	28937	18353
Kazakhstan	17586	12552
Kyrgyzstan	4242	3013
Republic of Moldova	4149	2655
Tajikistan	3389	2152
Ukraine	87390	46191
Uzbekistan	35836	30785
OECD countries		
Australia	147809	100414
Austria	68101	41595
Belgium	68701	46880
Canada	226620	159190
Chile	15910	7602
Czech Republic	64444	36040
Denmark	58745	40647
Estonia	5796	4323

* Or the previous or following years for which the data are available. For several CIS countries (Azerbaijan, Armenia, Belarus, Kyrgyzstan, Tajikistan), Iran and Indonesia the number given is the headcount (*individuals*). The data for Mexico and Indonesia refer to different years.

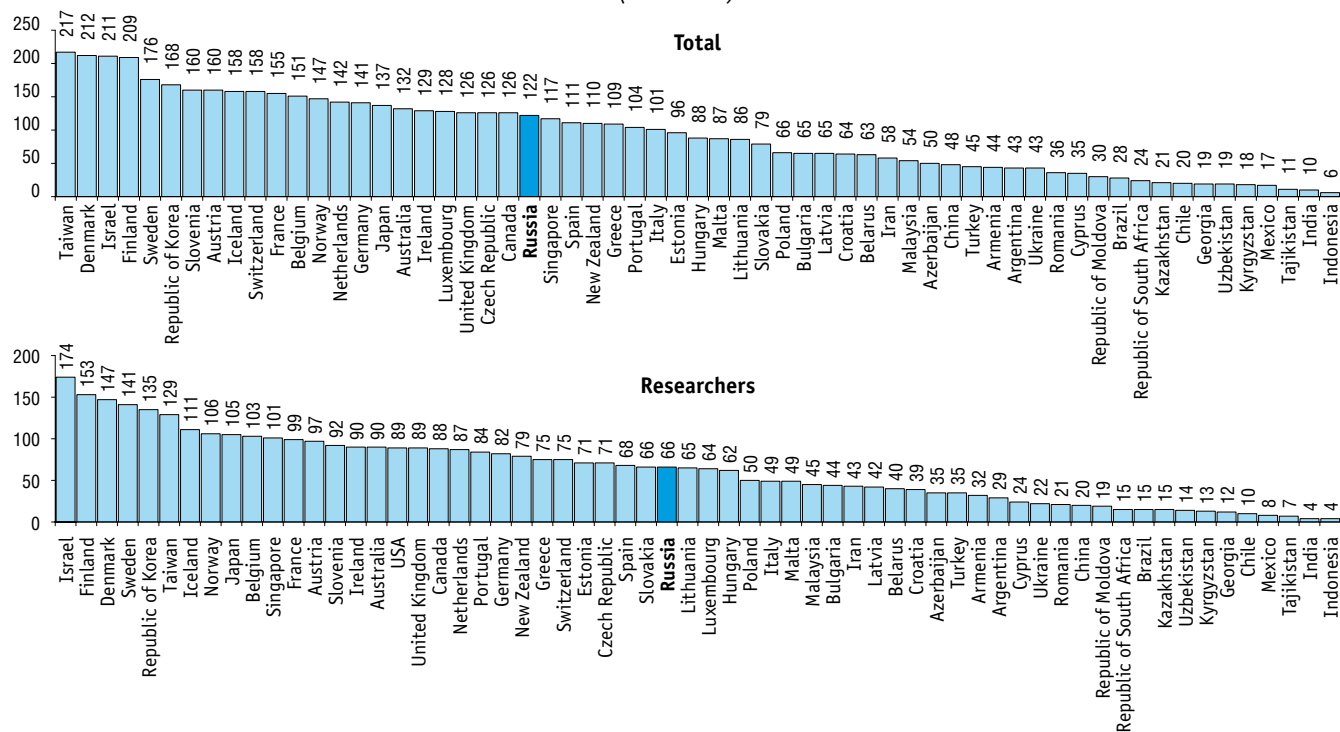
(continued)

	R&D personnel	Researchers
Finland	52130	38281
France	422452	269377
Germany	603911	351130
Greece	43316	29877
Hungary	37329	26213
Iceland	2766	1950
Ireland	24742	17243
Israel	77143	63521
Italy	246423	119977
Japan	895285	682935
Luxembourg	5061	2548
Mexico	70293	38823
Netherlands	124066	76229
New Zealand	24900	17900
Norway	40297	29237
Poland	104359	78622
Portugal	46878	38155
Republic of Korea	430868	345463
Slovakia	17594	14742
Slovenia	14866	8574
Spain	200233	122235
Sweden	83473	66643
Switzerland	75476	35950
Turkey	115444	89657
United Kingdom	387934	273560
USA	...	1307973

(continued)

	R&D personnel	Researchers
EU countries which are not OECD members		
Bulgaria	19335	13201
Croatia	10027	6117
Cyprus	1260	865
Latvia	5739	3748
Lithuania	11283	8638
Malta	1586	891
Romania	31391	18109
Other countries		
Argentina	76904	51665
Brazil	266709	138653
China	3710580	1524280
Georgia	3726	2362
India	441126	192819
Indonesia	55118	41143
Iran	128009	95200
Malaysia	75062	61351
Republic of South Africa	35050	21383
Singapore	42543	36666
Taiwan	240528	142983

8.9. R&D PERSONNEL PER 10 000 EMPLOYMENT: 2015*
(headcount)



* Or the previous or following years for which the data are available. For several CIS countries (Azerbaijan, Armenia, Belarus, Kyrgyzstan, Tajikistan), Iran and Indonesia the calculation is headcount based, for the rest of the countries it is FTE based.

8.10. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY SECTOR OF PERFORMANCE: 2015*

	Government sector	Business enterprise sector	Higher education sector
Russia	32.7	46.4	20.6
CIS countries			
Armenia	70.6	...	29.4
Azerbaijan	72.5	5.3	22.0
Belarus	29.7	60.3	10.0
Kazakhstan	22.4	18.3	53.6
Kyrgyzstan	55.7	2.9	41.5
Republic of Moldova	72.0	6.6	21.4
Tajikistan	69.9	...	30.1
Ukraine	57.1	32.8	10.1
Uzbekistan	15.4	5.0	79.3
OECD countries			
Australia	...	27.9	60.6
Austria	3.9	63.7	31.8
Belgium	7.9	50.8	40.8
Canada	5.7	56.0	37.9
Chile	10.1	29.8	47.4
Czech Republic	18.3	50.7	30.4
Denmark	3.1	59.5	36.9
Estonia	12.3	29.3	56.5

* Or the previous or following years for which the data are available. For several CIS countries (Azerbaijan, Armenia, Belarus, Kyrgyzstan, Tajikistan, Uzbekistan) the calculation is headcount based, for the rest of the countries it is FTE based.

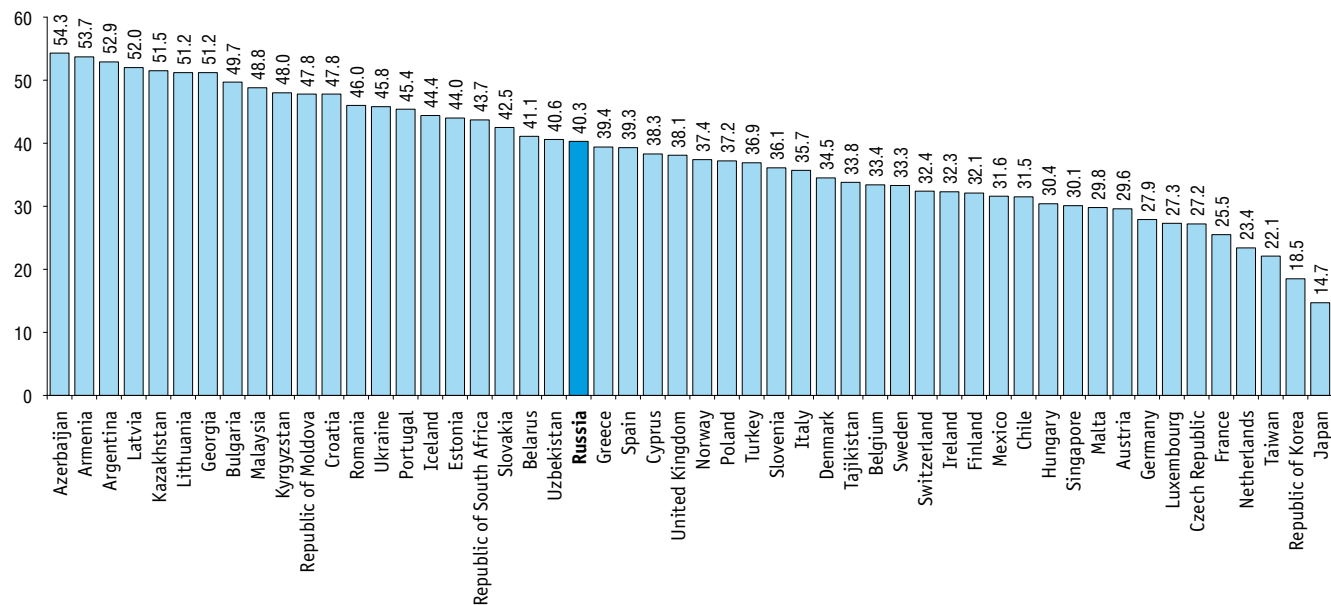
(continued)

	Government sector	Business enterprise sector	Higher education sector
Finland	10.7	55.8	32.3
France	10.9	60.4	27.2
Germany	15.1	56.4	28.5
Greece	19.6	16.5	62.9
Hungary	18.2	59.4	22.4
Iceland	9.1	37.7	51.9
Ireland	2.7	65.2	32.1
Israel	0.8	83.7	14.9
Italy	18.0	38.3	40.2
Japan	4.4	74.1	20.1
Luxembourg	29.1	40.3	30.5
Mexico	23.6	30.0	43.0
Netherlands	11.3	59.9	28.8
New Zealand	11.2	34.1	54.7
Norway	15.8	49.0	35.2
Poland	17.6	31.7	50.5
Portugal	3.8	29.4	65.5
Republic of Korea	7.2	79.5	12.1
Slovakia	21.2	17.9	60.8
Slovenia	20.3	54.1	25.4
Spain	16.5	36.6	46.8
Sweden	3.5	66.7	29.4
Switzerland	1.2	46.2	52.2
Turkey	7.3	46.7	46.0
United Kingdom	2.8	38.2	57.9
USA	...	69.9	...

(continued)

	Government sector	Business enterprise sector	Higher education sector
EU countries which are not OECD members			
Bulgaria	38.2	27.0	34.1
Croatia	30.4	15.1	54.6
Cyprus	9.2	20.8	60.1
Latvia	18.2	20.7	61.1
Lithuania	16.2	23.1	60.7
Malta	1.8	59.8	38.4
Romania	35.4	29.0	35.2
Other countries			
Argentina	48.0	6.2	44.8
Brazil	5.5	25.9	67.8
China	19.4	62.1	18.5
Georgia	...	...	100.0
India	45.6	38.7	11.5
Indonesia	29.5	35.5	35.0
Iran	33.6	15.0	51.5
Malaysia	6.8	10.8	82.5
Republic of South Africa	13.0	21.3	64.3
Singapore	5.3	50.5	44.2
Taiwan	10.3	67.9	21.4

8.11. WOMEN RESEARCHERS AS A PERCENTAGE OF TOTAL RESEARCHERS: 2015*



* Or the previous or following years for which the data are available. The calculation is headcount based.

8.12. NUMBER OF PUBLICATIONS AND CITATIONS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE: 2011–2015*

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Russia	180 878	695 175	3.84	0.70
CIS countries				
Armenia	4 001	27 422	6.85	1.34
Azerbaijan	2 690	19 801	7.36	1.15
Belarus	5 046	45 317	8.98	1.52
Kazakhstan	3 971	29 400	7.40	1.37
Kyrgyzstan	466	5 063	10.86	2.36
Republic of Moldova	1 226	3 985	3.25	0.84
Tajikistan	252	1 105	4.38	0.76
Turkmenistan	54	305	5.65	1.00
Ukraine	14 311	128 895	9.01	1.34
Uzbekistan	1 230	2 414	1.96	0.54
OECD countries				
Australia	84 289	896 232	10.63	1.50
Austria	51 341	408 547	7.96	1.29
Belgium	64 404	410 795	6.38	1.06
Canada	70 002	624 473	8.92	1.44
Chile	3 801	19 814	5.21	0.94
Czech Republic	7 269	29 535	4.06	0.87
Denmark	42 586	227 758	5.35	0.90
Estonia	1 435	8 845	6.16	1.33

(continued)

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Finland	6 793	35 926	5.29	1.02
France	29 764	127 597	4.29	0.65
Germany	140 615	1 367 600	9.73	1.43
Greece	21 255	74 268	3.49	0.69
Hungary	13 080	48 736	3.73	0.70
Iceland	2 148	12 851	5.98	0.99
Ireland	10 684	98 637	9.23	1.60
Israel	26 049	110 459	4.24	1.14
Italy	70 002	624 473	8.92	1.44
Japan	21 687	119 730	5.52	0.85
Luxembourg	1 949	19 725	10.12	1.43
Mexico	13 080	48 736	3.73	0.70
Netherlands	38 829	279 133	7.19	1.06
New Zealand	6 822	50 615	7.42	1.50
Norway	8 235	73 162	8.88	1.47
Poland	21 387	129 504	6.06	0.96
Portugal	13 080	48 736	3.73	0.70
Republic of Korea	29 764	127 597	4.29	0.65
Slovakia	4 019	18 180	4.52	0.78
Slovenia	3 971	29 400	7.40	1.37
Spain	66 728	497 807	7.46	1.19
Sweden	8 235	73 162	8.88	1.47

(continued)

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Switzerland	13 080	48 736	3.73	0.70
Turkey	14 636	67 683	4.62	0.89
United Kingdom	149 025	587 277	3.94	0.73
USA	53 959	372 331	6.90	1.19
EU countries which are not OECD members				
Bulgaria	1 458	13 381	9.18	1.70
Croatia	1 614	7 251	4.49	0.74
Cyprus	1 106	10 315	9.33	1.54
Latvia	1 148	7 299	6.36	1.01
Lithuania	1 435	8 845	6.16	1.33
Malta	283	2 933	10.36	2.43
Romania	3 309	44 242	13.37	1.89
Other countries				
Argentina	2 248	8 094	3.60	1.20
Brazil	6 653	38 237	5.75	1.42
China	8 235	73 162	8.88	1.47
Egypt	1 949	19 725	10.12	1.43
Georgia	385	2 393	6.22	1.09
India	6 793	35 926	5.29	1.02
Indonesia	1 148	7 299	6.36	1.01
Iran	4 399	10 741	2.44	0.58
Malaysia	2 822	20 010	7.09	1.01
Pakistan	1 289	4 472	3.47	1.06

(continued)

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Republic of South Africa	1 435	8 845	6.16	1.33
Saudi Arabia	1 635	11 513	7.04	1.05
Serbia	1 180	7 165	6.07	0.93
Singapore	1 994	13 869	6.96	1.23
Taiwan	4 001	27 422	6.85	1.34
Thailand	1 226	3 985	3.25	0.84

* According to the analytical system InCites Thomson Reuters.

** The analysis includes citations from publications since the beginning of 2011 till October 26, 2016.

*** Average citation is normalized by field and in relation to worldwide average level.

8.13. NUMBER OF PUBLICATIONS AND CITATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2011–2015*

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Russia	244 500	865 049	3.54	0.74
CIS countries				
Armenia	5 049	47 385	9.39	1.16
Azerbaijan	3 766	21 413	5.69	0.77
Belarus	8 233	51 274	6.23	0.89
Kazakhstan	7 491	13 084	1.75	0.47
Kyrgyzstan	605	3 027	5.00	0.96
Republic of Moldova	1 942	8 944	4.61	0.87
Tajikistan	498	1 359	2.73	0.44
Turkmenistan	128	493	3.85	1.25
Ukraine	45 771	159 226	3.48	0.62
Uzbekistan	2 430	7 051	2.90	0.48
OECD countries				
Australia	363 304	3 442 923	9.48	1.55
Austria	100 036	976 148	9.76	1.54
Belgium	136 680	1 480 277	10.83	1.69
Canada	428 505	4 169 354	9.73	1.49
Chile	44 663	306 988	6.87	1.09
Czech Republic	95 263	556 036	5.84	1.10
Denmark	104 162	1 235 375	11.86	1.83
Estonia	12 369	121 556	9.83	1.68

(continued)

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Finland	83 513	796 753	9.54	1.59
France	512 014	4 495 100	8.78	1.36
Germany	719 890	6 700 780	9.31	1.44
Greece	82 010	658 918	8.03	1.33
Hungary	45 838	338 633	7.39	1.15
Iceland	6 002	88 557	14.75	2.15
Ireland	56 152	562 390	10.02	1.52
Israel	85 410	833 187	9.76	1.48
Italy	441 547	3 926 597	8.89	1.52
Japan	610 109	3 786 704	6.21	0.96
Luxembourg	6 896	54 834	7.95	1.65
Mexico	88 371	479 283	5.42	0.86
Netherlands	242 413	2 932 690	12.10	1.78
New Zealand	60 176	531 724	8.84	1.44
Norway	80 920	795 085	9.83	1.59
Poland	176 797	925 038	5.23	0.99
Portugal	96 940	721 959	7.45	1.25
Republic of Korea	354 581	2 354 509	6.64	1.07
Slovakia	30 984	144 201	4.65	1.05
Slovenia	26 754	179 896	6.72	1.14
Spain	378 270	3 205 938	8.48	1.30
Sweden	161 316	1 739 494	10.78	1.66

(continued)

	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Switzerland	181 646	2 300 039	12.66	1.84
Turkey	176 049	781 540	4.44	0.78
United Kingdom	756 224	7 652 116	10.12	1.57
USA	2 685 021	26 270 411	9.78	1.48
EU countries which are not OECD members				
Bulgaria	18 694	101 433	5.43	0.84
Croatia	29 088	150 188	5.16	0.82
Cyprus	8 188	66 537	8.13	1.52
Latvia	8 045	31 781	3.95	1.03
Lithuania	15 087	81 425	5.40	0.97
Malta	2 142	10 835	5.06	1.07
Romania	68 287	256 213	3.75	0.77
Other countries				
Argentina	56 348	386 761	6.86	1.01
Brazil	293 121	1 407 144	4.80	0.81
China	2 151 673	10 270 290	4.77	0.82
Egypt	67 129	331 054	4.93	0.85
Georgia	4 713	50 406	10.70	1.54
India	532 806	2 294 790	4.31	0.75
Indonesia	24 467	84 973	3.47	0.81
Iran	201 544	944 212	4.68	0.83
Malaysia	117 292	463 400	3.95	0.90
Pakistan	51 408	244 477	4.76	0.85

(continued)

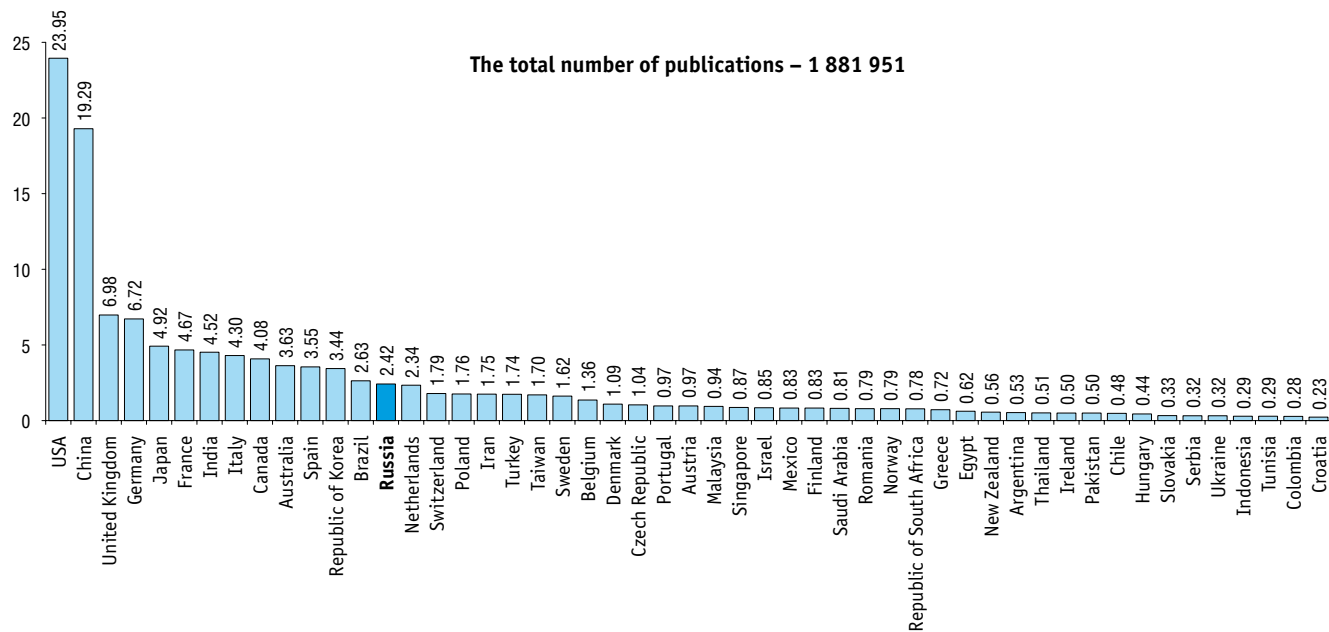
	Number of publications	Number of citations**	Number of citations per publication	Average normalized citation***
Republic of South Africa	77 001	520 792	6.76	1.16
Saudi Arabia	68 909	495 779	7.19	1.28
Serbia	34 050	173 469	5.09	0.86
Singapore	84 018	945 350	11.25	1.81
Taiwan	199 548	1 210 754	6.07	1.02
Thailand	57 852	309 344	5.35	0.94

* According to the analytical system Scopus SciVal.

** The analysis includes citations from publications since the beginning of 2011 till October 24, 2016.

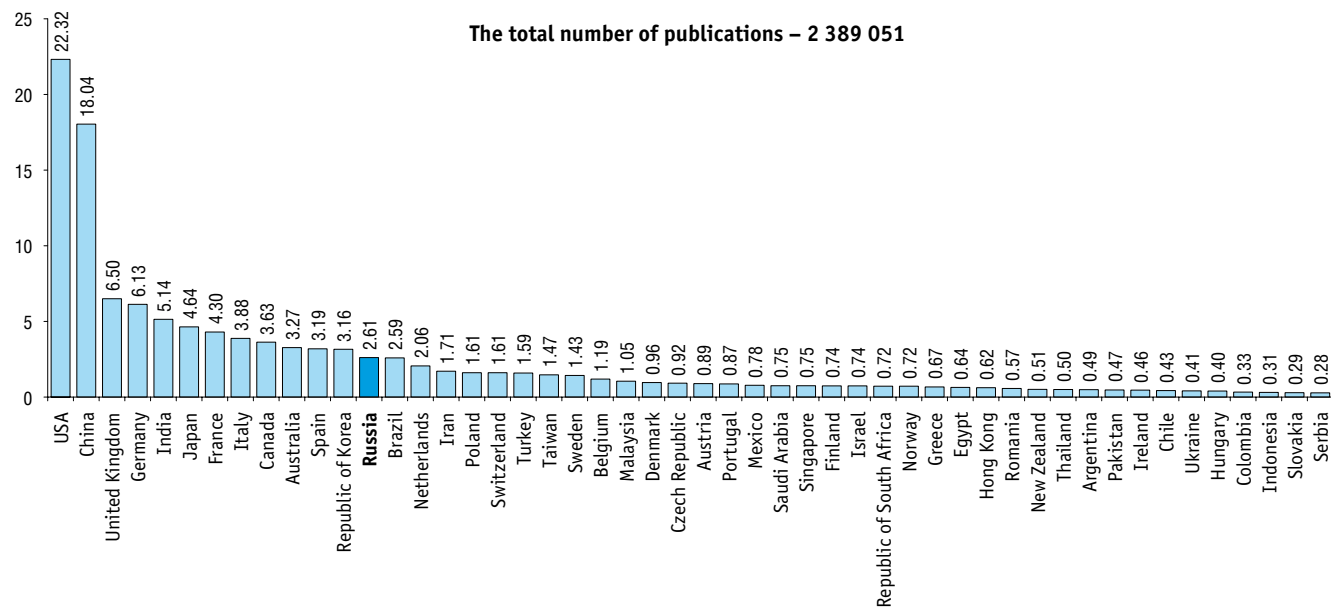
*** Average citation is normalized by field and in relation to worldwide average level.

8.14. COUNTRY SHARE IN THE WORLD TOTAL NUMBER OF PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE: 2015*

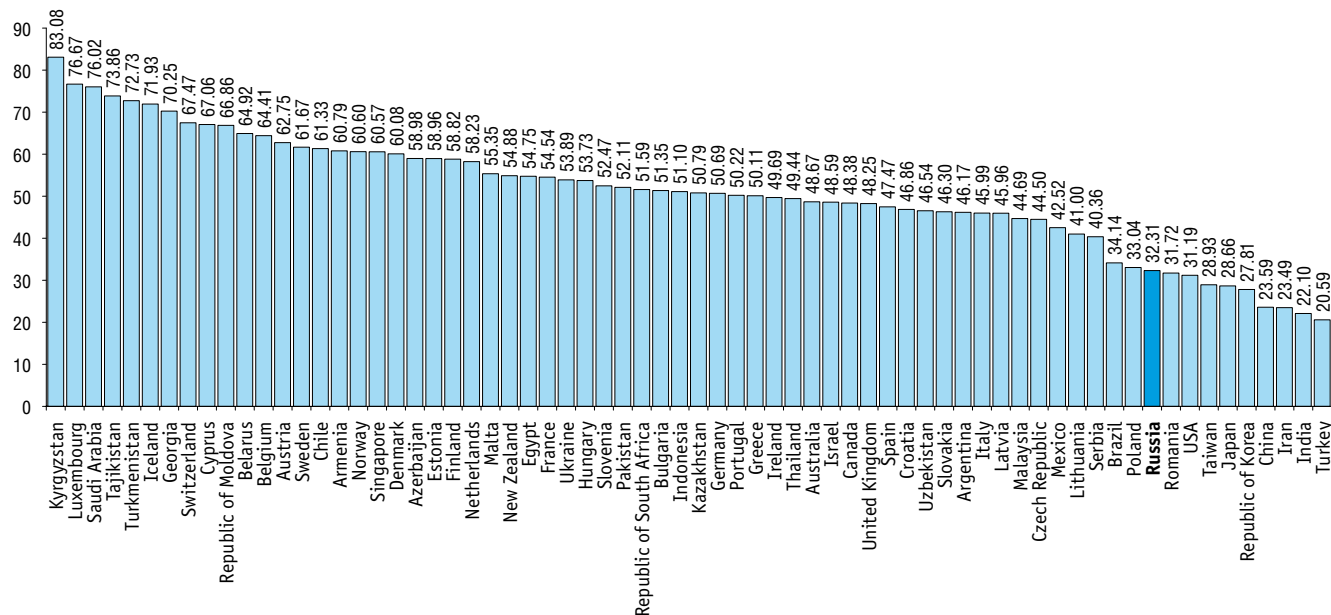


* Here and in section 8.15 the term 'publication' means three types of documents: articles, reviews and conference papers.

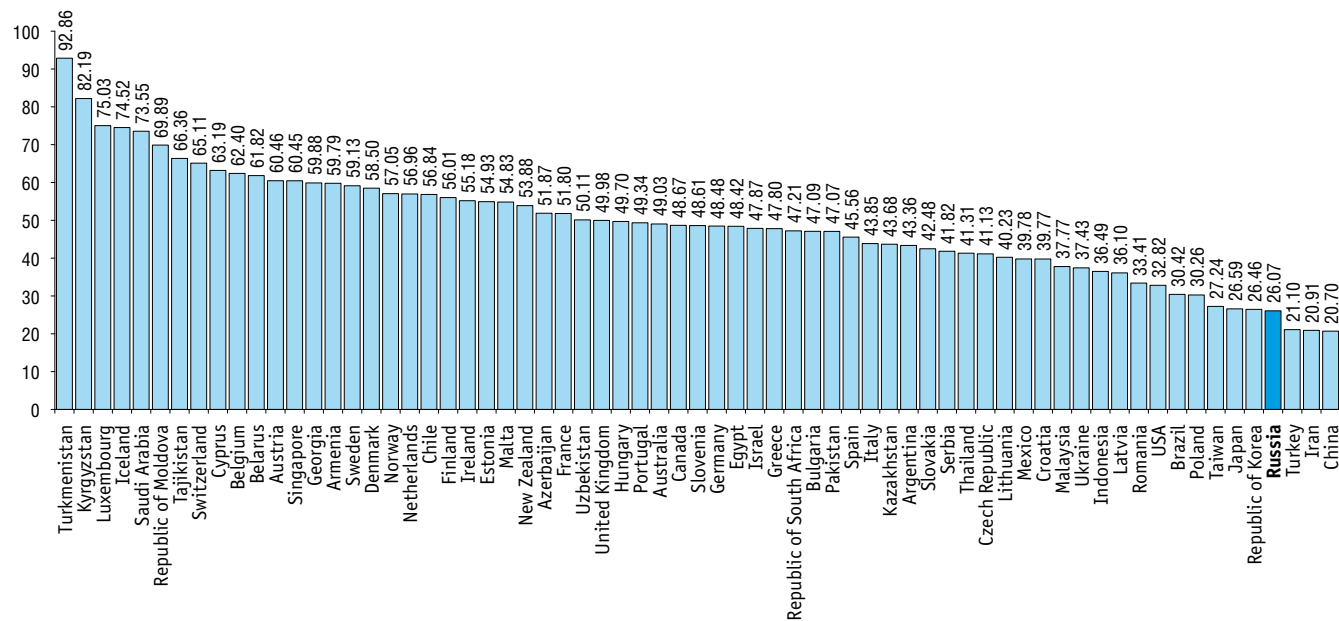
8.15. COUNTRY SHARE IN THE WORLD TOTAL NUMBER OF PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2015



8.16. PUBLICATIONS CO-AUTHORED WITH FOREIGN SCIENTISTS AS A PERCENTAGE OF THE TOTAL NUMBER OF COUNTRY'S PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE: 2015



8.17. PUBLICATIONS CO-AUTHORED WITH FOREIGN SCIENTISTS AS A PERCENTAGE OF THE TOTAL NUMBER OF COUNTRY'S PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2015*



* According to SCImago Journal & Country Rank.

8.18. PATENT APPLICATIONS FOR AN INVENTION FILED WITH THE PATENT OFFICE OF THE RUSSIAN FEDERATION BY RUSSIAN RESIDENTS AND NON-RESIDENTS

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Russia	22202	28688	32254	37691	39439	41849	38564	42500	41414	44211	44914	40308	45517
CIS countries													
Azerbaijan	251	...	287	259	295	233	281	271	205	144	156	168	184
Armenia	285	127	208	193	140	230	127	142	140	141	131	123	115
Belarus	1039	1198	1462	1525	1662	1730	1926	1933	1871	1871	1634	757	691
Kazakhstan	1373	1515	1626	1557	1827	1672	1827	1964	1732	...	2202	2013	1503
Kyrgyzstan	148	84	131	127	158	138	149	140	129	111	114	139	126
Republic of Moldova	309	250	388	312	347	295	139	150	108	115	96	139	124
Tajikistan	65	52	36	26	...	...	12	10	5	6	4	...	1
Turkmenistan	...	...	...	...	1	...	1	...	...	...	...	...	...
Ukraine	5960	7224	5592	5890	6163	5697	4814	5312	5253	4955	5412	4813	4497
Uzbekistan	1058	968	444	509	522	448	412	632	556	510	557	568	507
OECD countries													
Australia	14061	22001	23857	26003	26840	26346	23681	24887	25526	26358	29717	25956	28605
Austria	2186	2301	2505	2649	2672	2627	2555	2673	2430	2552	2406	2363	2441
Belgium	1087	820	622	651	617	708	817	760	763	882	876	1026	1097
Canada	26592	39622	39888	42038	40131	42089	37477	35449	35111	35242	34741	35481	36964
Chile	1706	3120	3007	3215	3806	3952	1717	1076	2792	3019	3072	3105	3274
Czech Republic	3519	4939	830	836	908	854	881	982	880	1071	1081	972	952
Denmark	1484	1870	1823	1691	1857	1829	1649	1768	1771	1635	1534	1583	1732
Estonia	79	804	38	45	63	72	96	97	77	25	42	50	36
Finland	3791	2903	2059	2018	2015	1946	1933	1833	1774	1827	1737	1545	1416

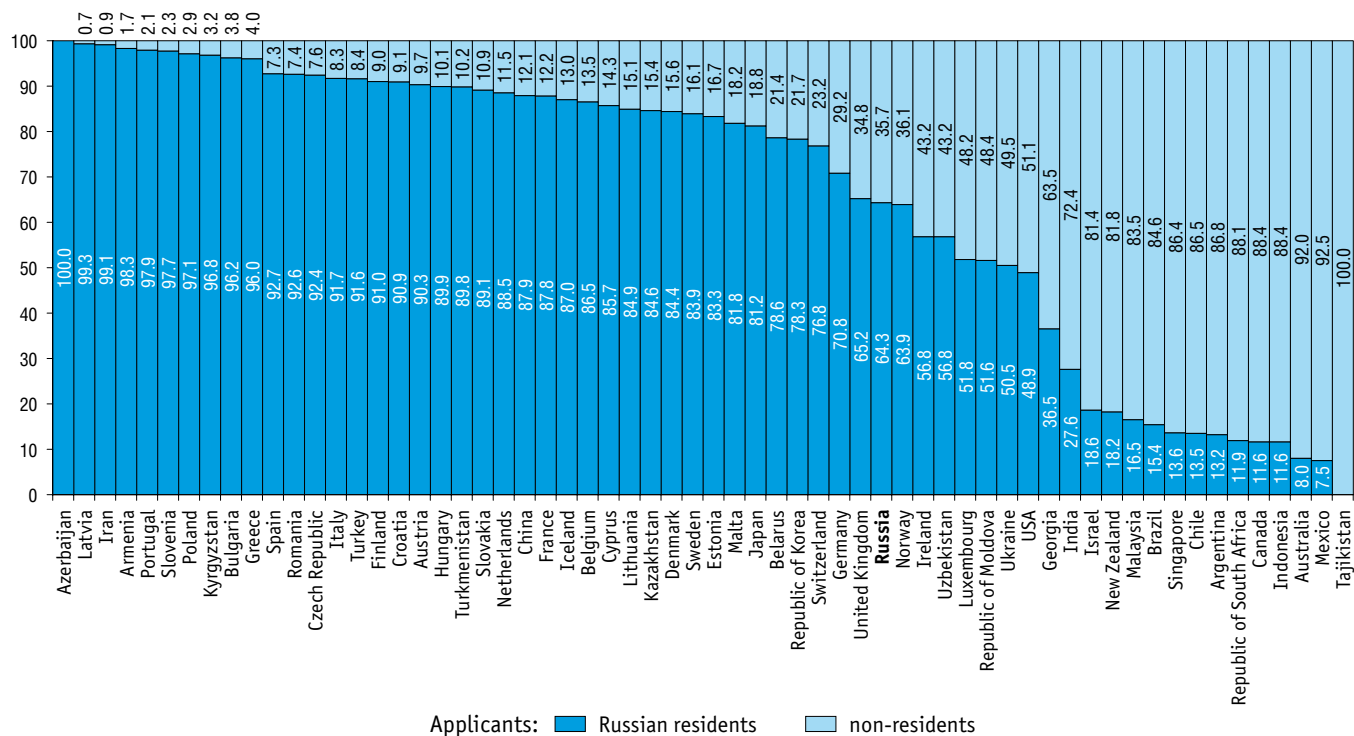
(continued)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	15896	17353	17275	17249	17109	16419	15693	16580	16754	16632	16886	16533	16300
Germany	46158	62142	60222	60585	60992	62417	59583	59245	59444	61340	63167	65965	66893
Greece	312	340	482	562	595	658	720	744	...	656	717	670	573
Hungary	2889	4937	1202	924	791	772	787	696	698	758	708	619	633
Iceland	68	876	592	371	114	81	86	76	71	44	46	64	46
Ireland	990	1080	864	935	925	1007	961	792	561	555	390	321	440
Israel	4425	6802	6826	7496	8009	7742	6774	7306	6886	6792	6185	6273	6908
Italy	8574	9273	9331	10903	10125	9449	9717	9723	9721	9310	9212	9382	9687
Japan	368831	419543	427078	408674	396291	391002	348596	344598	342610	342796	328436	325989	318721
Luxembourg	104	176	88	52	40	71	84	100	128	161	169	218	247
Mexico	5234	13061	14435	15505	16599	16581	14281	14576	14055	15314	15444	16135	18071
Netherlands	2692	2994	2850	2716	2446	2732	2854	2767	2895	2713	2764	2582	2494
New Zealand	4719	7048	7005	7365	7844	5724	6358	6636	6209	7099	6781	7728	6501
Norway	5408	6700	5986	6076	6656	5430	3604	1813	1776	1564	1749	1563	1805
Poland	3860	7303	6583	2812	2753	2778	3140	3430	4123	4657	4411	4096	4815
Portugal	201	146	205	220	281	405	617	545	646	647	669	740	945
Republic of Korea	78499	102010	160921	166189	172469	170632	163523	170101	178924	188915	204589	210292	213694
Slovakia	1669	2040	250	283	345	242	239	282	257	203	210	234	256
Slovenia	430	431	373	299	346	307	385	453	481	...	...	...	...
Spain	2600	3194	3353	3427	3532	3884	3803	3779	3626	3475	3244	3178	3020
Sweden	4865	5068	2960	2859	2925	2855	2649	2549	2341	2436	2495	2425	2428
Switzerland	3720	2551	2098	2102	2034	2033	2078	2155	2043	2988	2156	2048	1923
Turkey	1690	3433	1146	1232	2021	2397	2732	3357	4113	4666	4661	5097	5841
United Kingdom	27521	32747	27988	25745	24999	23379	22465	21929	22259	23235	22938	23040	22801
USA	228142	295895	390733	425966	456154	456321	456106	490226	503582	542815	571612	578802	589410

(continued)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU countries which are not OECD members													
Bulgaria	731	940	313	291	239	271	266	260	283	259	297	234	291
Croatia	600	875	1012	436	437	401	318	278	251	249	253	200	186
Cyprus	...	70	64	34	19	21	12	8	8	12	3	4	7
Latvia	300	179	169	151	147	215	243	185	183	205	233	107	137
Lithuania	133	127	115	99	82	105	107	114	108	124	137	165	119
Malta	24	116	...	805	39	48	29	19	15	17	17	13	11
Romania	2232	1290	984	876	886	1031	1091	1418	1463	1077	1046	1036	1053
Other countries													
Argentina	4264	6636	5269	5617	5743	5582	4916	4717	4821	4813	4772	4682	4125
Brazil	7448	17376	20005	24074	21825	22917	21944	22686	28306	30116	30884	30342	30219
China	18699	51906	173327	210501	245161	289838	314604	391177	526412	652777	825136	928177	1101864
Georgia	707	456	461	535	162	247	468	359	398	372	333	297	271
India	6566	8538	24382	28928	35218	36812	34287	39762	42291	43955	43031	42854	45658
Indonesia	2874	3890	4304	4612	5134	5133	4518	5630	5830	...	7450	8023	9153
Iran	407	616	4494	6527	11150	15955	12700	11636	12018	11054	11643	13802	14279
Malaysia	4052	6227	6286	4800	2372	5303	5737	6383	6452	6940	7205	7620	7727
Republic of South Africa	6365	3295	7004	7605	8317	7941	6735	6383	7245	7444	7295	7552	7497
Singapore	2557	8236	8605	9163	9951	9692	8736	9773	9794	9685	9722	10312	10814

8.19. PERCENTAGE DISTRIBUTION OF PATENT APPLICATIONS FOR AN INVENTION BY APPLICANT AND COUNTRY: 2015*



* Or the previous or following years for which the data are available.

8.20. RESIDENT AND ABROAD PATENT APPLICATIONS BY COUNTRY OF ORIGIN

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 employment*		
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014
Russia	34379	34067	28512	33786	240.1	237.4	198.2	230.9	447.1	443.1	371.5
CIS countries											
Armenia	184	175	156	160	61.3	58.8	52.0	53.3	122.7	116.7	97.5
Azerbaijan	331	448	542	493	35.6	47.6	56.8	50.8	69.7	92.4	109.5
Belarus	2701	2323	1781	1967	284.3	245.3	187.5	207.1	600.2	516.2	395.8
Kazakhstan	504	2386	2453	1797	30.0	140.0	141.8	102.7	55.4	259.3	263.8
Kyrgyzstan	130	130	173	180	23.2	22.8	29.8	20.0	50.0	48.1	64.1
Republic of Moldova	144	144	79	98	40.0	40.0	21.9	27.2	120.0	120.0	65.8
Tajikistan	19	11	8	16	2.4	1.4	1.0	1.9	5.4	3.1	2.2
Turkmenistan	2	1	1	...	0.4	0.2	0.2	...	0.9	0.4	0.4
Ukraine	3069	3499	2990	2878	67.3	76.9	65.9	63.7	132.8	151.2	129.5
Uzbekistan	270	308	374	305	9.1	10.2	12.1	9.7	20.8	23.2	27.5
OECD countries											
Australia	11719	12515	11743	11175	515.6	541.4	500.5	469.5	973.5	1022.4	945.7
Austria	12398	13352	13786	13925	1476.0	1570.8	1621.9	1619.2	2817.7	3034.5	3063.6
Belgium	12136	117260	12184	12090	1093.3	10469.6	1087.9	1069.9	2476.7	23452.0	2436.8
Canada	26828	26304	24705	24497	772.0	748.2	695.1	684.3	1390.7	1347.8	1252.4
Chile	784	805	998	850	45.1	45.7	56.2	47.2	92.2	93.6	113.4
Czech Republic	1886	2140	2180	2359	179.6	203.8	207.6	222.5	355.8	403.8	411.3
Denmark	10950	12207	12538	12123	1955.4	2179.8	2221.7	2126.8	3775.9	4209.3	4323.4
Estonia	291	273	278	236	223.8	210.0	213.8	181.5	415.7	390.0	397.1

(continued)

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 employment*		
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014
Finland	12940	12710	14070	13076	2396.3	2336.4	2558.2	2377.5	4792.6	4707.4	5211.1
France	69985	71083	72310	71666	1065.9	1077.5	1087.4	1072.8	2332.8	2361.6	2394.4
Germany	183048	184493	179506	174109	2276.0	2246.3	2216.6	2138.9	4386.3	4315.1	4252.3
Greece	1107	1083	1251	1151	100.2	98.8	114.9	106.6	220.6	217.5	253.4
Hungary	1655	1560	1434	1487	167.2	157.6	144.8	151.7	376.1	354.5	325.9
Iceland	320	233	302	263	1066.7	776.7	1006.7	876.7	1600.0	1226.3	1510.0
Ireland	4278	4389	4779	5310	930.0	954.1	1035.0	1154.3	1944.5	1995.0	2172.3
Israel	12384	12767	13437	14470	1567.6	1576.2	1638.7	1722.6	3347.0	3450.5	3631.6
Italy	28523	28896	29288	21320	479.1	479.7	481.8	350.7	1136.0	1134.3	1135.8
Japan	490271	473141	465971	454285	3843.4	3715.6	3665.3	3577.0	7508.0	7212.5	7135.8
Luxembourg	2449	2650	3137	2734	4898.0	5300.0	5228.3	4556.7	8163.3	10192.3	10456.7
Mexico	2219	2139	2187	2508	18.2	17.3	17.4	19.7	41.6	39.3	39.4
Netherlands	31305	33589	37729	37017	1863.4	1999.3	2232.5	2190.4	3479.1	3732.8	4183.1
New Zealand	2894	3450	3429	3264	657.7	784.1	760.4	709.6	1205.8	1437.5	1428.8
Norway	5970	5765	5872	5601	1194.0	1130.4	1151.4	1077.1	2211.1	2135.2	2174.8
Poland	6043	6031	6171	7009	158.6	158.7	162.3	184.4	330.3	329.7	337.6
Portugal	1128	1318	1332	1624	107.4	125.5	128.1	157.7	205.1	244.1	246.7
Republic of Korea	203836	223527	230553	238015	4076.7	4452.7	4572.3	4703.9	7910.7	8557.8	8747.6
Slovakia	368	401	454	495	68.1	74.3	84.1	91.7	136.3	148.5	168.1
Slovenia	496	536	509	462	236.2	255.2	242.4	220.0	496.0	536.0	509.0
Spain	11844	11012	10924	10777	253.2	236.2	235.0	232.3	500.4	470.2	467.9
Sweden	21725	22647	23854	24267	2286.8	2359.1	2460.2	2476.2	4259.8	4440.6	4587.3

(continued)

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 employment*		
	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014
Switzerland	42015	44997	44406	44458	5251.9	5555.2	5415.4	5356.4	9133.7	9573.8	9251.3
Turkey	5983	5793	6495	7269	79.9	76.0	83.8	92.4	220.0	208.4	228.7
United Kingdom	51562	51300	52605	52648	809.4	800.0	814.2	808.7	1584.9	1565.4	1593.0
USA	473489	501162	509521	526296	1507.4	1583.8	1597.7	1637.5	3027.4	3136.2	3162.8
EU countries which are not OECD members											
Bulgaria	371	500	467	512	50.8	68.5	64.9	71.1	112.4	151.5	141.5
Croatia	345	411	259	250	80.2	95.6	61.7	59.5	181.6	216.3	143.9
Cyprus	439	353	492	350	399.1	320.9	410.0	291.7	731.7	588.3	820.0
Latvia	359	480	193	287	179.5	240.0	96.8	143.5	326.4	480.0	193.0
Lithuania	196	220	254	275	65.3	73.3	87.6	94.8	122.5	146.7	169.3
Malta	265	273	475	459	631.8	644.8	1111.5	1065.0	1325.0	1365.0	2375.0
Romania	1244	1241	1252	1229	61.9	62.1	62.9	62.1	130.9	130.6	130.4
Other countries											
Argentina	1079	922	791	889	25.6	21.7	18.4	20.5	56.7	47.8	40.5
Brazil	6603	6848	6717	6554	32.6	33.5	32.6	31.5	61.7	63.2	61.2
China	561408	734096	837817	1010406	415.6	540.8	614.1	736.9	705.4	915.6	1038.8
Georgia	153	119	131	124	40.3	31.3	35.4	33.5	74.6	58.5	64.9
India	18202	20908	22445	23844	14.4	16.3	17.3	18.2	38.1	42.9	45.2
Indonesia	...	755	771	1174	...	3.0	3.0	4.6	...	6.2	6.2
Iran	10700	11343	13768	...	140.5	147.0	176.2	...	409.3	425.7	507.4
Malaysia	1975	2299	2661	2293	68.1	78.0	89.0	75.7	155.8	176.9	200.1
Republic of South Africa	1688	2211	2317	2064	32.2	41.6	42.9	37.5	89.4	113.8	115.8
Singapore	4884	5471	5927	6137	921.5	1013.1	1077.6	1115.8	1618.4	1784.1	1905.6

* The data regarding the number of economically active population for 2015 are absent.

8.21. THE NUMBER OF TRIADIC PATENT FAMILIES*

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013
Russia	63	85	91	74	78	57	88	88	100	109	111
OECD countries											
Australia	236	516	480	364	345	315	350	307	314	314	316
Austria	223	346	409	354	377	343	368	388	419	456	498
Belgium	375	455	541	477	430	458	478	460	477	472	467
Canada	390	612	714	667	681	686	677	553	576	583	593
Chile	2	2	6	9	7	9	11	15	15	13	12
Czech Republic	3	10	25	27	23	28	17	14	34	39	45
Denmark	189	290	389	317	315	344	258	301	308	322	331
Estonia	0	1	3	7	4	3	3	3	7	7	6
Finland	319	433	390	295	258	253	224	226	238	248	258
France	1976	2925	3048	2884	2783	2883	2721	2453	2555	2521	2466
Germany	4914	7637	7139	6529	5807	5471	5562	5474	5537	5561	5525
Greece	2	11	24	22	14	16	15	5	11	10	10
Hungary	25	42	58	47	59	31	51	37	43	44	43
Iceland	6	13	7	8	10	5	2	3	3	3	3
Ireland	31	51	97	76	91	84	86	64	70	72	73
Israel	161	385	501	419	350	369	376	351	369	396	412
Italy	621	832	965	821	729	760	736	682	672	679	685
Japan	9592	17915	17721	17998	17757	15940	16112	16740	17140	16722	16197
Luxembourg	14	22	21	24	15	20	20	19	23	21	20
Mexico	12	9	19	27	19	17	15	16	17	18	20
Netherlands	769	1264	1759	1477	1065	1128	1047	823	958	955	947
New Zealand	21	72	73	71	57	72	55	44	51	56	61
Norway	87	137	142	123	105	88	129	116	116	118	119

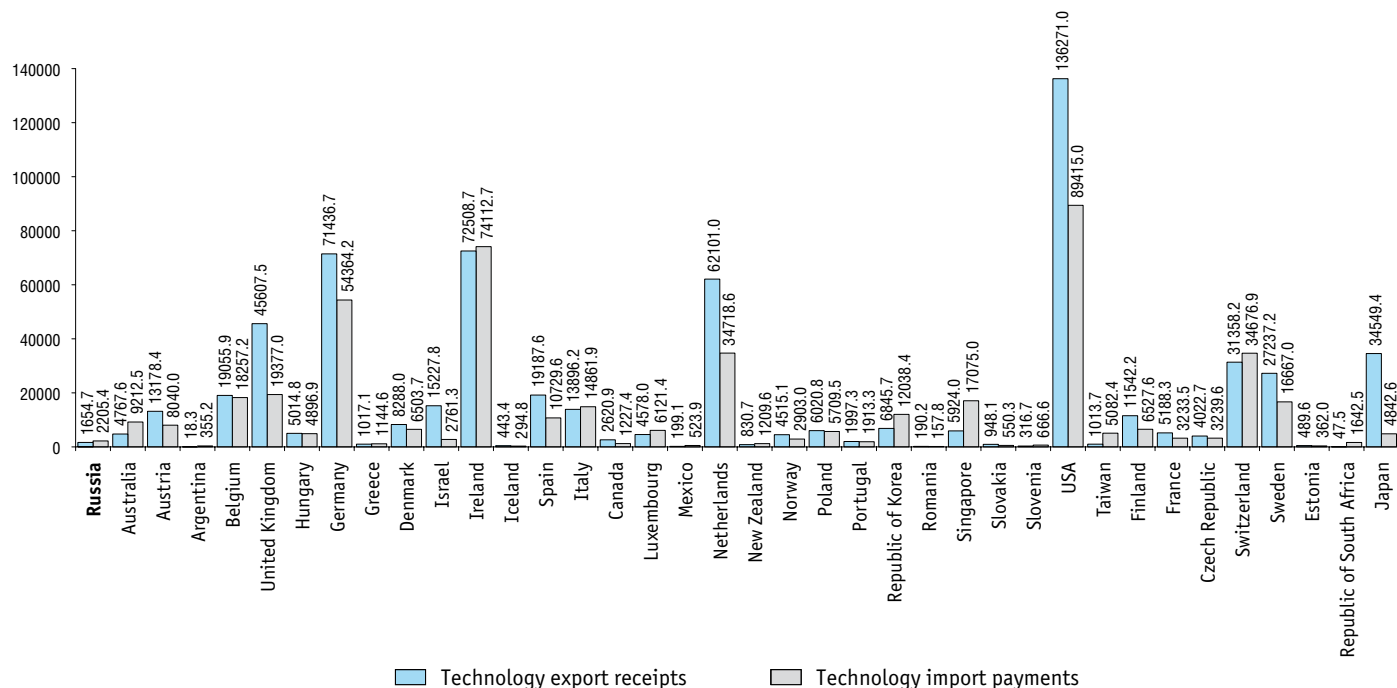
* Patent applications filed simultaneously with the European Patent Office (EPO), the United States Patent and Trademark Office (USPTO) and the Japan Patent Office (JPO).

(continued)

	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013
Poland	5	9	18	18	25	37	32	61	62	71	78
Portugal	3	5	16	21	42	30	17	16	25	27	28
Republic of Korea	331	908	2746	2348	1977	1826	2109	2459	2665	2866	3107
Slovakia	2	2	2	3	4	4	2	8	13	14	15
Slovenia	7	9	22	8	12	16	17	16	15	15	17
Spain	83	194	292	267	258	268	254	237	246	243	240
Sweden	760	793	970	884	962	835	794	645	640	633	621
Switzerland	771	1004	1084	1148	1008	997	970	1062	1108	1154	1195
Turkey	2	5	15	17	9	27	28	34	41	41	45
United Kingdom	1586	2362	2163	2088	1798	1695	1722	1649	1654	1693	1726
USA	12365	15625	17377	15490	13904	13828	13514	12725	13012	13709	14211
EU countries which are not OECD members											
Bulgaria	3	1	3	2	1	...	...	...	...	...	...
Croatia	6	6	4	6	1	0	2	...	...	...	...
Cyprus	...	0	2	1	2	1	...	...	...	...	...
Latvia	2	3	5	3	1	1	...	...	...	...	...
Lithuania	...	1	1	...	...	...	...	...	...	...	...
Malta	...	3	2	...	...	...	...	...	...	...	...
Romania	2	0	7	2	4	6	7	6	8	11	12
Other countries											
Argentina	6	8	16	11	15	12	17	8	9	9	9
Brazil	20	29	24	28	11	9	0	0	...	...	...
China	21	87	519	561	690	827	1296	1420	1545	1715	1897
India	8	48	91	89	57	60	29	12	...	...	...
Republic of South Africa	25	51	49	39	38	52	35	31	44	44	44
Singapore	21	84	168	145	109	110	101	95	113	121	137

8.22. TECHNOLOGY BALANCE OF PAYMENTS: 2015*

(million US dollars)



* Or the previous or following years for which the data are available.

TECHNICAL NOTES

Advanced manufacturing technology includes production processes, involving machinery, devices, equipment and apparatus based on microelectronics or computer-operated and used in designing, manufacturing or processing of manufactured goods and products.

Applied research encompasses original activities aimed at new knowledge acquisition with the purpose of specific practical problems solving. Applied research determines possible ways of using the results of basic research and new methods of solving previously defined problems.

Basic research includes experimental or theoretical research aimed at acquiring new knowledge without any particular practical application purpose of this knowledge. The result of the research comprises hypotheses, theories, methods, etc. Basic research may conclude by giving recommendations concerning applied research conducting in order to identify the opportunities of practical usage of the obtained scientific results, or by scientific publications, etc.

Bibliometric indicators regarding the publications are calculated on the basis of Web of Science and Scopus databases, and regarding citation they are calculated on the basis of the data from InCites of the Thomson Reuters Company and from SciVal of the Elsevier Company (based on data from Scopus). The term 'publication', unless indicated otherwise, means three types of documents, namely 'articles', 'reviews' and 'conference papers' ('proceedings'). The publication is considered to originate from a country, which is stated in the dateline as the country of work of the author or one of the co-authors and which was recognised

by Web of Science and Scopus. If the sole author gives several addresses in more than one country such publication is said to be written by international co-authors. Likewise, if one or more co-authors give additional affiliation in a different country, such publication is also said to be written by international co-authors. All the data given in the present book reflect the databases situation as of November 1, 2016.

Competitive (project) R&D financing includes the funds received on the account of the organisation that is put at the top of the list by the contest committee following the results of the competition between scientific and S&T programmes, innovative and other projects, based on better competitive project realisation solutions presented by this organisation in comparison with those offered by other participants.

Doctoral studies represent a form of training programme for scientific and academic personnel of the top-qualification. The preparation of the doctoral thesis is performed by doctoral students in higher education institutions, further vocational education institutions and in scientific organisations. Doctoral students prepare their doctoral thesis for a doctor's degree in the chosen scientific branch of study in accordance with the nomenclature of academic and scientific professional degrees, approved by the order of the Ministry of Education and Science of the Russian Federation.

Enterprises (organisations, institutions) engaged in innovative technological activity are enterprises (organisations, institutions) that develop and implement new or significantly improved goods, works

and services, production processes or services delivery (provision) methods, as well as those that perform other types of innovative activities.

Expenditure on innovation is the actual expenditure in monetary form, connected with the implementation of different types of innovative activity performed on the scale of an organisation (industry, region, country). Expenditure on innovation includes current expenditure and capital expenditure. The statistics studies expenditure on technological, marketing and organisational innovation.

Experimental development includes regular activities, based on existing knowledge, received from research and/or practical experience, and aimed at the creation of new materials, products, processes, devices, services, systems and methods. These activities may also involve significant improvement of already existing objects.

Government budget appropriations on civil S&T are the federal budget funds, allocated for basic and applied research of civil character. In accordance with the introduction as of January 1st, 2005, of a new budget appropriations classification, 'Basic Research' listed in subsection 0601 and 'Advanced technology and S&T advances priority areas development' listed in subsection 0602 of Section 06 'Basic Research and Scientific and Technological Progress Promotion' of the Federal Budget are listed as basic and applied research correspondingly.

Grants are monetary and other funds given gratuitously and on a non-repayable basis by individuals and legal entities, including foreign individuals and legal entities, as well as by international organisations having the right to offer grants in the Russian Federation in accordance with the procedures established by the Government of the Russian Federation, in order to realise specific scientific and S&T

programmes and projects, to conduct specific scientific research following the conditions laid down by the grantmakers (Federal Law of August 26, 1996 № 127-FZ 'On science and state scientific and technical policy' (as amended)).

Gross domestic expenditure on R&D is the actual expenditure in monetary form on research and development inside the country (including R&D funded from abroad but excluding payments made abroad). The estimation is based on the statistical accounting regarding research and development performed by organisations using their own intramural resources during the year under report regardless of the source of funds. Gross domestic expenditure on R&D includes:

- current expenditure – expenditure on salaries, consolidated social tax contributions, special-purpose equipment acquisition and manufacture (including at the expense of the production cost of the tasks performed), other material expenditures (the cost of acquisition from third parties of raw materials, material supplies, components, semi-finished products, fuel, energy, works and services of industrial character, etc.) and other current expenditure;
- capital expenditure – expenditure on land acquisition, buildings acquisition and construction, machinery and tools acquisition, included into fixed assets, etc.

Gross domestic expenditure on R&D is expressed both at current prices and at constant prices in accordance with the gross domestic product deflator.

Industrial design is a design and engineering solution for a manufactured product or for an artisan industry product that determines its external appearance.

Innovative activity is an activity connected with the transformation of ideas (which is usually the result of scientific research and development or of another type of S&T advances) into technologically new or significantly improved goods and services, introduced into the market, into technology new or significantly improved production processes or services delivery (provision) methods, used in practice. Innovative activity includes a broad range of scientific, technological, organisational, financial and commercial activities which collectively lead to innovation.

Innovative activity of enterprises describes the involvement degree of enterprises (organisations) in general or specific innovative activity during a given period of time. The involvement degree of an enterprise is usually evaluated as a ratio of the number of enterprises (organisations) engaged in innovative technological, marketing and organisational innovative activities to the total number of enterprises (organisations) under review in a country, industry, sector, region, etc. during a given period of time.

Innovative goods, works and services are goods, works and services, either new or those that underwent different technological changes within the last three years. Following the degree of novelty there can be distinguished two types of innovative goods, works and services – those newly introduced and hence new (or those that have undergone substantial technological changes and hence are technologically new) and those significantly improved.

Invention is a technical and/or engineering solution in any sphere pertaining to a product (namely, a device, material (substance), strain of organism, human and animal cell culture) or to a method (process of manipulating material objects with the help of material means).

An invention should be characterised by novelty, a level of invention and it should be industrially applicable.

Licence is a permit in accordance to which the owner (licensor) gives, subject to certain conditions and for a preconditioned remuneration, to an interested party (licensee) the exclusive right for industrial property item or for a know-how or the rights to use object of the contract, such a permit is formalised in the form of a special contract (agreement). Patent licence grants the right to use the patent, determines the scope of assigned rights, the territory and the usage period, as well as the payment form.

Marketing innovation includes implemented marketing methods, either new or significantly improved, that cover substantial changes in the design and packaging of goods, works and services; also, usage of new goods, works and services sales strategies and new goods, works and services presentation methods, goods, works and services launch and promotion in the target market; new price strategies developing. Marketing innovations are aimed at completely satisfying the needs of the target customers and at the target audience expansion, as well as at the new markets development in order to increase sales.

Organisational innovation includes the implementation of new business practices, new workplace organisation and external relations management methods. Organisational innovations are aimed at enterprises' (organisations') efficiency increase in performance as a result of cutting administrative costs and transaction costs, workplace engineering optimisation (working hours rationalisation) and, hence, a better performance and a rise in labour productivity, access to the assets that are not on the market, cost saving regarding delivery and supply.

Patent for an invention is a title of protection, granted to an invention and establishing priority, authorship and exclusive usage right during the duration of the patent.

Postgraduate studies is the main form of academic and scientific personnel training and education in scientific research institutions, educational institutions, higher education institutions and further vocational education institutions. Only people having the higher and up level of education (specialist's degree or master's degree) are eligible for postgraduate programmes of academic and scientific personnel training and education. In accordance with the Federal Law of December 29, 2012 № 273-FZ 'On the Education in the Russian Federation' since January 1, 2014 the fields of studies (majors, fields of science) that postgraduates can enroll on are enumerated in the order of the Ministry of Education and Science of the Russian Federation of September 12, 2013 № 1061 'On the Approval of the Lists of Major Courses and Fields of Studies in the Sphere of Higher Education'. The data concerning the people, enrolled on postgraduate programmes before January 1, 2014, are given in accordance with the nomenclature of academic and scientific professional degrees, approved by the order of the Ministry of Education and Science of the Russian Federation of February 25, 2009 № 59 (as worded by the orders of the Ministry of Education and Science of the Russian Federation of August 11, 2009 № 294, of November 16, 2009 № 603, of January 10, 2012 № 5, of February 20, 2015 № 114).

Research and development (R&D) cover creative activity, performed on a regular basis in order to increase the total amount of scientific knowledge, including the knowledge concerning humanity, nature and society, as well as in order to find new practical application areas for this knowledge.

R&D fixed assets (capital) include:

- buildings and structures;
- machinery and equipment, including pilot and experimental devices, scientific instruments, automation equipment and computer tools, etc.;
- transport vehicles;
- tools, furniture and other fixed assets on the balance sheet of scientific organisations and their pilot and experimental facilities, used in the course of their main activity.

R&D personnel are all the people whose creative activity performed on a regular basis is aimed at increasing the total amount of scientific knowledge and at finding new practical application areas for this knowledge, as well as involved in the provision of direct services, connected with research and development.

R&D personnel can be divided into the following categories:

- researchers – employees, professionally involved in research and development and directly engaged in the creation of new knowledge, products, processes, methods and systems, as well as in the management of the said activities. Usually researchers have diplomas of higher education;
- technicians – employees, taking part in research and development and performing technical operating functions (operation, exploitation and maintenance of scientific instruments, lab equipment, computers, as well as preparation of materials, designs and blueprints, conduction of experiments, tests and assays, etc.), as a rule, under the supervision of researchers. Usually into this category fall people who have secondary vocational education and/or the necessary professional knowledge and experience;

- supporting staff – employees performing supporting work, connected with research and development: employees of economic planning department, financial subdivisions, patent services, S&T information subdivisions, S&T libraries; workers who assemble, debug, tune, maintain and repair scientific instruments and devices; workers on pilot and experimental facilities; lab assistants without higher education or secondary vocational education;
- other personnel includes staff engaged in upkeep as well as those performing functions of general character, connected with the overall activity of the organisation (accountants, HP personnel, clerical workers, logistic support staff, typists, etc.).

Scientific specialisation index of a country (in a specific field of science) is calculated as a proportion of a corresponding share of publications in a specific field of science in the total number of publications of the authors from the same country in scientific journals indexed in Web of Science or Scopus to its share in the worldwide number of indexed publications. If the index value of a country is above 1.0, the field of science is considered to be the country's specialisation.

Sectors of R&D performance:

- government sector involves organisations (institutions) of departments and agencies, involved in the government of state and in general public needs satisfaction; non-profit organisations, fully or partially financed and controlled by the government;
- business enterprise sector involves organisations and enterprises, the main activity of which is concerned with commercial production of goods and services, including organisations of public

ownership; here also belong private non-profit organisations providing services to the said organisations;

- higher education sector involves higher education institutions, regardless of their source of funds and legal status, as well as scientific research institutes, experimental facilities, teaching hospitals under their control or affiliated with them;
- private non-profit sector involves private non-commercial organisations that do not seek profit (professional communities, voluntary associations, etc.), and private organisations.

Sources of funds for R&D are the primary sources of funds for R&D that are determined following the direct money transfer from the client-organisation to the executing agency (organisation).

On the whole the R&D funds of the reporting organisation are subdivided into own intramural funds of the organisations and the funds that it gets from other organisations and institutions regardless of their sectors.

The following sources are considered to be the sources of funds, namely:

- budget funds (including federal budget funds, regional budget funds and municipal budget funds of the Russian Federation);
- budget appropriations for higher education institutions;
- non-budgetary funds;
- funds from abroad;
- government sector funds;
- business enterprise sector funds;
- higher education sector funds;
- private non-profit sector funds;
- own intramural funds of organisations.

Technological innovation is the final result of innovative activity, presented in the form of new or significantly improved goods and services, introduced into the market, or of new or significantly improved production processes or services delivery (provision) methods, used in practice. Innovation is considered implemented if it is launched into the market or used in production process.

Technology balance of payments is the total sum of the money transfers following all the intangible transactions connected with technology imports and exports.

Trade in technology with foreign countries encompasses all commercial transactions regarding import and export of technology and services of technological character, including deals between joint-venture and foreign organisations, registered in Russia, their branches (representative offices) and their foreign parent companies.

Utility models are business solutions pertaining to equipment. Utility models should be characterised by novelty and should be industrially applicable.

Science and Technology Indicators in the Russian Federation

Data Book

Edited by *T. Magala*

Design *P. Shelegeda*

Desk-top publishing *V. Parshina*

National Research University Higher School of Economics
Institute for Statistical Studies and Economics of Knowledge
20 Myasnitskaya st., Moscow, 101000, Russia

Tel.: +7 (495) 621-28-73

<http://issek.hse.ru>

E-mail: issek@hse.ru