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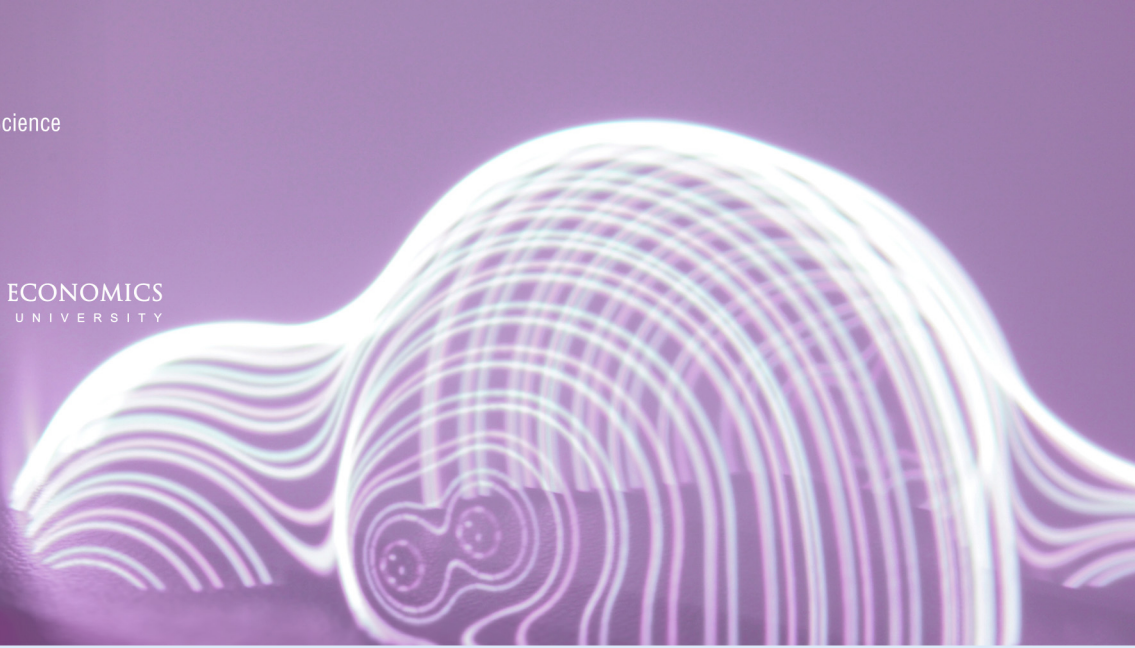

Science and Technology Indicators in the Russian Federation

Data Book

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 2013

УДК 001(035.5)
ББК 72я2
S40

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S40 **Science and Technology Indicators in the Russian Federation** : Data Book. – Moscow : National Research University – Higher School of Economics (HSE), 2013. – 400 p.

This data book continues the series of publications on various aspects of S&T and innovation development in the Russian Federation. It presents statistical data reflecting the current state and trends in R&D and innovation. A specific chapter is devoted to international comparisons.

The publication uses information provided by the Federal State Statistics Service, the Ministry of Education and Science of the Russian Federation, Federal Service for Intellectual Property, Patents and Trademarks, CIS Statcommittee, Organisation for Economic Co-operation and Development (OECD), European Commission, Eurostat, UNESCO, 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 several cases data on certain indicators improves on previous data.

УДК 001(035.5)
ББК 72я2

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... 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	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D, *million roubles, 1995 – billion roubles*:													
at current prices	12149.5	76697.1	105260.7	135004.5	169862.4	196039.9	230785.2	288805.2	371080.3	431073.2	485834.3	523377.2	610426.7
at constant 1989 prices	2.49	3.32	3.91	4.34	4.80	4.61	4.55	4.94	5.58	5.49	6.07	5.86	5.90
Gross domestic expenditure on R&D:													
as a percentage of GDP	0.85	1.05	1.18	1.25	1.29	1.15	1.07	1.07	1.12	1.04	1.25	1.16	1.12
as a percentage of the previous year at constant 1989 prices	84.9	116.0	117.8	111.0	110.6	95.9	98.7	108.6	112.9	98.4	110.6	96.5	100.7
Gross domestic expenditure on R&D per one R&D institution, *thousand roubles, 1995 – million roubles*:													
at current prices	2993.2	18711.2	26074.0	34563.4	44735.9	53621.4	64718.2	79736.4	93778.2	117586.8	137396.6	149878.9	165786.7

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D per one R&D employee, *thousand roubles, 1995 – million roubles*	11.5	86.4	118.9	155.0	197.9	233.6	283.8	357.8	463.2	566.3	654.4	710.6	830.2
Gross domestic expenditure on R&D per one researcher, *thousand roubles, 1995 – million roubles*	23.4	180.1	249.3	325.6	414.5	488.4	590.1	742.5	944.6	1147.1	1315.8	1418.7	1628.7
Federal budget appropriations on civil S&T, *million roubles, 1995 – billion roubles:*													
at current prices	4413.6	17091.7	23023.0	29962.5	41576.3	47478.1	76909.0	97363.2	132703.4	162115.9	219053.4	237644.0	313899.3
at constant 1991 prices	2.48	2.03	2.35	2.65	3.23	3.06	4.16	4.57	5.47	5.66	7.50	7.29	8.32
Federal budget appropriations on civil S&T as a percentage of GDP	0.31	0.23	0.26	0.28	0.31	0.28	0.36	0.36	0.40	0.39	0.56	0.53	0.58

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
R&D personnel, *thousands*	1061.0	887.7	885.6	870.9	858.5	839.3	813.2	807.1	801.1	761.3	742.4	736.5	735.3
As a percentage of the previous year	95.9	101.8	99.8	98.3	98.6	97.8	96.9	99.2	99.3	95.0	97.5	99.2	99.8
R&D personnel per one R&D institution, *head-count*	261	217	219	223	226	230	228	223	202	208	210	211	200
R&D personnel per 10 000 employment, *head-count*	160	138	136	133	130	126	122	120	118	111	110	109	109
Researchers, *thousands*	518.7	426.0	422.2	414.7	409.8	401.4	391.1	388.9	392.8	375.8	369.2	368.9	374.8
As a percentage of the previous year	98.7	101.4	99.1	98.2	98.8	98.0	97.4	99.4	101.0	95.7	98.3	99.9	101.6

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers per one R&D institution, *head-count*	128	104	105	106	108	110	110	107	99	103	104	106	102
Researchers per 10 000 employment, *head-count*	78	66	65	63	62	60	59	58	58	55	55	55	55
Patent applications filed in the Russian Federation	22202	28688	29989	29225	30651	30192	32254	37691	39439	41849	38564	42500	41414
Patent granted in the Russian Federation	31556*	17592	16292	18114	24726	23191	23390	23299	23028	28808	34824	30322	29999
Development of advanced manufacturing technologies	…	688	637	727	821	676	637	735	780	854	897	864	1138
Use of advanced manufacturing technologies	…	70069	80012	93412	107015	119639	140983	168311	180324	184568	201850	203330	191650
Total receipts from technology exports, *thousand US dollars*	…	203493.5	241541.7	211478.4	237403.9	383985.2	389396.4	533385.9	630391.6	833164.4	618184.5	627887.5	584656.9
Total payments for technology imports, *thousand US dollars*	…	182908.0	395350.0	572488.8	666114.1	823030.1	954199.2	1128425.8	1426387.6	2087067.4	1619031.6	1425983.3	1862566.6

* Taking into account patents granted in exchange for invention certificates.

MAIN INDICATORS OF INNOVATION

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Enterprises engaged in technological innovation as a percentage of all enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	5.0	10.6	9.6	9.8	10.3	10.5	9.3	9.4	9.4	9.6	9.4	9.3	9.6
Communications, computer and related activities*	8.3	12.1	12.2	13.5	14.3	14.7	15.3	12.5	11.2	10.9	10.1	10.8	9.9
Innovative goods and services as a percentage of total sales:													
Mining and quarrying, manufacturing, electricity, gas and water supply	3.8	4.4	4.2	4.3	4.7	5.4	5.0	5.5	5.5	5.1	4.6	4.9	6.1
Communications, computer and related activities	...	16.9	6.9	2.8	8.9	8.4	8.6	8.3	4.2	4.2	3.8	4.7	4.8
Expenditure on technological innovation, *million roubles*:													
Mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	13864.4	49428.0	61312.9	86394.6	105444.7	122850.5	125678.2	188492.2	207499.2	276262.3	358861.1	349763.3	469442.2
at constant 1995 prices	6966.0	10462.7	11140.3	13590.9	14576.3	14116.7	12105.3	15760.0	15245.3	17201.2	21906.1	19131.5	22174.1
Communications, computer and related activities:													
at current prices	4197.1	11794.1	6328.6	6049.3	14782.7	19495.3	17544.4	18892.4	25125.5	24148.0	32790.9	38684.0	137754.0
at constant 1995 prices	2108.8	2496.5	1149.9	951.6	2043.5	2240.2	1689.9	1579.6	1846.0	1503.6	2001.7	2115.9	6506.8

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Expenditure on technological innovation as a percentage of total sales:													
Mining and quarrying, manufacturing, electricity, gas and water supply	1.1	1.4	1.4	1.8	1.6	1.5	1.2	1.4	1.2	1.4	1.9	1.5	1.5
Communications, computer and related activities	…	11.1	4.8	3.9	6.5	5.9	3.5	2.7	2.7	2.1	2.7	2.9	8.8
Innovative activity level (enterprises engaged in technological, marketing and organisational innovation as a percentage of all enterprises):													
Mining and quarrying, manufacturing, electricity, gas and water supply	…	…	…	…	…	…	…	10.6	10.8	11.0	11.0	10.8	11.1
Communications, computer and related activities	…	…	…	…	…	…	…	15.6	13.5	13.4	13.2	13.6	12.1
Enterprises engaged in organisational innovation during the reference year 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
Communications, computer and related activities	…	…	…	…	…	…	…	5.4	4.8	4.5	4.7	5.1	3.9

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Enterprises engaged in marketing innovation during the reference year 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
Communications, computer and related activities	…	…	…	…	…	…	…	4.4	4.5	4.5	4.7	4.7	3.9
Expenditure on technological, organisational and marketing 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
at constant 1995 prices	…	…	…	…	…	…	…	15998.2	15650.9	17632.9	22328.7	19481.5	22417.2
Communications, computer and related activities:													
at current prices	…	…	…	…	…	…	…	20010.5	26405.2	27076.7	34821.89	40223.1	146419.4
at constant 1995 prices	…	…	…	…	…	…	…	1673.1	1940.0	1685.9	2125.6	2200.1	6916.1
Expenditure on technological, organisational and marketing 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
Communications, computer and related activities	…	…	…	…	…	…	…	2.7	2.8	2.3	2.8	3.0	9.4

(continued)

	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Small enterprises engaged in technological innovation as a percentage of all small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	…	1.3	1.5	…	1.6	…	1.6	…	4.3	…	4.1	…	5.1
Innovative goods and services as a percentage of total sales of small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	…	0.6	0.6	…	0.3	…	0.3	…	2.0	…	1.4	…	1.5
Expenditure on technological innovation of small enterprises, *million roubles*:													
Mining and quarrying, manufacturing, electricity, gas and water supply:													
at current prices	…	867.6	997.7	…	1296.5	…	1932.7	…	10608.2	…	6793.5	…	947.3
at constant 1995 prices	…	183.7	181.3	…	179.2	…	186.2	…	779.4	…	414.7	…	447.8
Expenditure on technological innovation as a percentage of total sales of small enterprises:													
Mining and quarrying, manufacturing, electricity, gas and water supply	…	0.6	0.5	…	0.4	…	0.2	…	1.7	…	0.9	…	0.9

* In contrast to other service sectors, innovation in communications, computer and related activities was statistically monitored during the entire period considered.

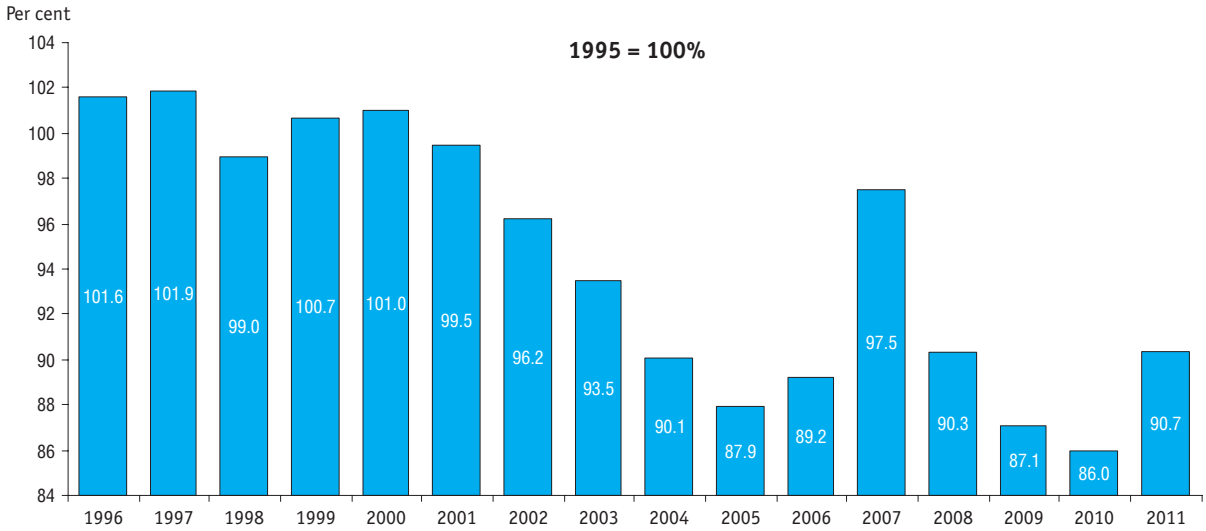
1. Institutions

1.1. R&D INSTITUTIONS BY TYPE

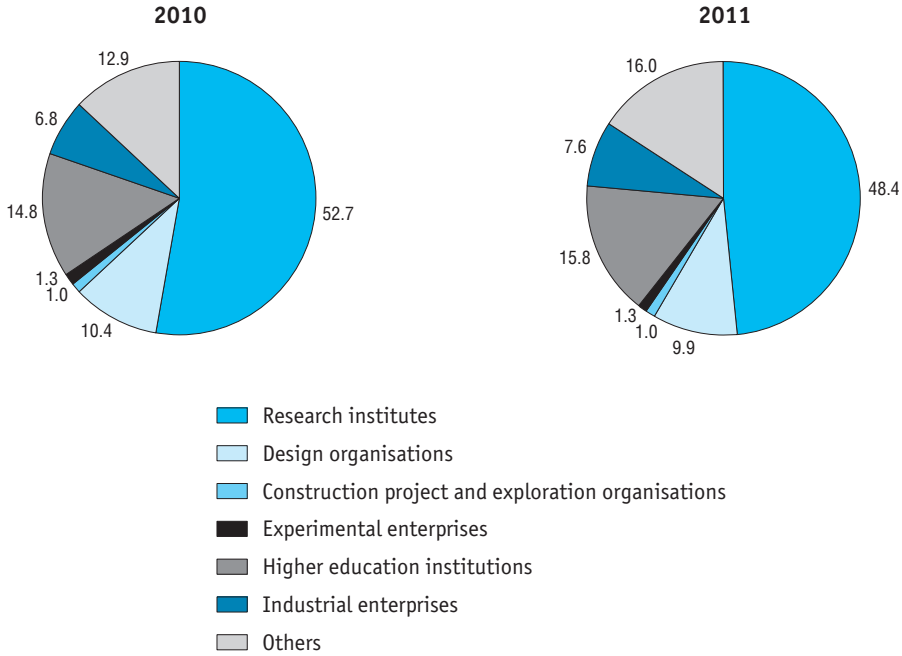
	1995	2000	2001	2002	2003	2004	2005*	2006*	2007*	2008*	2009*	2010*	2011*
Total	**4059**	**4099**	**4037**	**3906**	**3797**	**3656**	**3566**	**3622**	**3957**	**3666**	**3536**	**3492**	**3682**
Research institutes	2284	2686	2676	2630	2564	2464	2115	2049	2036	1926	1878	1840	1782
Design organisations	548	318	289	257	228	194	489	482	497	418	377	362	364
Construction project and exploration organisations	207	85	81	76	68	63	61	58	49	42	36	36	38
Experimental enterprises	23	33	31	34	28	31	30	49	60	58	57	47	49
Higher education institutions	395	390	388	390	393	402	406	417	500	503	506	517	581
Industrial enterprises	325	284	288	255	248	244	231	255	265	239	228	238	280
Others	277	303	284	264	268	258	234	312	550	480	454	452	588

* In 2005, the classification of types of R&D institutions was changed due to the abolition of the 'Russian 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

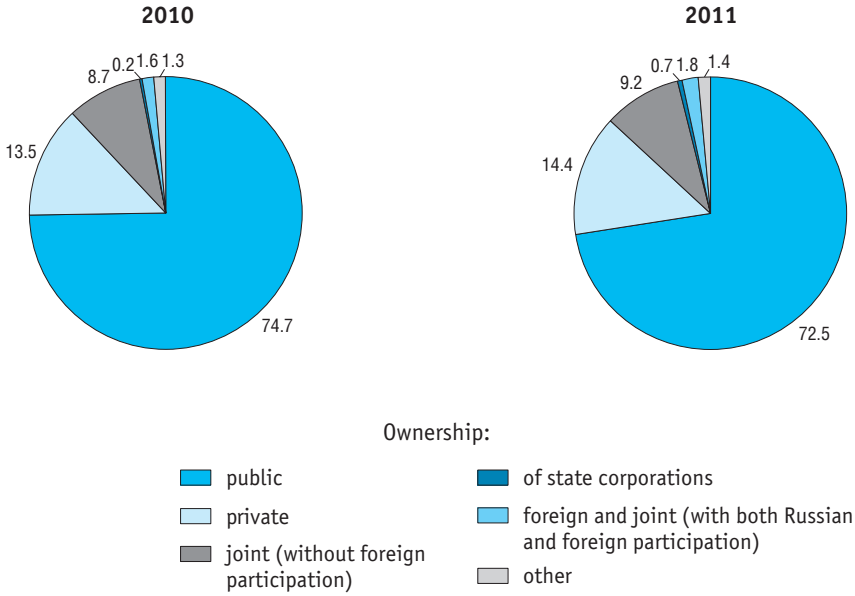
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**4059**	**4099**	**4037**	**3906**	**3797**	**3656**	**3566**	**3622**	**3957**	**3666**	**3536**	**3492**	**3682**
Russian ownership	4034	4035	3977	3841	3740	3599	3513	3572	3895	3613	3483	3436	3614
Public ownership	2979	2938*	2886	2817	2760	2675	2632	2652	2821	2716	2655	2610	2670
Federal	2783	2755	2704	2644	2599	2524	2483	2508	2650	2562	2503	2467	2493
Provincial	196	181	182	173	161	151	149	143	166	148	146	140	176
Municipal ownership	9	11	10	7	8	7	6	9	13	13	14	14	18
Ownership of voluntary associations	16	60	41	31	28	25	27	29	36	30	26	28	27
Private ownership	198	388	450	456	434	420	422	505	638	508	475	470	532
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	…	…	1
Ownership of consumer cooperatives**	…	3	4	2	2	4	4	4	3	2	3	4	4
Joint ownership	832	635	586	528	508	468	422	373	384	344	310	304	337
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	268	296
Other	…	…	…	…	…	…	…	…	…	…	…	…	41
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	6	25
Foreign ownership	1	6	4	8	6	6	7	6	11	13	14	16	21
Joint ownership (with both Russian and foreign participation)	24	58	56	57	51	51	46	44	51	40	39	40	47

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total, *per cent*	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Russian ownership	99.4	98.4	98.5	98.3	98.5	98.4	98.5	98.6	98.4	98.6	98.5	98.4	98.2
Public ownership	73.4	71.7	71.5	72.1	72.7	73.2	73.8	73.2	71.3	74.1	75.1	74.7	72.5
Federal	68.6	67.2	67.0	67.7	68.4	69.0	69.6	69.2	67.0	69.9	70.8	70.6	67.7
Provincial	4.8	4.4	4.5	4.4	4.2	4.1	4.2	3.9	4.2	4.0	4.1	4.0	4.8
Municipal ownership	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.5
Ownership of voluntary associations	0.4	1.5	1.0	0.8	0.7	0.7	0.8	0.8	0.9	0.8	0.7	0.8	0.7
Private ownership	4.9	9.5	11.1	11.7	11.4	11.5	11.8	13.9	16.1	13.9	13.4	13.5	14.4
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	…	…	0.03
Ownership of consumer cooperatives**	…	0.07	0.1	0.05	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Joint ownership	20.5	15.5	14.5	13.5	13.4	12.8	11.8	10.3	9.7	9.4	8.8	8.7	9.2
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	7.7	8.0
Other	…	…	…	…	…	…	…	…	…	…	…	…	1.1
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	0.2	0.7
Foreign ownership	0.02	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.6
Joint ownership (with both Russian and foreign participation)	0.6	1.4	1.4	1.5	1.3	1.4	1.3	1.2	1.3	1.1	1.1	1.1	1.3

* Details may not add up to the total because of shared ownership at some institutions.
** Until 2000, registered within institutions of private and joint Russian ownership.

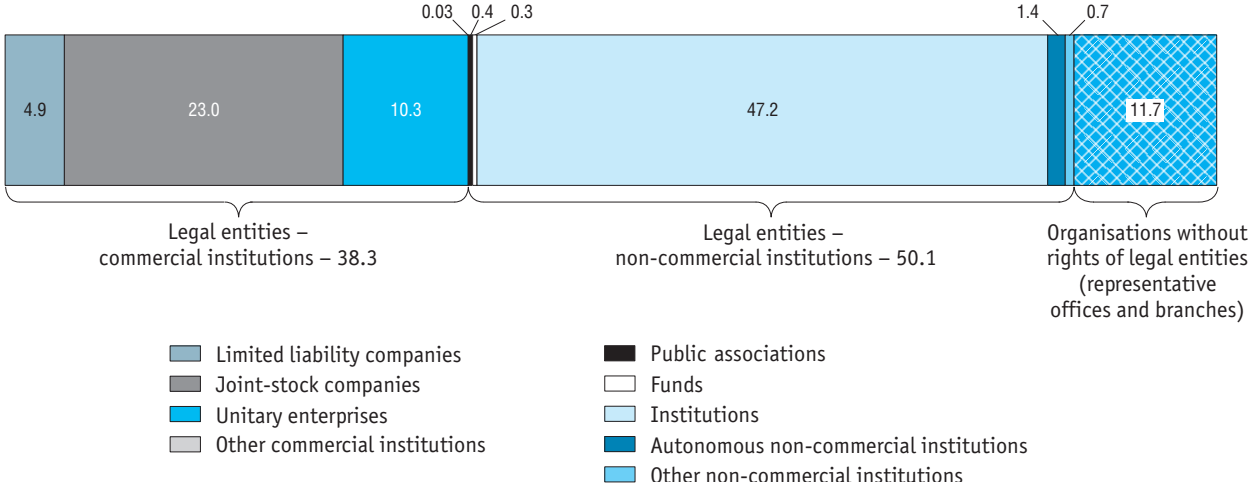
1.5. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS BY OWNERSHIP



1.6. R&D INSTITUTIONS BY ORGANISATIONAL AND LEGAL FORM: 2011

Total	**3682**
Legal entities – commercial institutions	1410
Economic partnerships and associations	1029
Limited liability companies	180
Additional liability companies	1
Joint-stock companies	848
Open joint-stock companies	700
Closed joint-stock companies	148
Production cooperatives	–
Unitary enterprises	381
Unitary enterprises based on the operative administration law	12
Unitary enterprises based on the economic management law	369
Legal entities – non-commercial institutions	1843
Public and religious associations	14
Funds	12
Institutions	1738
Private institutions	40
Public institutions	1657
Autonomous institutions	41
Non-commercial partnerships	16
Autonomous non-commercial institutions	53
Associations of legal entities	8
Other non-commercial institutions	2
Organisations without rights of legal entities (representative offices and branches)	429

1.7. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS BY ORGANISATIONAL AND LEGAL FORM: 2011



1.8. R&D INSTITUTIONS BY ECONOMIC ACTIVITY

	2005	2006	2007	2008	2009	2010	2011
Total	**3566**	**3622**	**3957**	**3666**	**3536**	**3492**	**3682**
Agriculture, hunting and forestry	24	24	41	39	39	35	34
Fishing, aquaculture and service activities incidental to fishing	1	1	1	–	1	1	–
Mining and quarrying	8	7	6	3	1	1	2
Manufacturing	241	272	304	274	268	276	317
Electricity, gas and water supply	–	2	1	2	1	1	1
Construction	–	–	1	–	–	–	–
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	–	–	3	1	–	–	2
Transport and communications	1	4	3	3	3	3	4
Real estate, renting and business activities	2757	2735	2875	2629	2517	2456	2526
Research and development	2628	2581	2702	2484	2395	2331	2398
Other business activities	117	118	121	103	93	95	93
Public administration and defence; compulsory social security	–	1	1	–	–	–	–
Education	428	455	544	543	541	549	620
Higher education	425	…	530	532	532	543	611
Health and social services	11	19	23	24	21	24	26
Other community, social and personal service activities	95	102	154	148	144	146	150
Recreational, cultural and sporting activities	90	97	146	141	137	140	143

2. R&D Personnel

2.1. R&D PERSONNEL
(head-count)

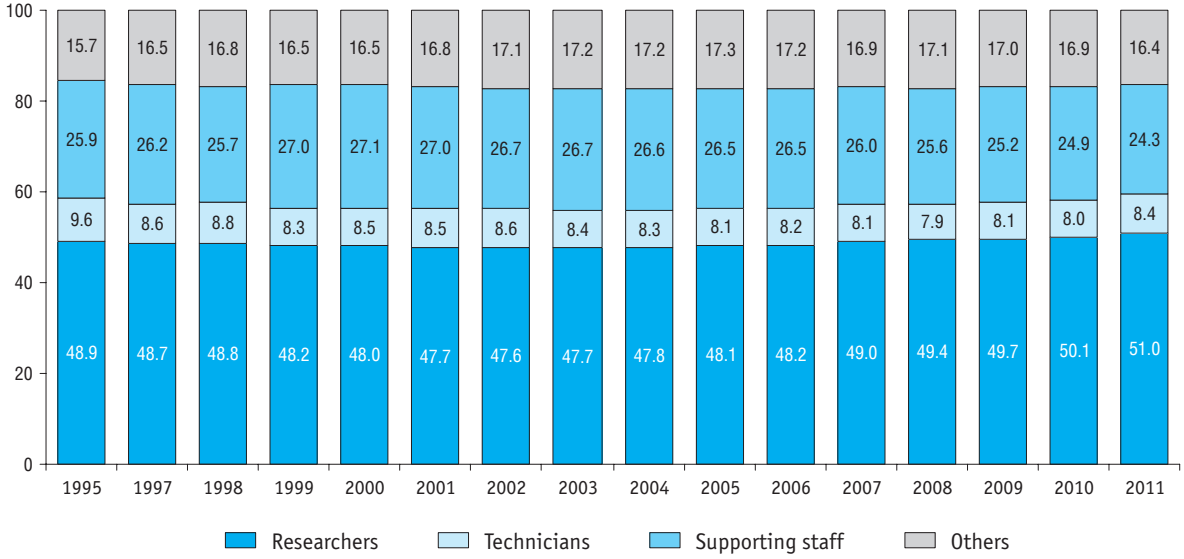
	1995	2000	2001	2002	2003	2004	2005*	2006*	2007*	2008*	2009*	2010*	2011*
Total	**1061044**	**887729**	**885568**	**870878**	**858470**	**839338**	**813207**	**807066**	**801135**	**761252**	**742433**	**736540**	**735273**
Research institutes	753253	718434	709125	719876	716362	700308	510523	499856	474985	454938	443702	435304	420031
Design organisations	129689	56488	72275	51627	42138	41713	184785	172521	179862	167517	163764	157146	159620
Construction project and exploration organisations	20870	6811	6588	7480	6583	6261	5443	7356	8406	7446	6738	6324	6466
Experimental enterprises	13640	6145	6402	7056	6870	4605	1232	6696	3528	1544	1588	1558	1817
Higher education institutions	40015	31110	31149	31053	31774	32105	33942	35179	40440	40003	41767	46776	53944
Industrial enterprises	89030	54721	48698	42446	43657	42192	43524	59856	56759	52042	49042	51807	52004
Others	14547	14020	11331	11340	11086	12154	33758	25602	37155	37762	35832	37625	41391

* In 2005, the classification of types of R&D institutions was changed due to the abolition of the 'Russian Classifier of Economy Branches'.

2.2. R&D PERSONNEL BY OCCUPATION
(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**1061044**	**887729**	**885568**	**870878**	**858470**	**839338**	**813207**	**807066**	**801135**	**761252**	**742433**	**736540**	**735273**
Researchers	518690	425954	422176	414676	409775	401425	391121	388939	392849	375804	369237	368915	374791
Technicians	101371	75184	75416	74599	71729	69963	65982	66031	64569	60218	60045	59276	61562
Supporting staff	274925	240506	238933	232636	229214	223356	215555	213579	208052	194769	186995	183713	178449
Others	166058	146085	149043	148967	147752	144594	140549	138517	135665	130461	126156	124636	120471

2.3. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY OCCUPATION



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

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						Head-count							
Total	**1061044**	**887729**	**885568**	**870878**	**858470**	**839338**	**813207**	**807066**	**801135**	**761252**	**742433**	**736540**	**735273**
Russian ownership	1060480	866386	867557	853468	841901	822749	797394	792009	785560	746412	734405	726234	723642
Public ownership	816799	673658*	667567	664944	663943	646727	641310	631694	622602	595458	585675	575035	559339
Federal	795299	657696	651416	651940	652364	635449	629207	621732	610145	584117	574697	564238	547922
Provincial	21500	15957	16151	13004	11579	11278	12103	9855	11979	10861	10503	10450	11355
Municipal ownership	738	725	404	121	147	85	77	189	207	186	180	170	229
Ownership of voluntary associations	1036	1207	550	365	272	208	231	304	376	460	474	512	531
Private ownership	26238	53408	65832	65536	64868	62862	58480	73478	79876	73509	69167	66906	74795
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	…	…	23
Ownership of consumer cooperatives**	…	16	28	13	11	27	27	24	10	10	253	268	308
Joint ownership	215669	137372	133176	122489	112660	112840	97269	86320	82489	76789	78656	78464	78756
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	66574	65362
Other	…	…	…	…	…	…	…	…	…	…	…	…	13394
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	4879	9661
Foreign ownership	–	146	142	159	468	337	1145	624	835	699	553	1130	1358
Joint ownership (with both Russian and foreign participation)	564	21197	17869	17251	16101	16252	14668	14433	14740	14141	7475	9176	10273

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						Per cent							
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Russian ownership	99.9	97.6	98.0	98.0	98.1	98.0	98.1	98.1	98.1	98.1	98.9	98.6	98.4
Public ownership	77.0	75.9	75.4	76.4	77.3	77.1	78.9	78.3	77.7	78.2	78.9	78.1	76.1
Federal	75.0	74.1	73.6	74.9	76.0	75.7	77.4	77.0	76.2	76.7	77.4	76.6	74.5
Provincial	2.0	1.8	1.8	1.5	1.3	1.3	1.49	1.2	1.5	1.4	1.4	1.4	1.5
Municipal ownership	0.07	0.08	0.05	0.01	0.02	0.01	0.01	0.02	0.03	0.02	0.02	0.02	0.03
Ownership of voluntary associations	0.1	0.1	0.06	0.04	0.03	0.02	0.028	0.04	0.05	0.1	0.1	0.1	0.1
Private ownership	2.5	6.0	7.4	7.5	7.6	7.5	7.19	9.1	10.0	9.7	9.3	9.1	10.2
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…		…	…	…	…	0.003
Ownership of consumer cooperatives**	….	0.002	0.003	0.001	0.001	0.003	0.003	0.003	0.001	0.001	0.03	0.04	0.04
Joint ownership	20.3	15.5	15.0	14.1	13.1	13.4	11.96	10.7	10.3	10.1	10.6	10.7	10.7
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	9.0	8.9
Other	…	…	…	…	…	…	…	…	…	…	…	…	1.8
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	0.7	1.3
Foreign ownership	–	0.02	0.02	0.02	0.05	0.04	0.14	0.08	0.1	0.1	0.1	0.2	0.2
Joint ownership (with both Russian and foreign participation)	0.05	2.4	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.9	1.0	1.2	1.4

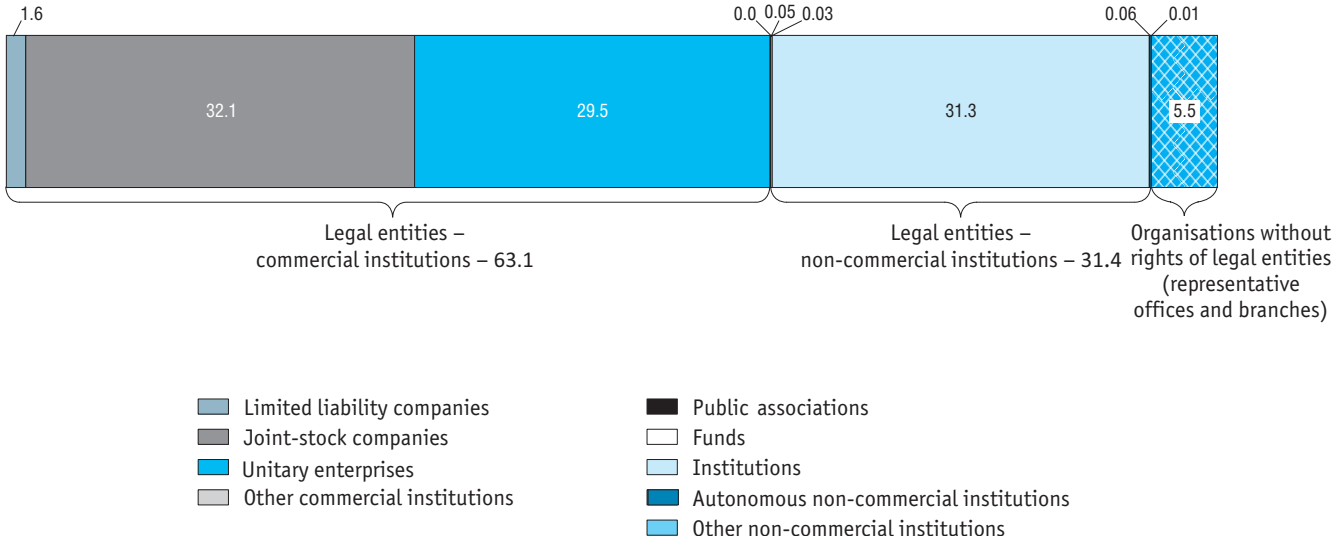
* Details may not add up to the total because of shared ownership at some institutions.
** Until 2000, registered within institutions of private and joint Russian ownership.

2.5. R&D PERSONNEL BY ORGANISATIONAL AND LEGAL FORM OF INSTITUTIONS: 2011

(head-count)

Total	**735273**
Legal entities – commercial institutions	463958
Economic partnerships and associations	247287
Limited liability companies	11535
Additional liability companies	3
Joint-stock companies	235749
Open joint-stock companies	221189
Closed joint-stock companies	14560
Production cooperatives	–
Unitary enterprises	216671
Unitary enterprises based on the operative administration law	4826
Unitary enterprises based on the economic management law	211845
Legal entities – non-commercial institutions	230901
Public and religious associations	350
Funds	143
Institutions	229873
Private institutions	987
Public institutions	225929
Autonomous institutions	2957
Non-commercial partnerships	59
Autonomous non-commercial institutions	431
Associations of legal entities	36
Other non-commercial institutions	9
Organisations without rights of legal entities (representative offices and branches)	40414

2.6. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY ORGANISATIONAL AND LEGAL FORM OF INSTITUTIONS: 2011



2.7. R&D PERSONNEL BY ECONOMIC ACTIVITY

(head-count)

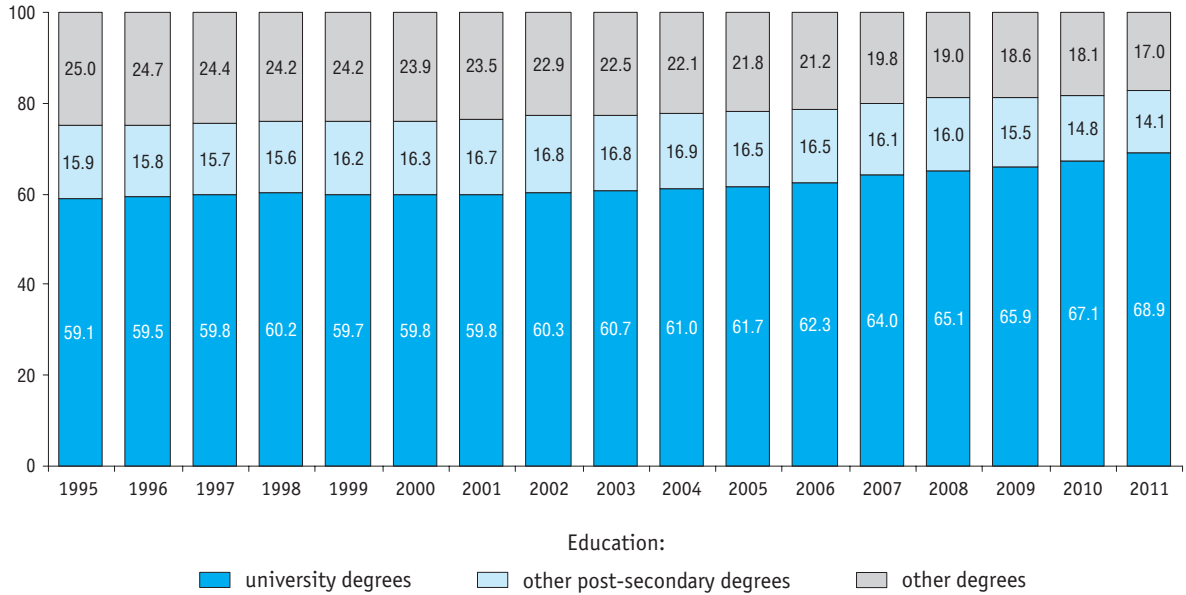
	R&D personnel			Researchers		
	2009	2010	2011	2009	2010	2011
Total	**742433**	**736540**	**735273**	**369237**	**368915**	**374791**
Agriculture, hunting and forestry	1146	1131	940	460	457	339
Fishing, aquaculture and service activities incidental to fishing	3	1	–	–	–	–
Mining and quarrying	66	66	64	63	64	62
Manufacturing	35855	34661	36605	18636	18474	20892
Electricity, gas and water supply	56	22	20	10	9	9
Construction	–	–	–	–	–	–
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	–	–	7	–	–	7
Transport and communications	329	318	410	194	200	253
Real estate, renting and business activities	654800	644893	633901	315837	310354	309006
Research and development	645139	635059	623807	309601	304081	302371
Other business activities	7257	6997	7500	4809	4410	4913
Public administration and defence; compulsory social security	–	–	–	–	–	–
Education	42558	47257	54386	30408	35172	39971
Higher education	42459	47180	54266	30331	35113	39861
Health and social services	2362	2819	2781	1233	1557	1549
Other community, social and personal service activities	5258	5371	6159	2396	2628	2703
Recreational, cultural and sporting activities	5236	5354	6142	2376	2615	2691

2.8. R&D PERSONNEL BY EDUCATIONAL ATTAINMENT

(head-count)

	Total	University degrees	Other post-secondary degrees	Other degrees
1995	1061044	626979	168999	265066
1996	990743	589480	156762	244501
1997	934637	559118	147149	228370
1998	855190	514539	133287	207364
1999	872363	520438	141220	210705
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

2.9. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY EDUCATIONAL ATTAINMENT

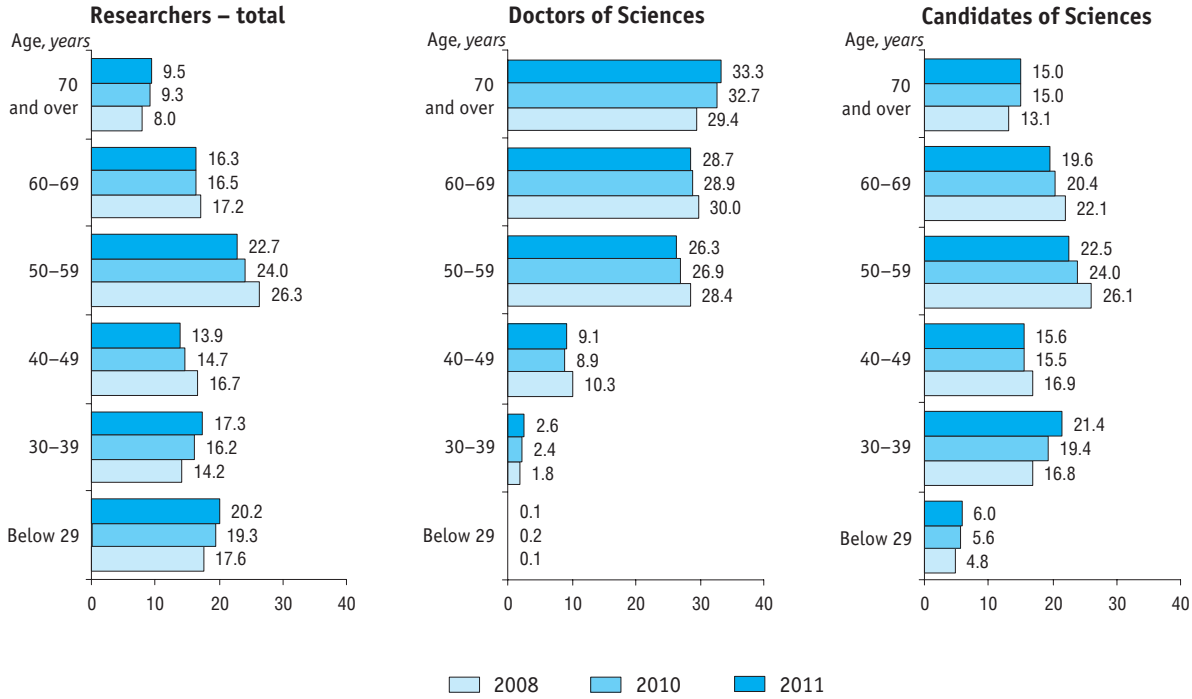


2.10. RESEARCHERS BY AGE GROUP

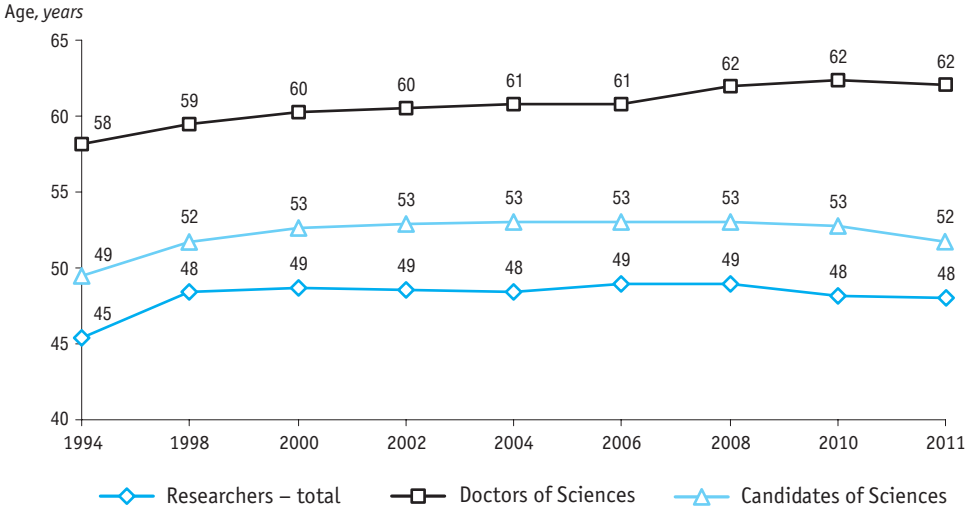
(head-count)

	2008			2010			2011		
	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	**375804**	**25140**	**75909**	**368915**	**26789**	**78325**	**374791**	**27675**	**81818**
Age, *years:*									
below 29	66191	17	3670	71194	52	4354	75622	28	4894
30–39	53364	445	12768	59910	632	15229	64975	719	17503
40–49	62733	2592	12857	54113	2394	12157	52179	2514	12734
50–59	98756	7151	19832	88362	7211	18805	85259	7270	18405
60–69	64528	7541	16800	60997	7743	16001	61181	7935	16004
70 and over	30232	7394	9982	34339	8757	11779	35575	9209	12278

2.11. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY AGE GROUP



2.12. AVERAGE AGE OF RESEARCHERS

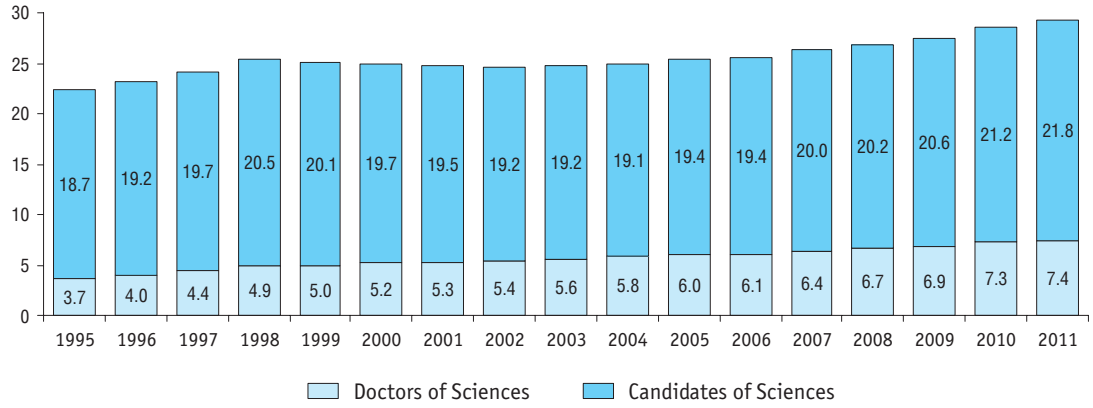


2.13. RESEARCHERS WITH SCIENTIFIC DEGREES

(head-count)

	1995	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers with scientific degrees	**116465**	**105884**	**105911**	**104414**	**102346**	**101806**	**99910**	**99428**	**99507**	**103725**	**101049**	**101275**	**105114**	**109493**
Doctors of Sciences	19330	20514	21949	22262	22571	22936	23102	23410	23880	25213	25140	25295	26789	27675
Candidates of Sciences	97135	85370	83962	82152	79775	78870	76808	76018	75627	78512	75909	75980	78325	81818

2.14. RESEARCHERS WITH SCIENTIFIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS

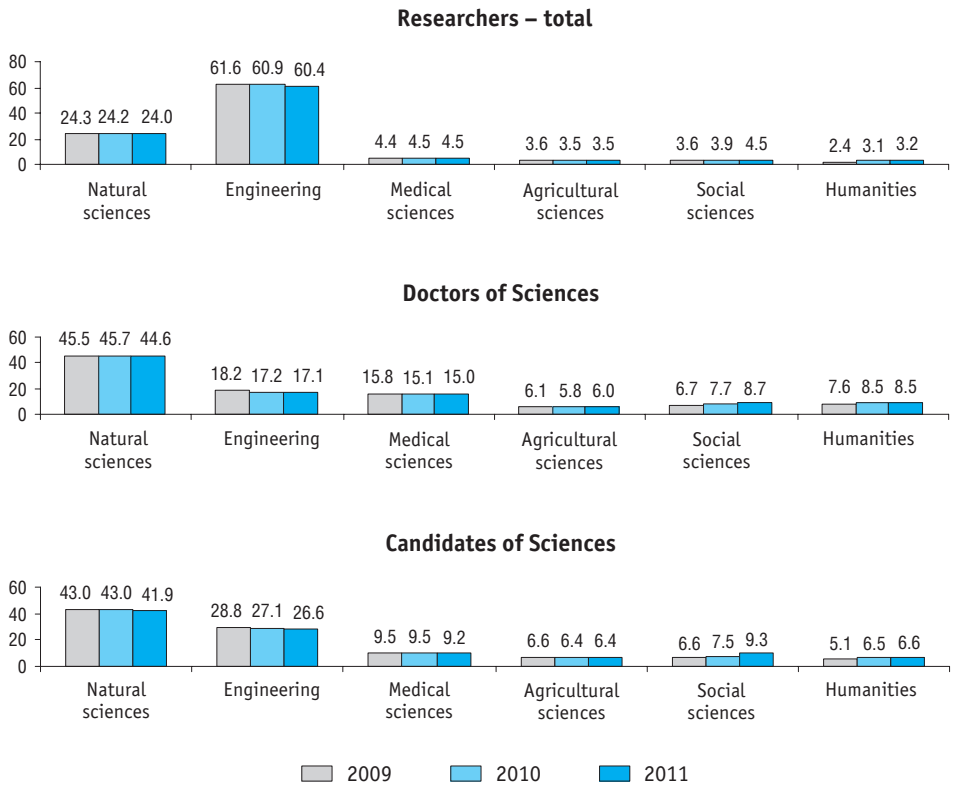


2.15. RESEARCHERS BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	2005			2008			2009			2010			2011		
	Researchers	Of whom		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		Doctors of Sciences	Candidates of Sciences
Total	**391121**	**23410**	**76018**	**375804**	**25140**	**75909**	**369237**	**25295**	**75980**	**368915**	**26789**	**78325**	**374791**	**27675**	**81818**
Natural sciences	91570	10738	32969	91117	11399	32304	89856	11520	32692	89375	12251	33664	89778	12345	34289
Engineering	249358	4495	23677	232463	4738	22372	227403	4612	21851	224641	4620	21260	226492	4737	21740
Medical sciences	15672	3715	6791	16713	3911	7492	16652	3988	7552	16516	4045	7475	16793	4158	7536
Agricultural sciences	13724	1356	4922	13622	1526	5031	13217	1547	5006	12734	1542	5004	12933	1663	5248
Social sciences	12497	1336	4158	13012	1614	4686	13272	1706	4982	14347	2057	5861	16967	2410	7573
Humanities	8300	1770	3501	8877	1952	4024	8837	1922	3897	11302	2274	5061	11828	2362	5432

2.16. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY FIELD OF SCIENCE AND TECHNOLOGY

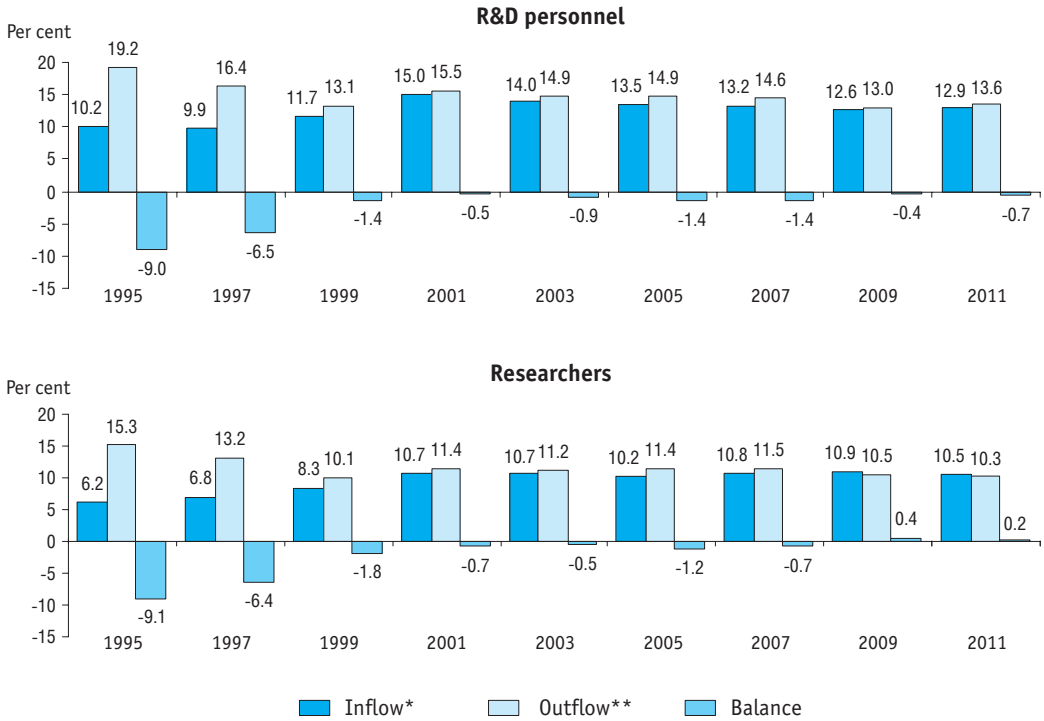


2.17. FLOWS OF R&D PERSONNEL

(head-count)

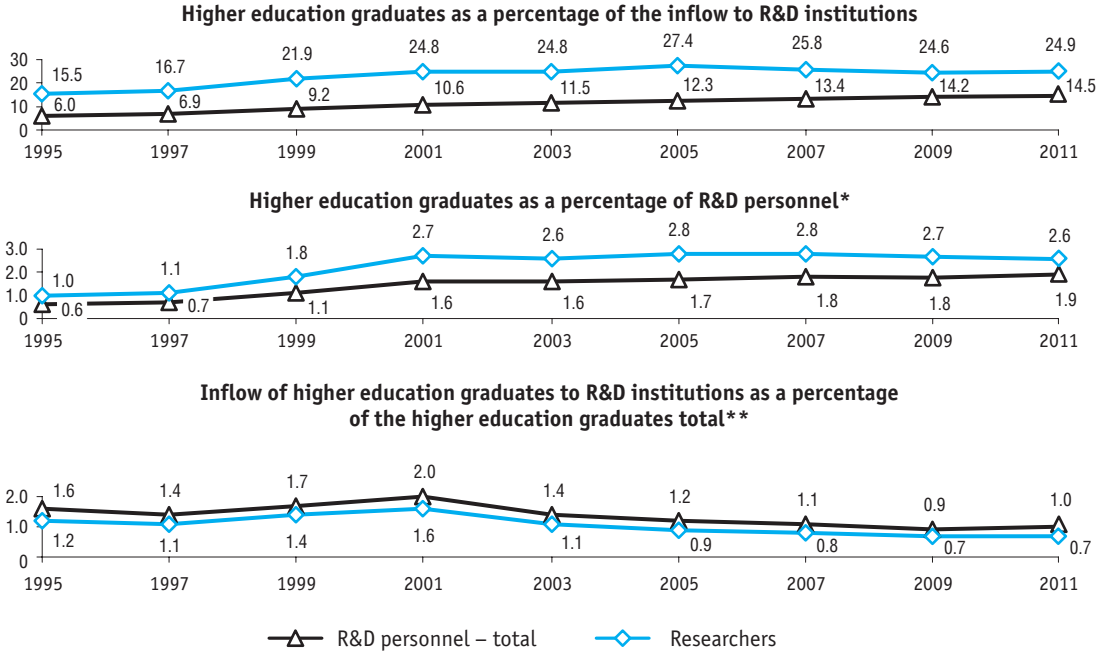
	Number at the beginning of the reference year	Inflow				Outflow				Number at the end of the reference year
		Total	Graduates from higher education institutions	From other research institutes	Others	Total	Voluntary turnover	Due to staff reduction	For other reasons	
1995	1179294	108335	6498	23402	78435	226585	141776	29747	55062	1061044
1996	1075752	92905	6447	19628	66830	177914	105992	24820	47102	990743
1997	1007043	92587	6433	17368	68786	164993	97163	26950	40880	934637
1999	886477	101951	9393	17956	74602	115978	72764	9516	33698	872363
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	94894	13725	11881	69288	100804	62848	2973	34983	735273

2.18. TRENDS IN INFLOW AND OUTFLOW OF R&D PERSONNEL



* The ratio of the R&D personnel admitted during the year to the number of employees at the end of the year.
** The ratio of the R&D personnel having resigned during the year to the number of employees at the beginning of the year.

2.19. INFLOW OF HIGHER EDUCATION GRADUATES TO R&D INSTITUTIONS



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

Postgraduate Education

2.20. MAIN INDICATORS OF POSTGRADUATE COURSES' ACTIVITIES

	Number of institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
			Total		
1995	1334	62317	24025	11369	2609
1998	1338	98355	34351	17972	4691
1999	1357	107031	37666	21982	5953
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

(continued)

	Number of institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
			Research institutes		
1995	828	11488	4024	2814	596
1998	800	15771	5411	3140	665
1999	804	15420	5322	3516	691
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

(continued)

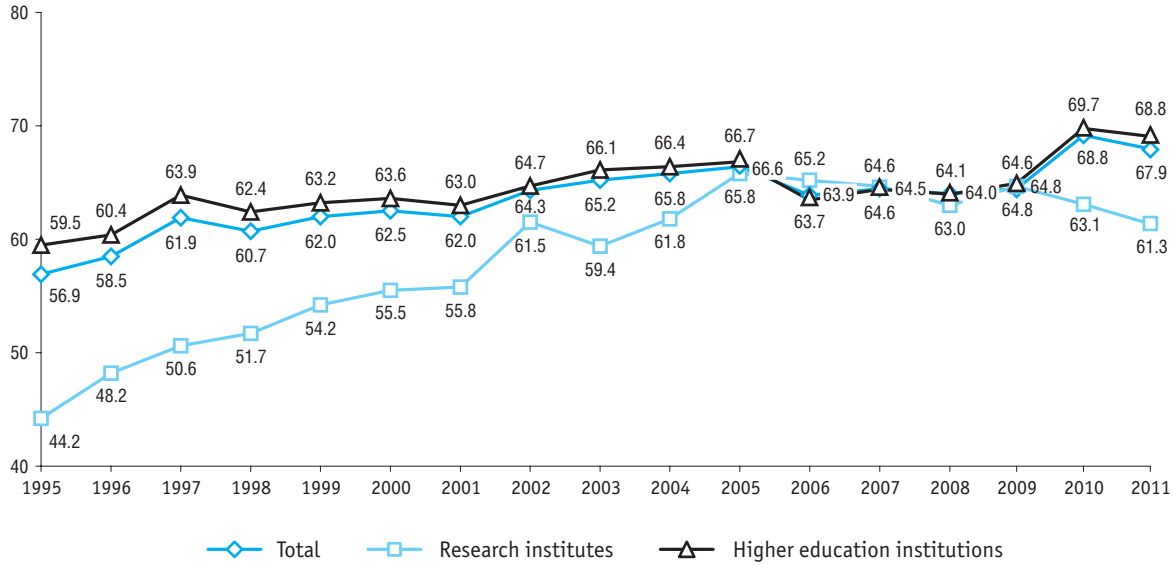
	Number of institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
		Higher education institutions			
1995	506	50829	20001	8555	2013
1998	538	82584	28940	14832	4026
1999	553	91611	32344	18466	5262
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
		Institutions for non-formal education/training			
2009	17	853	255	198	40
2010	11	593	155	160	28
2011	15	872	237	207	73

2.21. ADMISSION OF HIGHER EDUCATION GRADUATES TO POSTGRADUATE COURSES BY ATTENDANCE STATUS

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**13673**	**26926**	**28049**	**30178**	**31168**	**31371**	**31211**	**32232**	**33341**	**31756**	**35855**	**37528**	**34326**
Full-timers	11215	22076	22691	24674	24956	25621	25535	26022	27210	24827	28487	28507	24754
Part-timers	2458	4850	5358	5504	6212	5750	5676	6210	6131	6929	7368	9021	9572
Research institutes	1777	3370	3397	3705	3763	4090	4328	4124	3918	3391	3595	3569	2933
Full-timers	1340	2677	2546	2825	2987	3169	3439	3262	3167	2723	2896	2877	2379
Part-timers	437	693	851	880	776	921	889	862	751	668	699	692	554
Higher education institutions	11896	23556	24652	26473	27405	27281	26883	28108	29423	28365	32223	33955	31356
Full-timers	9875	19399	20145	21849	21969	22452	22096	22760	24043	22104	25564	25628	22347
Part-timers	2021	4157	4507	4624	5436	4829	4787	5348	5380	6261	6659	8327	9009
Institutions for non-formal education/ training	–	–	–	–	–	–	–	–	–	–	37	4	37
Full-timers	–	–	–	–	–	–	–	–	–	–	27	2	28
Part-timers	–	–	–	–	–	–	–	–	–	–	10	2	9

2.22. HIGHER EDUCATION GRADUATES AS A PERCENTAGE OF POSTGRADUATE COURSES' ADMISSION TOTAL*



* Graduates of the reference year. Data on admission to institutions for non-formal education/training: 2009 – 14.5%, 2010 – 2.6%, 2011 – 15.6%.

2.23. POSTGRADUATE COURSES' STUDENTS BY GENDER

(head-count)

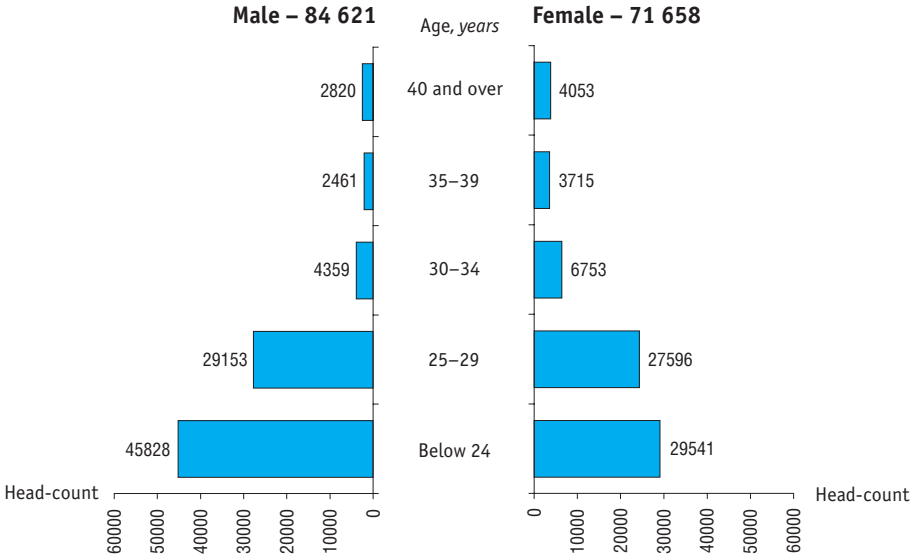
	Enrolment *(at the end of the year)*			Entrants			Graduates			Of whom with defended dissertations		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
2005												
Total	**142899**	**81147**	**61752**	**46896**	**28825**	**18071**	**33561**	**19222**	**14339**	**10650**	**5571**	**5079**
Research institutes	19986	11933	8053	6577	4267	2310	4806	3034	1772	1009	555	454
Higher education institutions	122913	69214	53699	40319	24558	15761	28755	16188	12567	9641	5016	4625
2007												
Total	**147719**	**84399**	**63320**	**51633**	**30992**	**20641**	**35747**	**20752**	**14995**	**10970**	**5652**	**5318**
Research institutes	18346	10884	7462	6072	3732	2340	4847	3113	1734	895	517	378
Higher education institutions	129373	73515	55858	45561	27260	18301	30900	17639	13261	10075	5135	4940
2008												
Total	**147674**	**81801**	**65873**	**49638**	**28257**	**21381**	**33670**	**19938**	**13732**	**8831**	**4550**	**4281**
Research institutes	17397	9981	7416	5381	3177	2204	4781	3020	1761	715	401	314
Higher education institutions	130277	71820	58457	44257	25080	19177	28889	16918	11971	8116	4149	3967
2009												
Total	**154470**	**83619**	**70851**	**55540**	**31518**	**24022**	**34235**	**20182**	**14053**	**10770**	**5617**	**5153**
Research institutes	16549	9429	7120	5549	3301	2248	4359	2717	1642	734	402	332
Higher education institutions	137068	73945	63123	49736	28153	21583	29678	17383	12295	9996	5198	4798
Institutions for non-formal education/ training	853	245	608	255	64	191	198	82	116	40	17	23

(continued)

	Enrolment *(at the end of the year)*			Entrants			Graduates			Of whom with defended dissertations		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
						2010						
Total	**157437**	**84672**	**72765**	**54558**	**31451**	**23107**	**33763**	**19838**	**13925**	**9611**	**5114**	**4497**
Research institutes	16936	9411	7525	5655	3339	2316	4335	2659	1676	729	407	322
Higher education institutions	139908	75089	64819	48748	28064	20684	29268	17117	12151	8854	4691	4163
Institutions for non-formal education / training	593	172	421	155	48	107	160	62	98	28	16	12
						2011						
Total	**156279**	**84621**	**71658**	**50582**	**29067**	**21515**	**33082**	**18681**	**14401**	**9635**	**4925**	**4710**
Research institutes	15865	8916	6949	4784	2790	1994	4028	2399	1629	693	349	344
Higher education institutions	139542	75499	64093	45561	26161	19400	28847	16222	12625	8869	4548	4321
Institutions for non-formal education/ training	872	256	616	237	116	121	207	60	147	73	28	45

2.24. POSTGRADUATE COURSES' STUDENTS BY GENDER AND AGE GROUP: 2011

(at the end of the year)



2.25. POSTGRADUATE COURSES' STUDENTS BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	Enrolment *(at the end of the year)*		Entrants		Graduates		Of whom with defended dissertations	
	2010	2011	2010	2011	2010	2011	2010	2011
Total	**157437**	**156279**	**54558**	**50582**	**33763**	**33082**	**9611**	**9635**
Physics and Mathematics	8396	8388	3126	2809	1771	1910	437	476
Chemistry	3481	3480	1185	1099	878	806	306	283
Biology	7065	7044	2398	2305	1680	1750	439	469
Engineering*	38694	40448	14500	14505	7761	7547	1903	1963
Agriculture**	5093	5171	1740	1723	1078	1074	296	385
History	4531	4559	1595	1412	1093	1003	341	319
Economics	27309	25939	9179	7820	5887	5507	1754	1676
Philosophy	3087	3035	1101	956	670	669	202	209
Philology	6897	6640	2171	2002	1573	1509	552	522
Law	12078	11268	3914	3413	2554	2494	551	555
Pedagogics	10298	9821	3385	2898	2179	2084	703	643
Medicine***	11448	11495	3771	3526	2798	2865	1225	1175
Arts	2235	2370	797	821	521	431	79	46
Psychology	3985	3786	1343	1148	770	735	215	214
Sociology	3134	2907	986	858	548	633	157	180
Politics	2046	2082	796	687	466	497	127	146
Earth and related environmental sciences****	5754	6013	1987	2003	1159	1111	236	256
Others	1906	1833	584	597	377	457	88	118

* Including Architecture.
** Including Veterinary.
*** Including Pharmacy.
**** Including Geology, Mineralogy and Geography.

2.26. PERSONS WHOSE CANDIDATE DEGREE AWARDS WERE CONFIRMED BY THE SUPREME CERTIFICATION COMMISSION OF THE RUSSIAN FEDERATION BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**11553**	**23075**	**22094**	**25315**	**26054**	**30118**	**30650**	**30577**	**24805**	**24618**	**24343**	**22438**
Physics and Mathematics	1059	1354	1175	1187	1246	1201	1453	1473	1052	1301	1227	1233
Chemistry	462	664	506	620	681	678	682	766	582	736	657	767
Biology	811	1333	1216	1366	1393	1462	1606	1487	1070	1565	1419	1242
Engineering	2563	4781	3819	4334	4050	5125	4804	5277	3366	4410	4025	3930
Agriculture	354	674	727	667	771	781	757	700	546	717	701	529
History	502	829	817	958	906	1116	1276	1052	707	849	839	628
Economics	870	2709	2586	4318	3853	4537	4723	5638	5150	2983	4081	3893
Philosophy	301	550	511	552	627	662	665	780	511	519	526	486
Philology	506	1115	1123	1063	1342	1648	1545	1447	1947	1448	1332	1283
Law	250	1084	1604	1459	1820	2300	2336	2221	1629	1597	1445	1195
Pedagogics	734	2167	2086	2295	2367	2794	2746	2658	2413	1931	1912	2084
Medicine	1944	3429	3704	4222	4434	4794	4929	4104	3675	3973	3767	2854
Pharmacy	76	86	77	89	103	105	110	120	101	93	96	89
Veterinary	96	199	229	243	210	222	208	189	153	188	138	183
Arts	81	114	105	91	158	185	171	178	135	226	172	183
Architecture	29	30	31	37	28	33	33	42	14	43	32	29
Psychology	198	508	537	490	621	730	807	784	553	633	519	516
Sociology	144	421	430	427	582	605	617	547	389	445	415	342
Politics	56	202	234	275	284	349	439	412	330	311	408	410
Earth and related environmental sciences*	258	441	339	363	380	421	421	376	230	373	353	262
Other	259	385	238	259	198	370	322	326	252	277	279	300

* Including Geology, Mineralogy and Geography.

2.27. MAIN INDICATORS OF DOCTORAL COURSES' ACTIVITIES

	Institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
			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

(continued)

	Institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
			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

(continued)

	Institutions *(at the end of the year)*	Enrolment, *head-count (at the end of the year)*	Entrants, *head-count*	Graduates, *head-count*	Of whom with defended dissertations, *head-count*
		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
		Institutions for non-formal education/training			
2009	3	5	1	2	–
2010	3	3	2	2	–
2011	4	3	1	1	–

2.28. DOCTORAL COURSES' STUDENTS BY GENDER

(head-count)

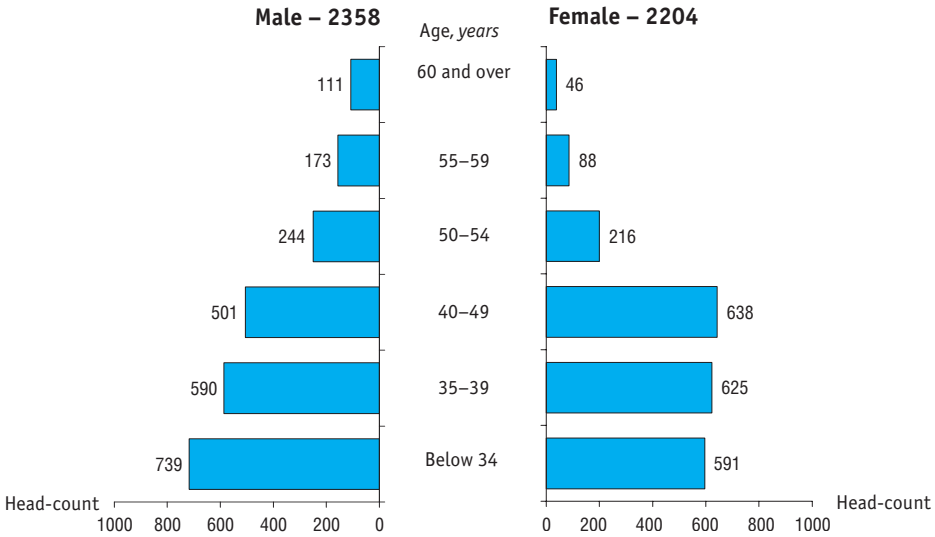
	Enrolment *(at the end of the year)*			Entrants			Graduates			Of whom with defended dissertations		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
2005												
Total	**4282**	**2357**	**1925**	**1457**	**859**	**598**	**1417**	**1855**	**562**	**516**	**306**	**210**
Research institutes	445	260	185	147	100	47	148	97	51	48	34	14
Higher education institutions	3837	2097	1740	1310	759	551	1269	758	511	468	272	196
2007												
Total	**4109**	**2225**	**1884**	**1520**	**830**	**690**	**1320**	**743**	**577**	**429**	**259**	**170**
Research institutes	358	194	164	118	74	44	116	69	47	33	23	10
Higher education institutions	3751	2031	1720	1402	756	646	1204	674	530	396	236	160
2008												
Total	**4242**	**2242**	**2000**	**1517**	**835**	**682**	**1216**	**703**	**513**	**297**	**166**	**131**
Research institutes	336	178	158	111	57	54	123	73	50	23	18	5
Higher education institutions	3906	2064	1842	1406	778	628	1093	630	463	274	148	126
2009												
Total	**4294**	**2276**	**2018**	**1569**	**855**	**714**	**1302**	**715**	**587**	**435**	**213**	**222**
Research institutes	327	168	159	114	54	60	107	57	50	23	16	7
Higher education institutions	3962	2104	1858	1454	801	653	1193	657	536	412	197	215
Institutions for non-formal education/training	5	4	1	1	–	1	2	1	1	–	–	–

(continued)

	Enrolment (at the end of the year)			Entrants			Graduates			Of whom with defended dissertations		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
2010												
Total	**4418**	**2315**	**2103**	**1650**	**887**	**763**	**1259**	**721**	**538**	**336**	**190**	**146**
Research institutes	299	136	163	100	44	56	95	69	26	20	17	3
Higher education institutions	4116	2178	1938	1548	842	706	1162	651	511	316	173	143
Institutions for non-formal education/training	3	1	2	2	1	1	2	1	1	–	–	–
2011												
Total	**4562**	**2358**	**2204**	**1696**	**922**	**774**	**1321**	**747**	**574**	**382**	**207**	**175**
Research institutes	303	140	163	106	53	53	100	49	51	17	5	12
Higher education institutions	4256	2217	2039	1589	869	720	1220	698	522	365	202	163
Institutions for non-formal education/training	3	1	2	1	–	1	1	–	1	–	–	–

2.29. DOCTORAL COURSES' STUDENTS BY GENDER AND AGE GROUP: 2011

(at the end of the year)



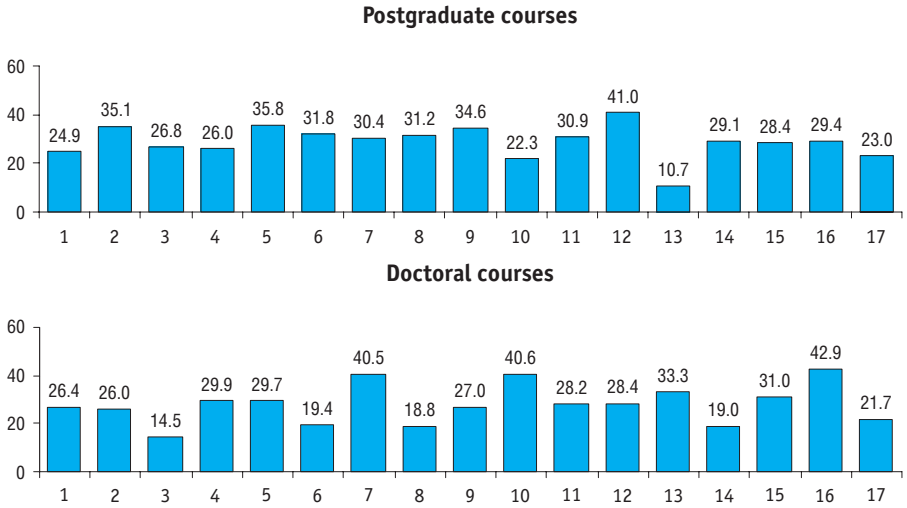
2.30. DOCTORAL COURSES' STUDENTS BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	Enrolment *(at the end of the year)*		Entrants		Graduates		Of whom with defended dissertations	
	2010	2011	2010	2011	2010	2011	2010	2011
Total	**4418**	**4562**	**1650**	**1696**	**1259**	**1321**	**336**	**382**
Physics and Mathematics	342	347	136	115	100	87	27	23
Chemistry	143	141	51	54	38	50	9	13
Biology	172	169	56	57	47	55	8	8
Engineering*	1173	1234	447	474	324	345	100	103
Agriculture**	117	108	42	41	38	37	10	11
History	206	206	73	77	46	62	10	12
Economics	512	536	186	201	154	163	48	66
Philosophy	166	165	56	68	49	48	19	9
Philology	335	339	115	112	100	89	24	24
Law	114	117	51	46	29	32	7	13
Pedagogics	410	455	159	171	125	110	28	31
Medicine***	269	276	102	92	74	88	22	25
Arts	19	21	10	8	3	6	1	2
Psychology	84	93	31	39	25	21	4	4
Sociology	105	109	44	44	28	29	6	9
Politics	53	43	24	18	13	28	6	12
Earth and related environmental sciences****	127	122	41	44	45	46	5	10
Other	71	81	26	35	14	25	2	7

* Including Architecture.
** Including Veterinary.
*** Including Pharmacy.
**** Including Geology, Mineralogy and Geography.

2.31. GRADUATES HAVING DEFENDED DISSERTATIONS DURING THE TRAINING TERM AS A PERCENTAGE OF GRADUATES FROM POSTGRADUATE AND DOCTORAL COURSES BY FIELD OF SCIENCE AND TECHNOLOGY: 2011



1 – Physics and Mathematics
2 – Chemistry
3 – Biology
4 – Engineering*
5 – Agriculture**
6 – History
7 – Economics
8 – Philosophy
9 – Philology
10 – Law
11 – Pedagogics
12 – Medicine***
13 – Arts
14 – Psychology
15 – Sociology
16 – Politics
17 – Earth and related environmental sciences****

* Including Architecture.
** Including Veterinary.
*** Including Pharmacy.
**** Including Geology, Mineralogy and Geography.

2.32. PERSONS, WHOSE DOCTOR DEGREE AWARDS WERE CONFIRMED BY THE SUPREME CERTIFICATION COMMISSION OF THE RUSSIAN FEDERATION BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**2760**	**4592**	**3662**	**4293**	**3329**	**3796**	**4182**	**3963**	**3917**	**2914**	**2936**	**3291**	**3214**
Physics and Mathematics	344	391	329	426	259	308	347	313	288	246	264	285	346
Chemistry	101	127	99	156	96	103	94	117	96	95	85	78	79
Biology	174	278	182	248	197	246	269	286	270	198	227	221	207
Engineering	702	1092	785	937	691	708	878	742	755	536	530	580	522
Agriculture	92	131	120	131	92	122	119	123	112	72	83	95	79
History	122	191	163	210	113	160	191	163	177	106	118	145	107
Economics	156	366	328	346	361	416	389	434	535	333	327	474	426
Philosophy	86	161	134	155	117	115	118	131	146	86	77	120	104
Philology	97	224	149	206	148	157	179	164	212	160	117	156	212
Law	52	109	111	113	131	137	165	144	137	94	84	108	85
Pedagogics	103	257	249	221	254	231	248	196	218	190	160	156	179
Medicine	510	855	726	859	594	766	793	775	657	562	612	628	580
Pharmacy	4	13	21	11	10	15	21	14	12	8	9	14	12
Veterinary	26	41	27	40	19	22	43	32	20	17	22	11	33
Arts	21	21	31	27	17	25	23	25	25	11	19	18	30
Architecture	5	9	6	8	5	8	8	6	4	5	2	1	–
Psychology	31	64	42	43	47	50	44	54	46	29	30	41	39
Sociology	15	62	48	27	46	55	73	64	55	49	41	34	47
Politics	17	43	19	5	34	49	44	48	35	24	38	45	50
Earth and related environmental sciences*	79	104	63	103	70	85	91	97	73	65	50	56	58
Other	23	53	30	21	28	18	45	35	44	28	41	25	19

* Including Geology, Mineralogy and Geography.

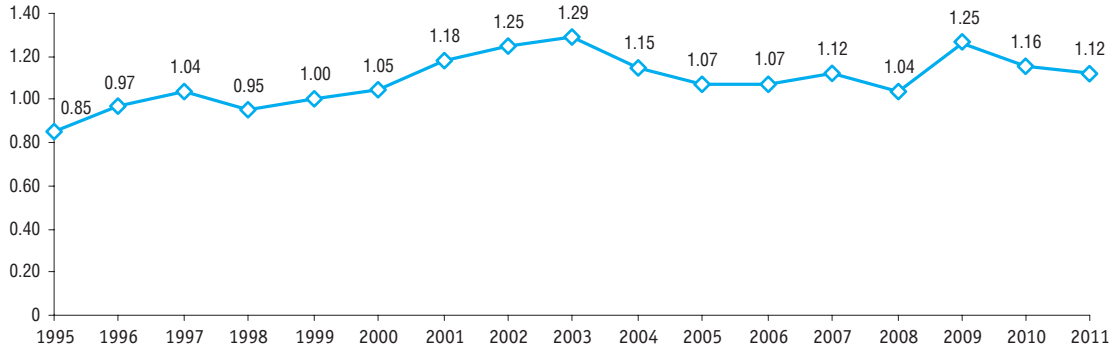
3. R&D Funding

3.1. GROSS DOMESTIC EXPENDITURE ON R&D

(thousand roubles, before 1998 – million roubles)

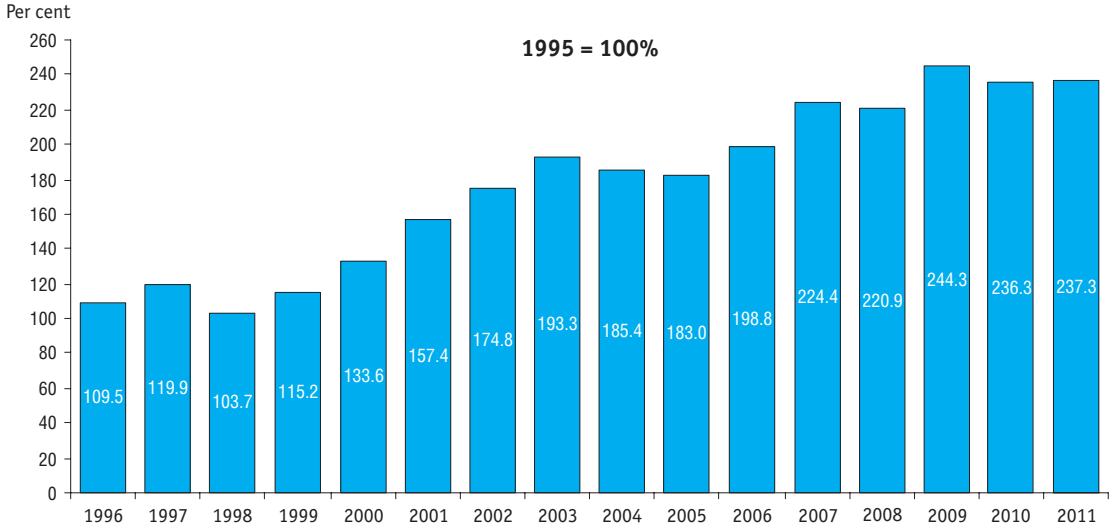
	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D:												
at current prices	12149458.6	76697100.5	135004491.9	169862369.1	196039870.2	230785150.3	288805211.5	371080327.1	431073185.2	485834338.2	523377233.9	610426680.6
at constant 1989 prices	2485.4	3321.2	4344.7	4803.6	4608.4	4547.5	4939.9	5577.5	5490.8	6067.0	5856.5	5898.6

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

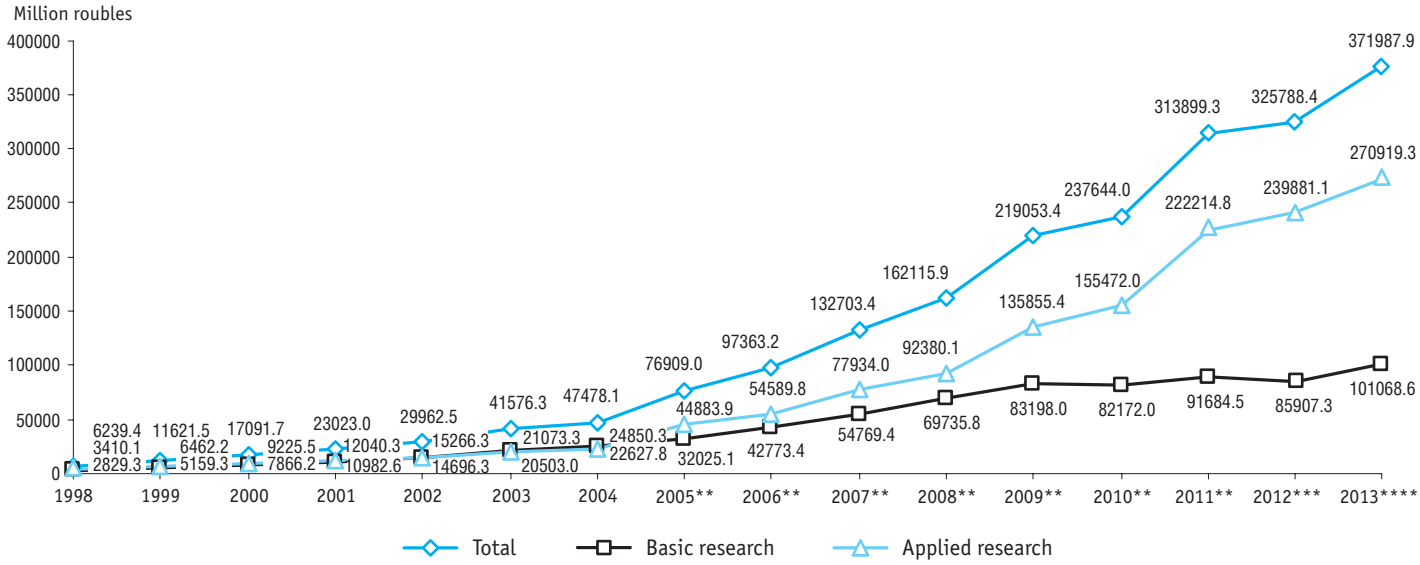


3.2. TRENDS IN GROSS DOMESTIC EXPENDITURE ON R&D

(at constant 1989 prices)

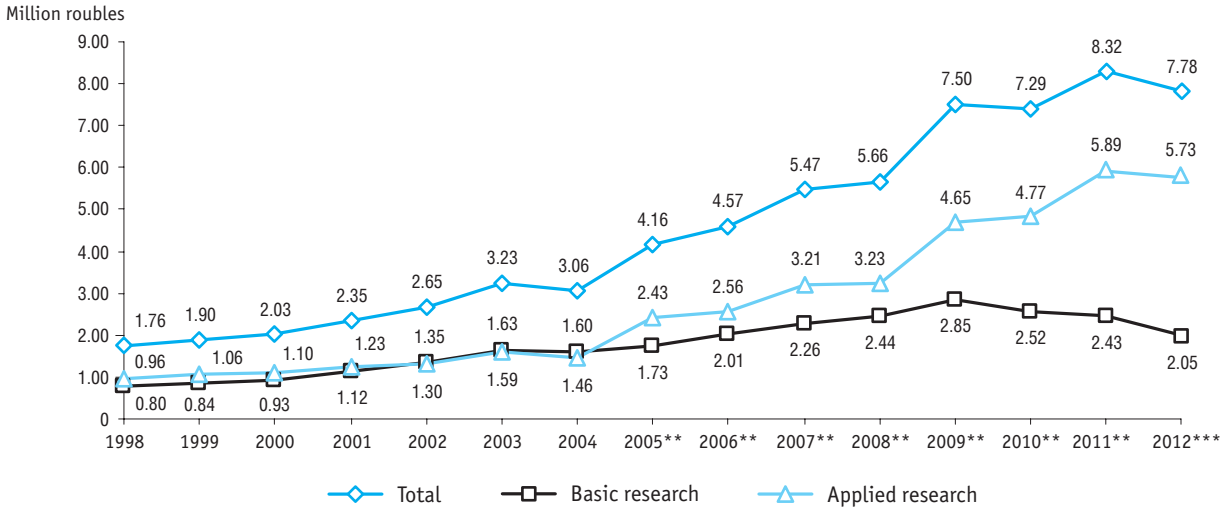


3.3. FEDERAL BUDGET APPROPRIATIONS ON CIVIL S&T AT CURRENT PRICES*



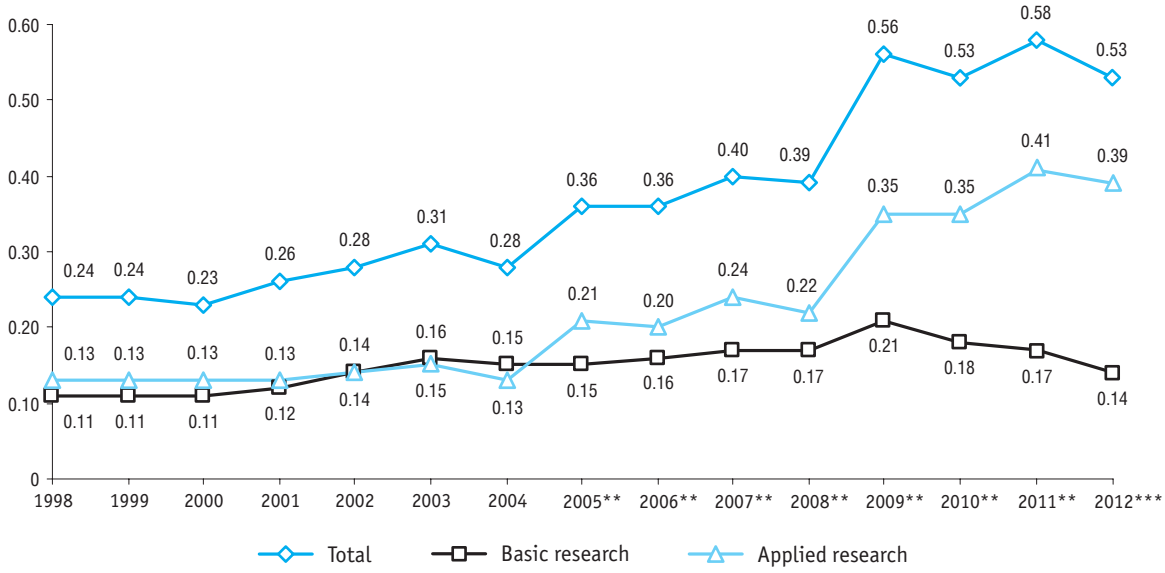
* 1998–2004: appropriations in Section 06 'Basic Research and Promotion of Science and Technology Progress' of the federal budget and its subsections.
** Source for 2005–2011: reports on the implementation of the consolidated budget and budgets of the state non-budget funds (data is provided by the Federal Treasury).
*** According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).
**** According to the Federal law 'About Federal budget for 2013 and for the planned period 2014 and 2015'.

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



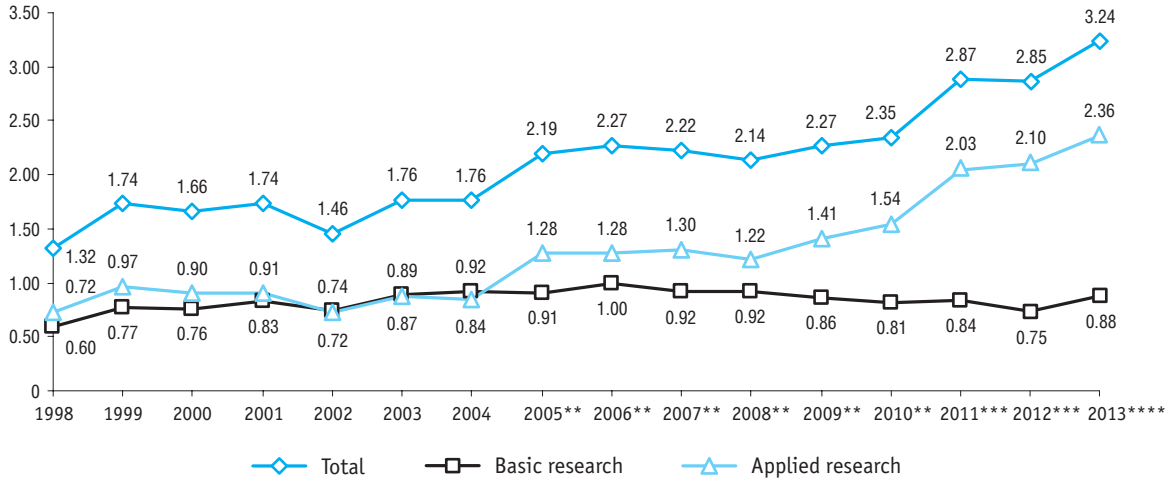
* 1998–2004: appropriations in Section 06 'Basic Research and Promotion of Science and Technology Progress' of the federal budget and its subsections.
** Source for 2005–2011: reports on the implementation of the consolidated budget and budgets of the state non-budget funds (data is provided by the Federal Treasury).
*** According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).

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



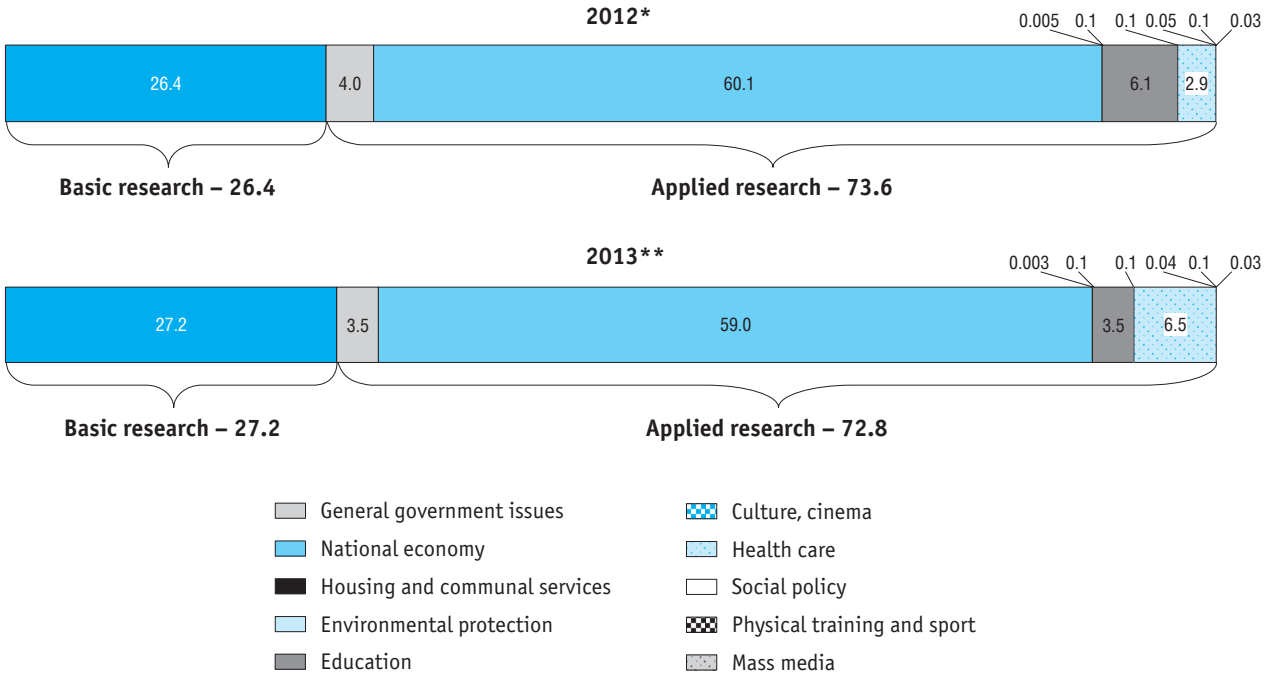
* 1998–2004: appropriations in Section 06 'Basic Research and Promotion of Science and Technology Progress' of the federal budget and its subsections.
** Source for 2005–2011: reports on the implementation of the consolidated budget and budgets of the state non-budget funds (data is provided by the Federal Treasury).
*** According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).

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



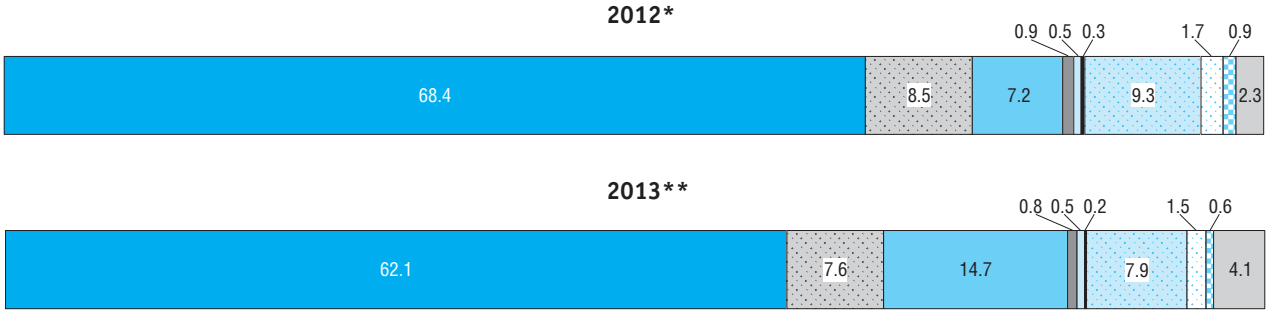
* 1998–2004: appropriations in Section 06 'Basic Research and Promotion of Science and Technology Progress' of the federal budget and its subsections.
** Source for 2005–2011: reports on the implementation of the consolidated budget and budgets of the state non-budget funds (data is provided by the Federal Treasury).
*** According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).
**** According to the Federal law 'About Federal budget for 2013 and for the planned period 2014–2015'.

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



* According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).
** According to the Federal law 'About Federal budget for 2013 and for the planned period 2014–2015' (with changes and additions).

3.8. PERCENTAGE DISTRIBUTION OF FEDERAL BUDGET APPROPRIATIONS ON BASIC RESEARCH BY MAJOR PUBLIC FUNDING BODIES



- Russian Academy of Sciences (including the Ural, Siberian and Far-Eastern branches)
- Russian Academy of Agricultural Sciences
- Russian Academy of Medical Sciences
- Russian Academy of Education
- Russian Academy of Fine Arts
- Russian Academy of Architecture and Civil Engineering
- Russian Foundation for Basic Research
- Russian Foundation for Research in Humanities
- The Ministry of Education and Science of the Russian Federation
- Others

* According to the Federal law 'About Federal budget for 2012 and for the planned period 2013–2014' (with changes and additions).
** According to the Federal law 'About Federal budget for 2013 and for the planned period 2014–2015' (with changes and additions).

3.9. 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, before 1998 – million roubles*						
1995	12149458.6	7476767.6	4076707.0	30543.0	3672.1	561768.9
1996	19393891.5	12040307.8	6112237.6	52232.4	107186.5	1081927.2
1997	24449691.2	14899937.7	7487191.8	50442.6	203702.5	1808416.6
1998	25082065.6	13435867.0	8755162.2	86546.1	231318.4	2573171.9
1999	48050525.0	24570856.4	15171014.9	178657.5	23620.7	8106375.5
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

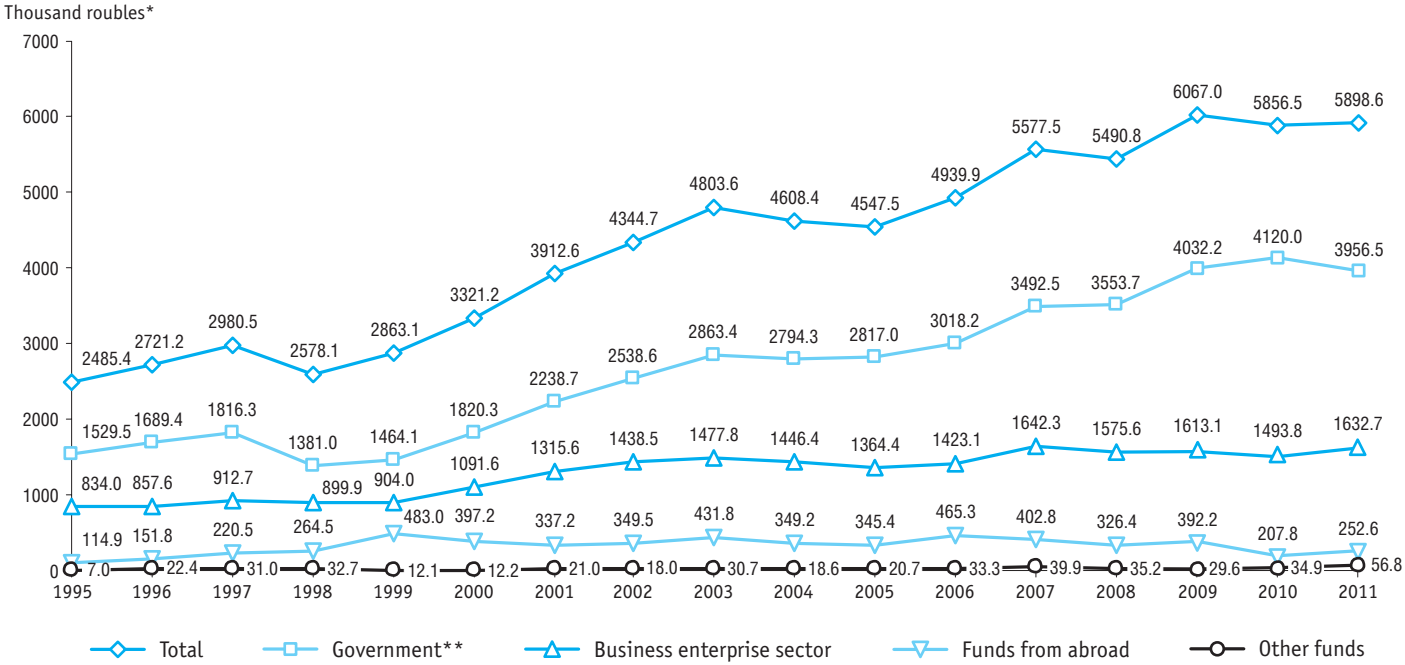
(continued)

	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
1996	100	62.1	31.5	0.3	0.6	5.6
1997	100	60.9	30.6	0.2	0.8	7.4
1998	100	53.6	34.9	0.3	0.9	10.3
1999	100	51.1	31.6	0.4	0.05	16.9
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

* Including federal budget appropriations, general university funds, and funds of government sector institutions (e.g. own funds of institutions).

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

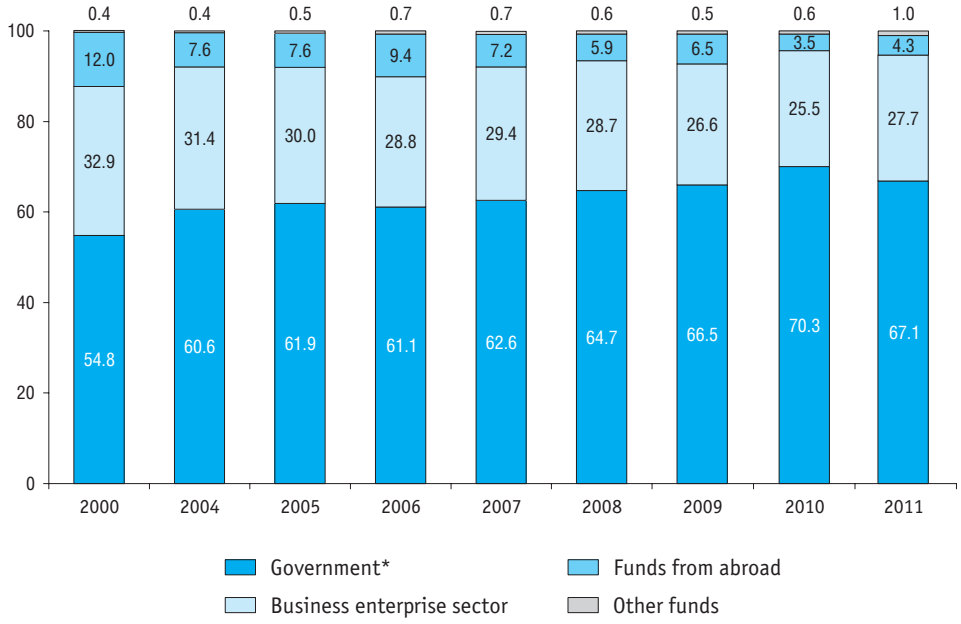
(at constant 1989 prices)



* Before 1998 – million roubles.

** Including federal budget appropriations, general university funds, and funds of government sector institutions (e.g. own funds of institutions).

3.11. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS



* Including federal budget appropriations, general university funds, and funds of government sector institutions (e.g. own funds of institutions).

3.12. GRANTS AND COMPETITIVE RESEARCH FUNDING

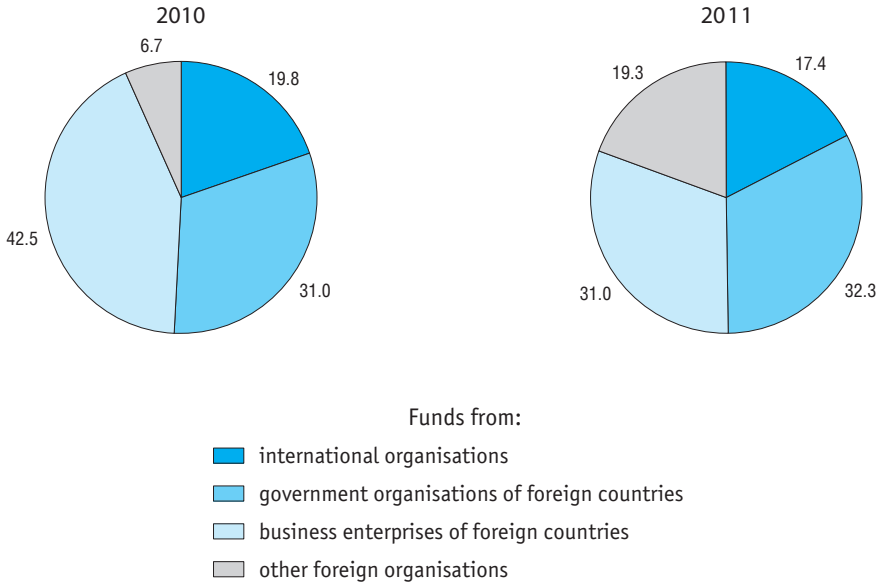
	2010		2011	
	Total, *thousand roubles*	Percentage of gross domestic expenditure on R&D	Total, *thousand roubles*	Percentage of gross domestic expenditure on R&D
Grants	7229208.6	1.4	14240100.9	2.3
Competitive research funding	49583862.2	9.5	70441797.9	11.5

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

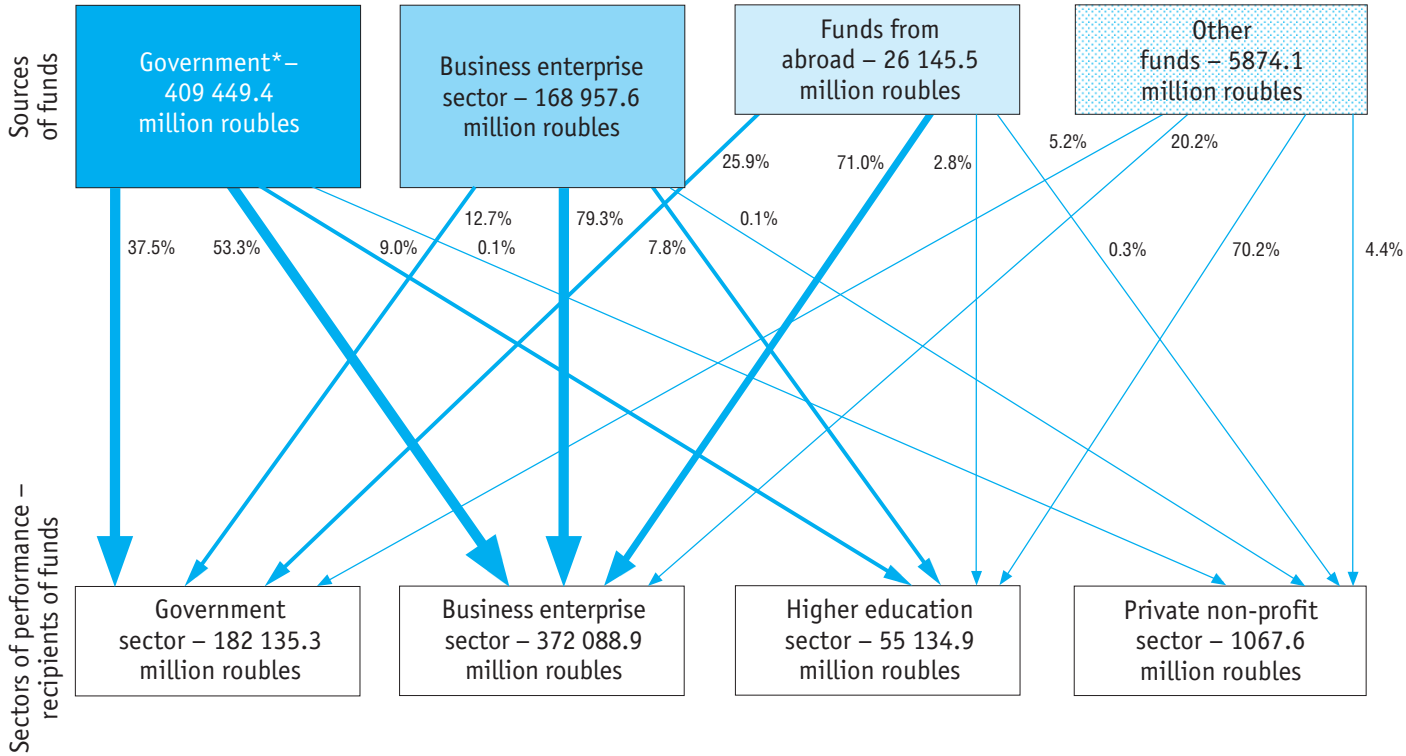
(thousand roubles)

	2009	2010	2011
Gross domestic expenditure on R&D financed from abroad – total	**31406161.7**	**18567536.0**	**26145508.4**
International organisations	4553354.8	3682117.0	4545277.8
Government organisations of foreign countries	9152681.5	5747982.3	8437766.1
Business enterprises of foreign countries	6895296.3	7893309.1	8107379.1
Other foreign organisations (educational institutions, funds, non-profit organisations)	10804829.1	1244127.6	5055085.4

3.14. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D FINANCED FROM ABROAD



3.15. R&D FUNDING BY SECTOR OF PERFORMANCE: 2011



* Including federal budget appropriations, general university funds and funds of government sector institutions (e.g. own funds of institutions).

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

	1995	2000	2003	2004	2005	2006	2007	2008	2009	2010	2011
	At current prices, *thousand roubles, before 1998 – million roubles*										
Total	**12149458.6**	**76697100.5**	**169862369.1**	**196039870.2**	**230785150.3**	**288805211.5**	**371080327.1**	**431073185.2**	**485834338.2**	**523377233.9**	**610426680.6**
Russian ownership	12137095.6	74254897.9	166731577.2	192681287.9	226582085.6	283277704.3	362788255.0	422024862.3	478787821.5	514058161.4	598027432.9
Public ownership	9303329.4	56254567.1	123907412.3	143215332.4	171855852.1	214273392.5	268054481.0	315468440.4	362864344.6	394615118.0	448854863.1
Federal	9047499.6	55150426.2	121854134.8	141004351.3	168986692.6	210972918.2	263267216.7	310681404.3	358511516.2	389105256.8	441676795.3
Provincial	255829.8	1099762.3	2053277.5	2210981.1	2869159.5	3284661.9	4674078.0	4675955.0	4181193.6	5396479.0	7152191.4
Municipal ownership	15214.6	50381.9	28270.6	22113.1	17253.5	34690.6	38024.6	58426.2	52807.3	50304.2	74152.5
Ownership of voluntary associations	35640.0	209229.3	133326.5	144342.7	339129.1	435221.6	589456.4	610938.9	525257.1	525085.2	711349.2
Private ownership	265827.3	4948266.7	15409510.2	18668329.9	20957744.5	35484593.7	51427162.7	63511011.8	66857001.6	60263592.5	69577239.4
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	21631.3
Ownership of consumer cooperatives*	…	1095.2	936.1	3301.8	4354.5	3624.3	2635.3	2515.4	35877.1	36590.0	39286.2
Joint ownership	2517084.3	12791357.7	27252121.5	30627868.0	33407751.9	33046181.6	42676495.0	42373529.6	48452533.8	55954325.1	69203059.8
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	49557690.9	62421583.0
Other	…	…	…	…	…	…	…	…	…	…	6781476.8
Ownership of state corporations	…	…	…	…	…	…	…	…	…	2613146.4	9545851.4
Foreign ownership	336.7	117265.0	303733.1	216749.1	697993.4	517669.7	675533.7	711942.6	778685.9	1390905.3	1780045.0
Joint ownership (with both Russian and foreign participation)	12026.3	2324937.6	2827058.8	3141833.2	3505071.3	5009837.5	7616538.4	8336380.3	6267830.8	7928167.2	10619202.7

(continued)

	1995	2000	2003	2004	2005	2006	2007	2008	2009	2010	2011
					Per cent						
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Russian ownership	99.9	96.8	98.2	98.3	98.2	98.1	97.8	97.9	98.5	98.2	98.0
Public ownership	76.6	73.3	72.9	73.1	74.5	74.2	72.2	73.2	74.7	75.4	73.5
Federal	74.5	71.9	71.7	71.9	73.2	73.1	70.9	72.1	73.8	74.3	72.4
Provincial	2.1	1.4	1.2	1.1	1.2	1.1	1.3	1.1	0.9	1.0	1.2
Municipal ownership	0.1	0.07	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Ownership of voluntary associations	0.3	0.3	0.08	0.07	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Private ownership	2.2	6.5	9.1	9.5	9.1	12.3	13.9	14.7	13.8	11.5	11.4
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	0.004
Ownership of consumer cooperatives*	…	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.006
Joint ownership	20.7	16.7	16.0	15.6	14.5	11.4	11.5	9.8	10.0	10.7	11.3
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	9.5	10.2
Other	…	…	…	…	…	…	…	…	…	…	1.1
Ownership of state corporations	…	…	…	…	…	…	…	…	…	0.5	1.1
Foreign ownership	0.002	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.2	0.3	0.3
Joint ownership (with both Russian and foreign participation)	0.1	3.0	1.7	1.6	1.5	1.7	2.1	1.9	1.3	1.5	1.7

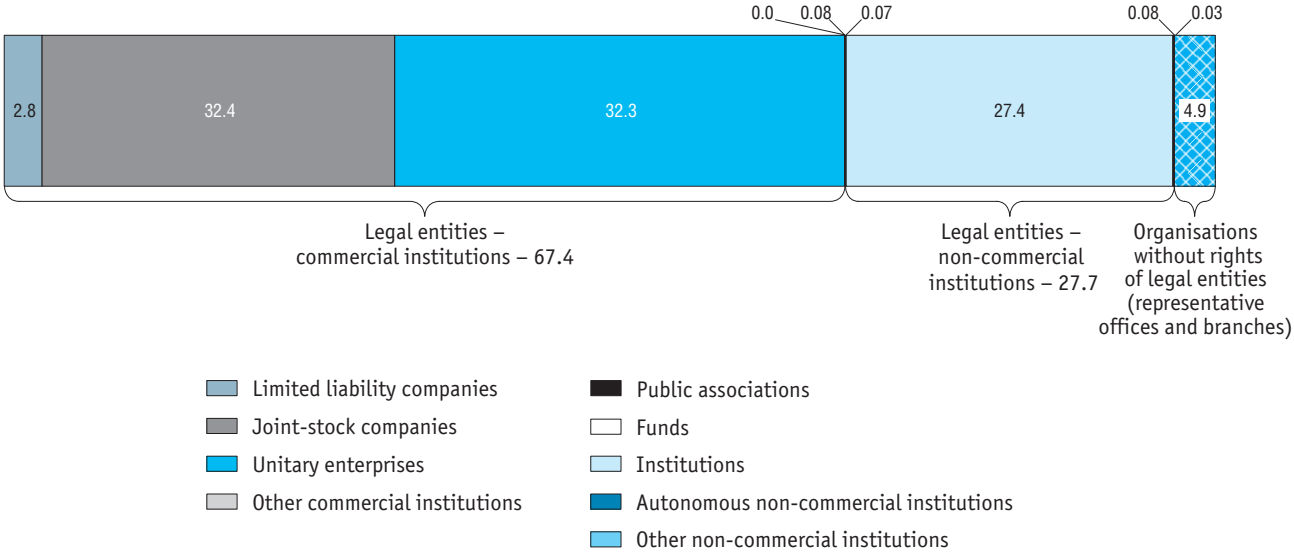
* Until 2000, registered within institutions of private and joint Russian ownership.

3.17. GROSS DOMESTIC EXPENDITURE ON R&D BY ORGANISATIONAL AND LEGAL FORM OF INSTITUTIONS: 2011

(thousand roubles)

Total	**610426680.6**
Legal entities – commercial institutions	411450496.7
Economic partnerships and associations	214574326.7
Limited liability companies	16913582.3
Additional liability companies	37.0
Joint-stock companies	197660707.4
Open joint-stock companies	181795877.9
Closed joint-stock companies	15864829.5
Production cooperatives	–
Unitary enterprises	196876170.0
Unitary enterprises based on the operative administration law	2135178.6
Unitary enterprises based on the economic management law	194740991.4
Legal entities – non-commercial institutions	168878145.7
Public and religious associations	515260.8
Funds	439492.1
Institutions	167273382.5
Private institutions	396971.9
Public institutions	163792548.4
Autonomous institutions	3083862.2
Non-commercial partnerships	99626.1
Autonomous non-commercial institutions	492296.2
Associations of legal entities	30452.3
Other non-commercial institutions	27635.7
Organisations without rights of legal entities (representative offices and branches)	30098038.2

3.18. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY ORGANISATIONAL AND LEGAL FORM OF INSTITUTIONS: 2011



3.19. GROSS DOMESTIC EXPENDITURE ON R&D BY ECONOMIC ACTIVITY

(thousand roubles)

	2005	2006	2007	2008	2009	2010	2011
Total	**230785150.3**	**288805211.5**	**371080327.1**	**431073185.2**	**485834338.2**	**523377233.9**	**610426680.6**
Agriculture, hunting and forestry	146783.8	168038.5	234711.8	216759.4	247724.7	253871.9	289856.1
Fishing, aquaculture and service activities incidental to fishing	5559.6	5128.5	4815.9	–	2890.8	485.2	–
Mining and quarrying	584953.6	759674.8	520979.7	227950.7	79238.0	55728.0	54729.0
Manufacturing	10631526.1	14022454.9	17388637.3	17425481.7	17009365.1	21372426.7	23051252.7
Electricity, gas and water supply	–	8962.0	1253.0	2367.0	10085.0	8234.0	8654.0
Construction	–	–	7280.0	–	–	–	–
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	–	–	28904.0	29469.6	–	–	5468.0
Transport and communications	29750.3	41647.8	92908.4	106528.9	117993.5	143777.6	190798.7
Real estate, renting and business activities	207643389.9	257434033.3	330188298.2	384699057.6	433962004.3	455185374.4	530882724.2
Research and development	204907680.4	253859790.2	324567876.3	376609160.0	425872251.2	447596655.1	520913787.4
Other business activities	2469504.1	2727385.2	4127632.5	6447839.7	6434826.7	5464671.8	7513061.1
Public administration and defence; compulsory social security	–	638.2	850.4	–	–	–	–
Education	11076460.7	15154201.1	20479152.8	25502783.6	31254495.1	39254089.2	50880815.2
Higher education	11071971.7	…	20441343.1	25455288.1	31224588.5	39220988.4	50849957.2
Health and social services	71943.4	425370.3	742646.0	1121528.7	1080303.2	4758071.7	2082060.2
Other community, social and personal service activities	594782.9	785062.1	1389889.6	1741258.0	2070238.5	2345175.2	2980322.5
Recreational, cultural and sporting activities	574352.3	779174.5	1365064.4	1724918.2	2032341.9	2331388.6	2930451.3

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011
	At current prices, *thousand roubles*								
Gross domestic expenditure on R&D	**169862369.1**	**196039870.2**	**230785150.3**	**288805211.5**	**371080327.1**	**431073185.2**	**485834338.2**	**523377233.9**	**610426680.6**
Intramural current expenditure	161202715.5	187210461.2	221119537.6	277784757.3	352917701.2	410864983.6	461006216.2	489450798.7	568386749.7
Salaries	65142718.8	77739627.5	94274453.3	119354664.7	157514386.8	193344895.7	217897038.1	241472234.1	275925134.3
Of which for R&D personnel*	57972004.2	68863831.4	83218561.7	103821166.7	137956617.2	170633861.4	189457703.8	211660690.5	239162179.8
Social security payments	20659604.1	23439789.6	22597417.5	28352943.9	34565859.1	40020294.9	43723470.6	47904606.9	68647474.6
Equipment	8528482.5	7800356.4	9936177.7	12417625.9	14027427.5	14604195.2	16144658.7	18067655.4	20065178.2
Fixed assets	4853900.0	3564222.5	4349636.2	5406455.5	5866364.7	6669261.8	7973703.9	6839036.4	8231253.4
Other material costs	37616031.7	45299285.1	51304357.4	66886839.9	83426976.6	72945529.7	89861803.2	89279048.7	101591855.4
Other current costs	29255878.4	32931402.6	43007131.7	50772682.9	63383051.2	89950068.1	93379245.6	92727253.6	102157107.2
Capital expenditure	8659653.6	8829409.0	9665612.7	11020454.2	18162625.9	20208201.6	24828122.0	33926435.2	42039930.9
Land and buildings	1313479.6	1190433.5	1647639.4	1993820.7	3577647.3	5474654.9	4298550.9	8077521.7	8421252.7
Equipment	4644146.8	5511877.3	5818068.7	6715748.3	11689028.2	10775180.6	15438763.7	19887596.3	23968272.7
Other capital expenditure	2702027.2	2127098.2	2199904.6	2310885.2	2895950.4	3958366.1	5090807.4	5961317.2	9650405.5

(continued)

	2003	2004	2005	2006	2007	2008	2009	2010	2011
				Per cent					
Gross domestic expenditure on R&D	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Intramural current expenditure	94.9	95.5	95.8	96.2	95.1	95.3	94.9	93.5	93.1
Salaries	38.4	39.7	40.8	41.3	42.4	44.9	44.9	46.1	45.2
Of which for R&D personnel*	34.1	35.1	36.1	35.9	37.2	39.6	39.0	40.4	39.2
Social security payments	12.2	12.0	9.8	9.8	9.3	9.3	9.0	9.2	11.2
Equipment	5.0	4.0	4.3	4.3	3.8	3.4	3.3	3.5	3.3
Other material costs	22.1	23.1	22.2	23.2	22.5	16.9	18.5	17.1	16.6
Other current costs	17.2	16.8	18.6	17.6	17.1	20.9	19.2	17.7	16.7
Capital expenditure	5.1	4.5	4.2	3.8	4.9	4.7	5.1	6.5	6.9
Land and buildings	0.8	0.6	0.7	0.7	1.0	1.3	0.9	1.5	1.4
Equipment	2.7	2.8	2.5	2.3	3.1	2.5	3.2	3.8	3.9
Other capital expenditure	1.6	1.1	0.95	0.8	0.8	0.9	1.0	1.1	1.6

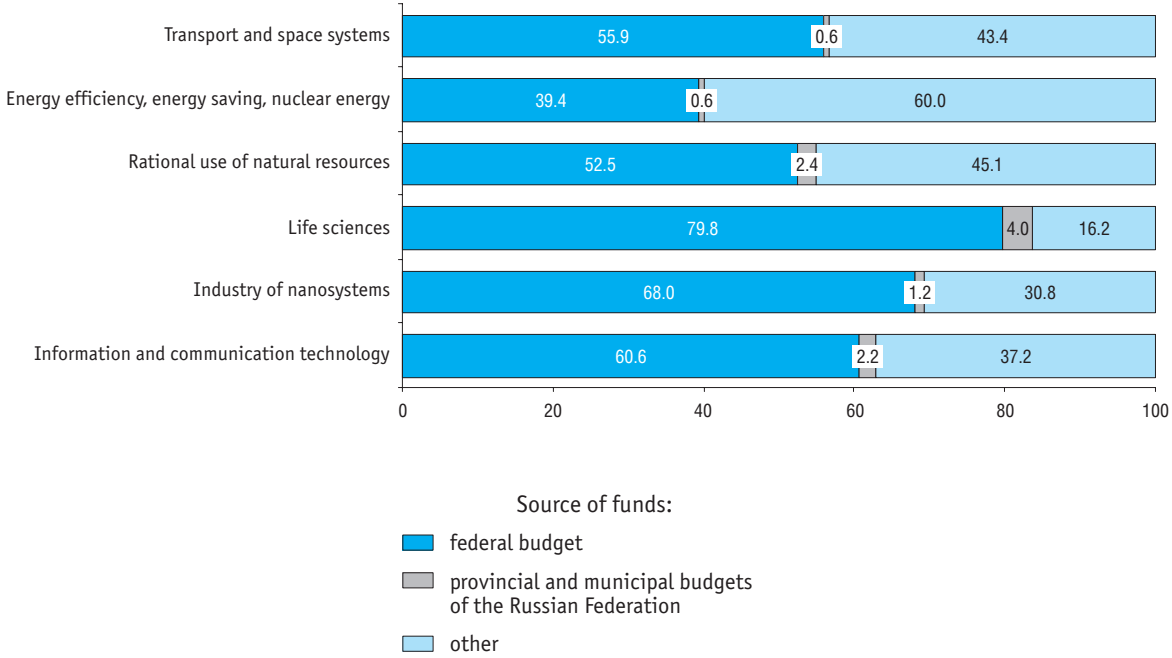
* Excluding those employed on a plural basis and under contracts.

3.21. GROSS DOMESTIC EXPENDITURE ON R&D BY PRIORITY S&T AREA AND SOURCE OF FUNDS: 2011

(thousand roubles)

	Total	Information and communication technology	Industry of nanosystems	Life sciences	Rational use of natural resources	Energy efficiency, energy saving, nuclear energy	Transport and space systems
Gross domestic expenditure on R&D by priority S&T area	**361603714.9**	**46609894.2**	**23451735.9**	**19918844.3**	**29033462.5**	**37318752.3**	**148970064.6**
Federal budget	204909268.0	28242303.7	15952253.1	15889603.4	15249506.2	14720916.9	83327383.0
Provincial and municipal budgets of the Russian Federation	4770873.9	1018062.8	281293.0	796821.9	703775.0	208184.1	966753.8
Other	151923573.0	17349527.7	7218189.8	3232419.0	13080181.3	22389651.3	64675927.8

3.22. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY PRIORITY S&T AREA AND SOURCE OF FUNDS: 2011



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

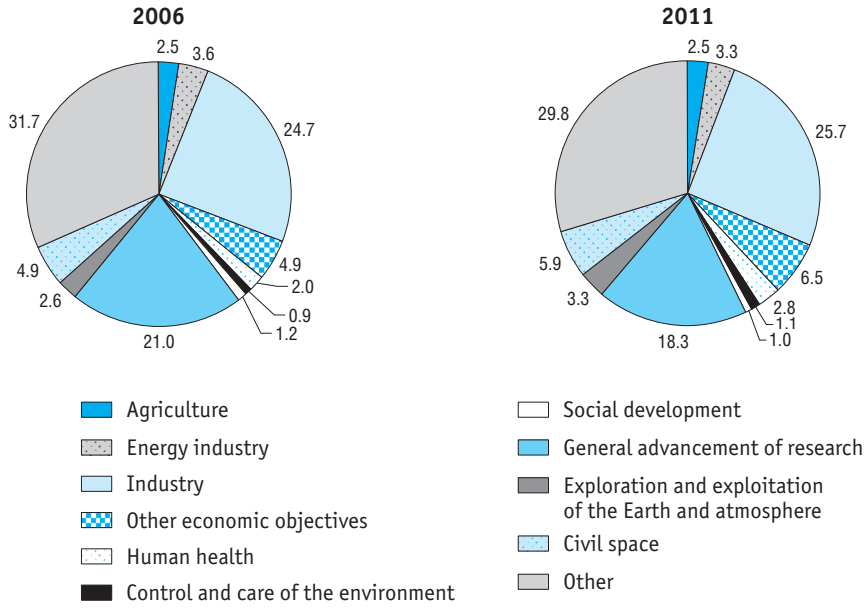
(thousand roubles)

	2004	2006	2008	2009	2010	2011
Gross domestic expenditure on R&D	**196039870.2**	**288805211.5**	**431073185.2**	**485834338.2**	**523377233.9**	**610426680.6**
Economic development	62878277.6	103033497.6	157814603.7	169117727.8	183113782.3	231941668.2
Agriculture, hunting and forestry	4850437.8	7248977.0	11198584.3	13065634.0	12090814.9	15011619.7
Production, distribution and rational use of energy	6887202.1	10267046.6	18583742.6	19690591.5	19174764.6	19913673.7
Industry	42465131.3	71319151.3	108227204.7	118806663.3	126029410.7	156695798.9
Increasing of economic efficiency and technological level of industry	8609286.7	8331516.8	15344911.2	12590931.7	14916168.9	19904782.4
Extraction and processing of non-energy minerals	568533.2	628547.3	1019563.3	958185.2	1279265.4	1359844.0
Manufacture of chemicals and chemical products	2782348.4	4194564.2	5382152.9	6099362.6	5839135.5	6835610.4
Manufacture of motor vehicles and other transport equipment	8144548.1	14450931.1	20101084.3	19308677.6	21495410.4	25640612.6
Electronics, manufacture of radio, television and communication equipment and apparatus	3724356.3	9281563.7	12307384.7	14509018.6	13389386.0	17546855.7
Software development	1497845.2	3355339.6	7291337.9	7196829.9	6740442.6	7701782.0
Manufacture of electrical machinery and apparatus	1003386.5	1292927.0	2589759.5	2057059.8	2879253.1	3179319.1
Manufacture of instruments	2428490.7	6600437.6	12682004.6	10399399.1	13466912.8	20205983.0
Manufacture of other machinery and equipment	5674390.0	6965389.1	10595335.5	12612240.5	13654259.2	15485756.9
Manufacture of textiles, clothing, and leather	21554.3	54077.2	105239.8	52464.5	97483.3	106648.1
Manufacture of food products and beverages	322130.6	296729.6	432249.3	1047231.1	565348.2	565873.8
Other sectors of industry	7688261.3	15867128.1	20376181.7	31975262.7	31706345.3	38162730.9

(continued)

	2004	2006	2008	2009	2010	2011
Construction	1811394.0	2697184.2	5569314.7	3514829.4	5513681.4	7294997.0
Transport	5103690.2	9011178.7	10419270.0	8862627.7	12686004.3	22041615.8
Communications	1476858.0	1709581.2	2354882.8	4466744.0	6704734.7	9211899.0
Infrastructure and general planning of land use	208058.4	430140.7	726580.4	380775.6	354546.0	916966.4
Services sector	75505.8	350237.9	735024.2	329862.3	559825.7	855097.7
Social objectives	5601896.8	11954593.3	17735503.9	23520636.0	24966176.4	29640390.9
Control and care of the environment	1301851.2	2595076.2	4365560.7	5563877.5	5950018.6	6638173.2
Protection and improvement of human health	3418698.2	5897030.0	9869611.2	13006918.4	14373675.7	17100379,3
Social structures and relationships	881347.4	3462487.1	3500332.0	4949840.1	4642482.1	5901838.4
General advancement of research	54591367.0	60629124.4	110853857.1	114239973.1	104294714.1	111947458.3
Exploration and exploitation of the Earth and atmosphere	4736960.1	7577493.4	12601082.0	15248532.6	19821817.2	20390660.8
Civil space	5227420.7	14018574.9	13810148.3	25872001.8	27503697.9	35752455.2
Other	63003948.0	91591927.9	118257990.2	137835466.9	163677046.0	180754047.2

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



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

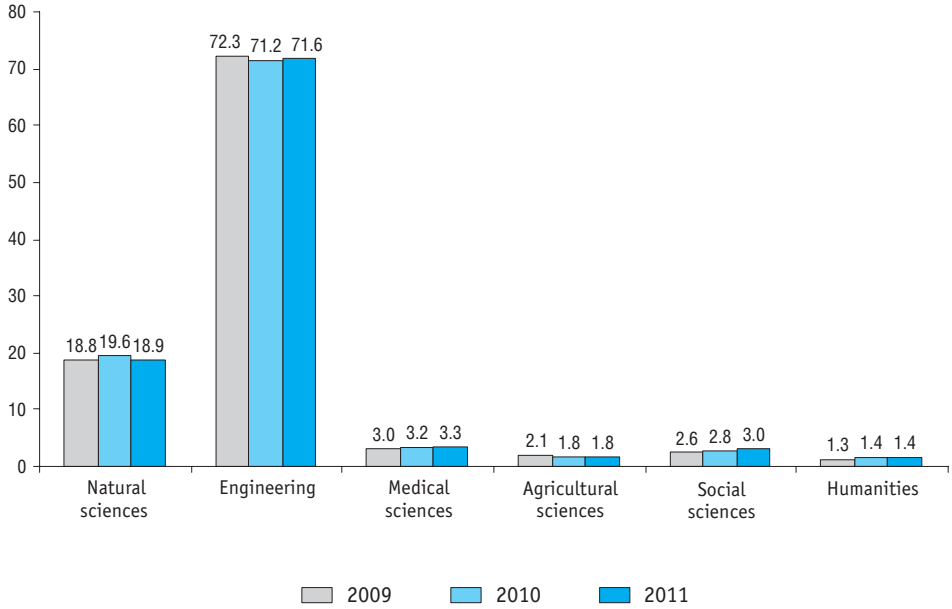
(thousand roubles)

	Total	Natural sciences	Engineering	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
Development	153736414.9	6373102.5	144804668.6	654163.7	802823.3	947838.1	153818.7
			2007				
Intramural current expenditure on R&D	**352917701.2**	**63174477.9**	**260543262.1**	**8876273.4**	**7077364.8**	**8595497.0**	**4650826.0**
Basic research	63590429.5	36632644.0	13765791.5	3448972.1	3657025.9	3063865.1	3022130.9
Applied research	54492567.8	15808735.6	27278921.5	4201063.8	2125810.4	4011607.7	1066428.8
Development	234834703.9	10733098.3	219498549.1	1226237.5	1294528.5	1520024.2	562266.3
			2008				
Intramural current expenditure on R&D	**410864983.6**	**78078037.1**	**296901936.2**	**11382107.9**	**8339624.5**	**10482105.9**	**5681172.0**
Basic research	77121264.3	45590599.9	14552606.2	4300297.3	4366212.4	3972507.2	4339041.3
Applied research	79885835.9	19007488.9	46977376.5	5769410.3	2226959.9	5105301.5	799298.8
Development	253857883.4	13479948.3	235371953.5	1312400.3	1746452.2	1404297.2	542831.9

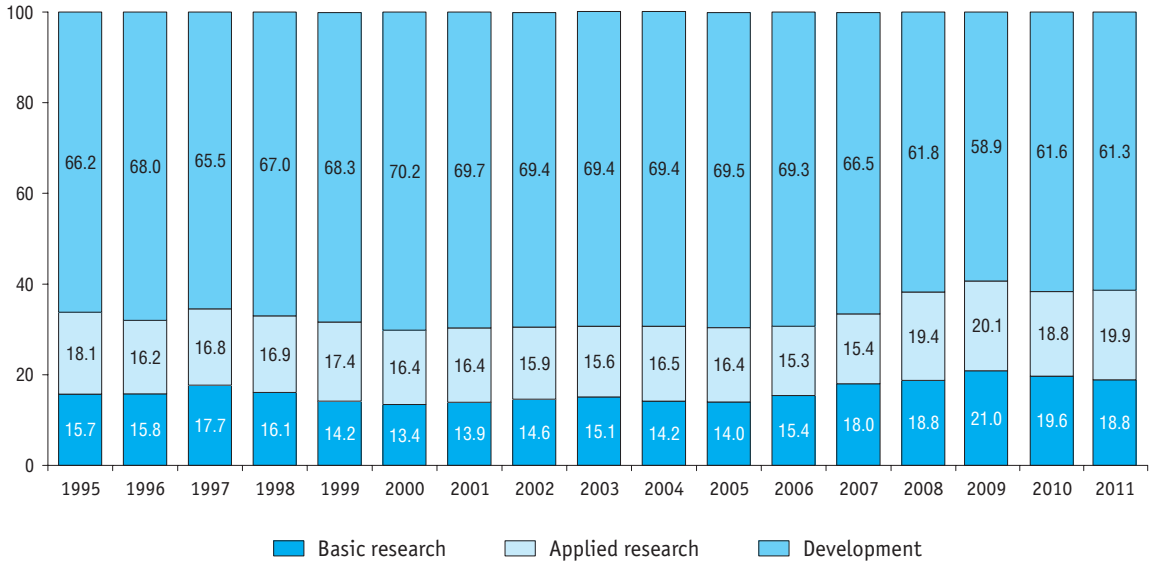
(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
			2009				
Intramural current expenditure on R&D	**461006216.2**	**86633250.8**	**333327965.5**	**13794449.8**	**9569659.4**	**11804063.6**	**5876827.1**
Basic research	96809127.3	52252859.5	22653573.5	6418092.0	5378449.3	5288288.4	4817864.6
Applied research	92557125.5	20782035.6	56915796.5	6418162.5	2629331.9	4948142.5	863656.5
Development	271639963.4	13598355.7	253758595.5	958195.3	1561878.2	1567632.7	195306.0
			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
Development	301558757.2	18257327.8	278913811.0	1183179.7	1539065.8	1478898.0	186474.9
			2011				
Intramural current expenditure on R&D	**568386749.7**	**107163564.9**	**406785676.0**	**18745756.1**	**10455768.3**	**17007802.7**	**8228181.7**
Basic research	106923986.6	58539607.1	22922743.3	7245779.3	5282967.4	6330795.2	6602094.3
Applied research	113096800.2	32019059.7	58033819.9	9856051.9	3396085.1	8564175.2	1227608.4
Development	348365962.9	16604898.1	325829112.8	1643924.9	1776715.8	2112832.3	398479.0

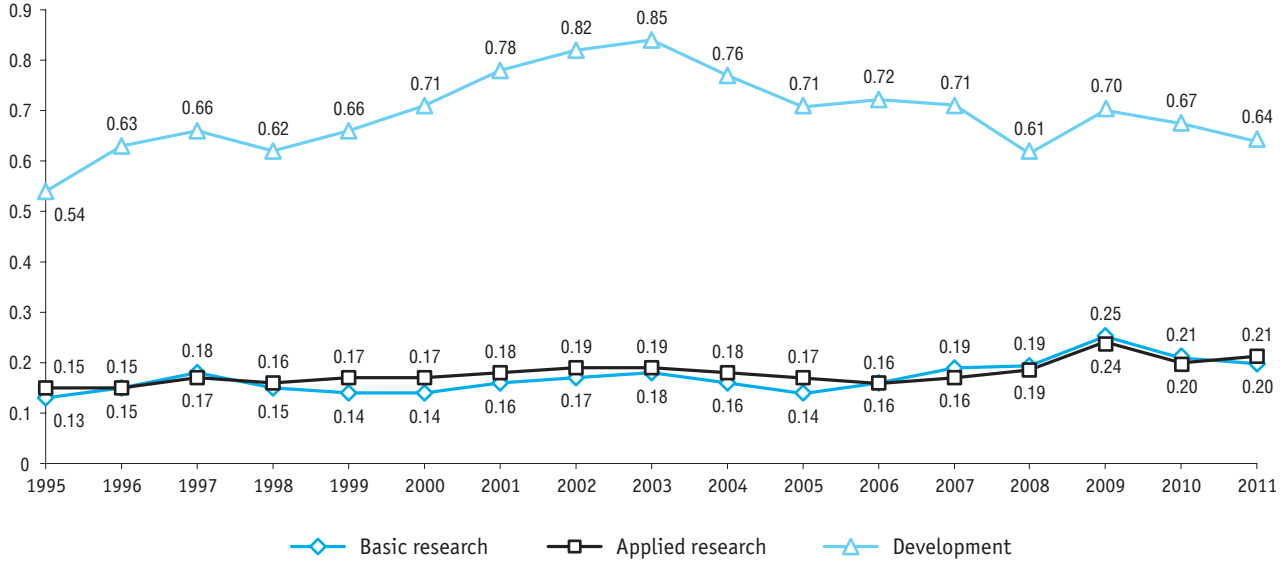
3.26. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D BY FIELD OF SCIENCE AND TECHNOLOGY



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



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



3.29. AVERAGE MONTHLY SALARY OF R&D PERSONNEL

	1995	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average monthly salary, *roubles, before 1998 – thousand roubles*	**305.3**	**4552.1**	**5712.8**	**6918.4**	**8672.0**	**10840.9**	**14683.4**	**19263.3**	**22104.3**	**25043.5**	**28387.5**
As a percentage of that:											
in the national economy (=100%)	64.6	104.4	103.9	102.7	101.4	101.9	108.0	111.4	118.6	119.5	121.5
in manufacturing (=100%)	67.3	102.5	102.0	101.0	103.0	106.3	114.0	120.0	133.3	131.3	130.3
in construction (=100%)	52.0	94.7	92.5	94.7	95.9	99.7	102.4	103.7	122.0	118.3	119.9

4. R&D Fixed Assets

4.1. R&D FIXED ASSETS

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						At current prices							
Fixed assets – total, *million roubles, 1995 – billion roubles*	**85087.6**	**237564.4**	**242806.4**	**252318.1**	**348418.0**	**362421.8**	**399515.9**	**509336.8**	**581965.9**	**612318.3**	**705048.1**	**741512.1**	**859318.0**
Per one employee, *thousand roubles, 1995 – million roubles*	80.2	267.6	274.2	289.7	405.9	431.8	491.3	631.1	726.4	804.4	949.6	1006.8	1168.7
Per one researcher, *thousand roubles, 1995 – million roubles*	164.0	557.7	575.1	608.5	850.3	902.8	1021.5	1309.6	1481.4	1629.4	1909.5	2010.0	2292.8
Machines and equipment, *million roubles, 1995 – billion roubles*	**26505.8**	**66938.3**	**72291.6**	**77868.9**	**105739.9**	**120533.3**	**142154.7**	**159452.5**	**196844.6**	**226391.7**	**288345.5**	**300165.9**	**348511.4**
Per one employee, *thousand roubles, 1995 – million roubles*	25.0	75.4	81.6	89.4	123.2	143.6	174.8	197.6	245.7	297.4	388.4	407.5	474.0
Per one researcher, *thousand roubles, 1995 – million roubles*	51.1	157.1	171.2	187.8	258.0	300.3	363.5	410.0	501.1	602.4	780.9	813.6	929.9

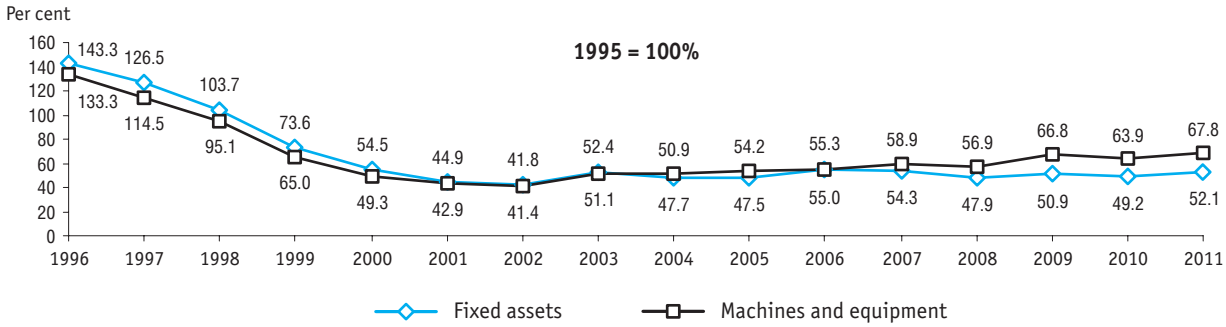
(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						At constant 1995 prices*							
Fixed assets – total, *million roubles, 1995 – billion roubles*	**85087.6**	**46336.0**	**38177.1**	**35572.8**	**44600.4**	**40589.3**	**40383.7**	**46805.4**	**46184.1**	**40766.9**	**43302.3**	**41857.9**	**44299.3**
Per one employee, *thousand roubles, 1995 – million roubles*	80.2	52.2	43.1	40.8	52.0	48.4	49.7	58.0	57.6	53.6	58.3	56.8	60.2
Per one researcher, *thousand roubles, 1995 – million roubles*	164.0	108.8	90.4	85.8	108.8	101.1	103.3	120.3	117.6	108.6	117.3	113.5	118.2
Machines and equipment, *million roubles, 1995 – billion roubles*	**26505.8**	**13056.0**	**11366.6**	**10978.3**	**13535.6**	**13499.1**	**14369.2**	**14652.9**	**15621.3**	**15072.7**	**17709.5**	**16944.2**	**17966.4**
Per one employee, *thousand roubles, 1995 – million roubles*	25.0	14.7	12.8	12.6	15.8	16.1	17.7	18.2	19.5	19.8	23.9	23.0	24.4
Per one researcher, *thousand roubles, 1995 – million roubles*	51.1	30.7	26.9	26.5	33.0	33.6	36.7	37.7	39.8	40.1	48.0	45.9	47.9

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

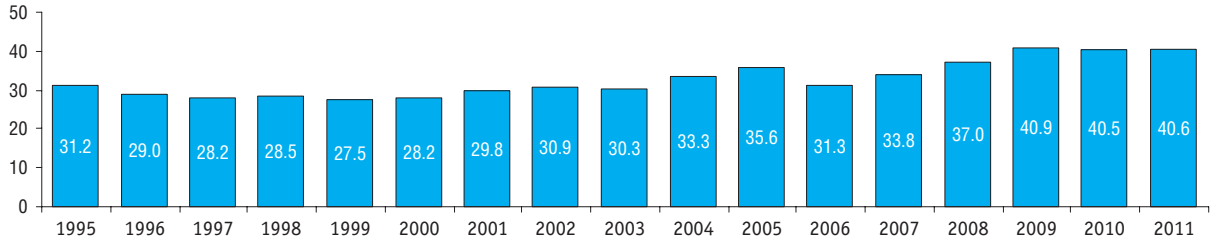
4.2. TRENDS IN VALUE OF R&D FIXED ASSETS*

(at constant 1995 prices)



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

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



4.4. R&D FIXED ASSETS BY OWNERSHIP OF INSTITUTIONS

(million roubles, 1995 – billion roubles)

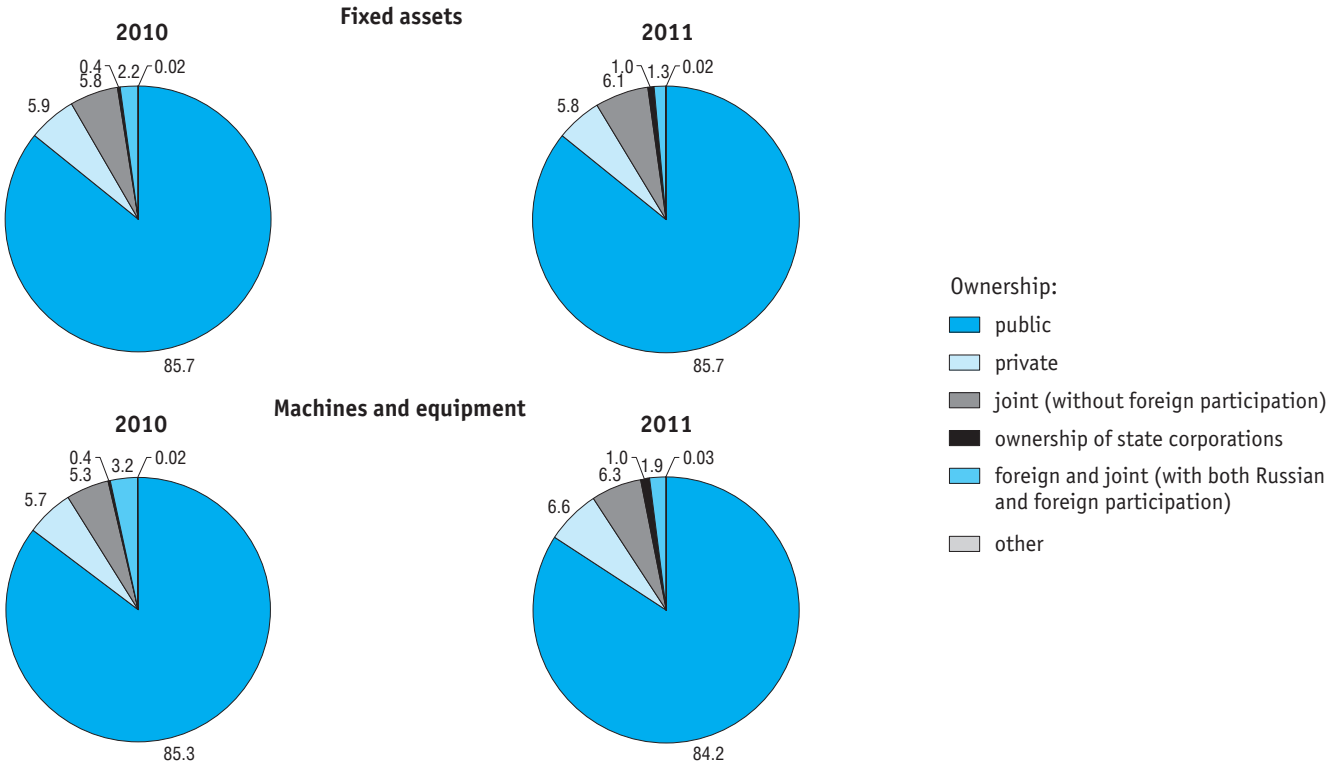
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						Fixed assets							
Total	**85087.6**	**237564.4**	**242806.4**	**252318.1**	**348418.0**	**362421.8**	**399515.9**	**509336.8**	**581965.9**	**612318.3**	**705048.1**	**741512.1**	**859318.0**
Russian ownership	85081.2	232793.0	237798.7	247059.1	342981.0	356206.2	393181.0	503968.3	570760.1	600596.0	696133.5	725165.1	847942.2
Public ownership	71686.4	194659.0*	197602.7	205543.4	298313.1	311757.9	344693.4	442539.7	504967.3	537366.1	619151.2	635491.6	736631.7
Federal	70561.9	191972.3	193718.1	202272.0	292911.8	304821.5	336223.9	430165.8	486643.7	518920.0	574713.9	617118.2	712172.1
Provincial	1124.5	2686.3	3884.7	3271.4	5401.3	6936.4	8469.5	11898.5	17526.8	17479.4	43454.1	18110.1	24452.1
Municipal ownership	190.0	541.7	8.5	10.8	25.6	3.9	28.2	22.0	32.9	34.7	40.7	35.9	74.7
Ownership of voluntary associations	77.5	221.8	25.7	31.3	34.1	34.1	38.9	43.3	90.0	85.4	82.4	82.1	98.7
Private ownership	1306.4	10499.1	11784.4	12416.6	12068.4	10468.3	17478.8	24052.8	25338.8	26957.6	30709.8	43615.5	49833.4
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	…	…	18.1
Ownership of consumer cooperatives**	…	0.09	0.9	0.9	0.9	1.0	0.9	0.06	0.9	0.9	1.6	1.7	5.5
Joint ownership	11820.9	26871.3	28376.5	29056.2	32538.9	33941.0	30940.7	37310.4	40330.3	36151.4	46147.9	42862.9	52606.5
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	38571.0	47524.3
Other	…	…	…	…	…	…	…	…	…	…	…	…	5082.1
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	3075.4	8673.7
Foreign ownership	0.04	49.0	81.5	81.2	59.6	75.5	114.9	126.0	225.1	216.2	124.3	1131.5	1063.7
Joint ownership (with both Russian and foreign participation)	6.4	4722.4	4926.2	5177.8	5377.4	6140.1	6220.1	5242.5	10980.6	11506.0	8790.3	15215.5	10312.1

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
						Machines and equipment							
Total	**26505.8**	**66938.3**	**72291.6**	**77868.9**	**105739.9**	**120533.3**	**142154.7**	**159452.5**	**196844.6**	**226391.7**	**288345.5**	**300165.9**	**348511.4**
Russian ownership	26503.0	65631.5	71008.2	76403.8	103958.6	118511.7	140294.5	157833.3	191984.4	221221.1	283264.4	290440.4	341846.2
Public ownership	21632.0	53434.4*	58670.2	62198.4	87983.1	102288.6	121662.2	134545.8	164900.6	194059.9	250646.7	256172.4	293528.4
Federal	21340.3	52750.5	57439.9	61150.5	85871.5	98656.7	117529.4	129240.8	156807.8	185556.4	215954.3	248766.8	284876.3
Provincial	291.7	683.5	1230.3	1047.9	2111.7	3631.9	4132.8	5304.1	8038.5	8379.1	34654.2	7284.9	8645.6
Municipal ownership	113.0	176.0	5.1	10.5	24.5	2.8	4.7	3.8	7.6	11.3	25.5	6.2	17.0
Ownership of voluntary associations	32.3	41.6	8.9	15.5	26.4	20.2	20.4	32.0	61.7	56.2	47.0	49.5	69.9
Private ownership	353.5	4235.7	4421.7	4901.5	4866.8	4297.6	8094.0	10567.1	10656.1	12278.4	15307.8	17150.5	22907.4
Ownership of Russian citizens permanently living abroad	…	…	…	…	…	…	…	…	…	…	…	…	17.0
Ownership of consumer cooperatives**	…	0.09	0.2	0.2	0.2	0.2	0.2	0.06	0.2	0.2	0.9	1.0	4.2
Joint ownership	4372.2	7743.7	7902.1	9277.8	11057.6	11902.3	10513.1	12684.7	16358.2	14815.2	17236.5	15944.0	21883.9
Joint ownership with a part of public ownership	…	…	…	…	…	…	…	…	…	…	…	13870.9	19476.7
Other	…	…	…	…	…	…	…	…	…	…	…	…	2407.1
Ownership of state corporations	…	…	…	…	…	…	…	…	…	…	…	1116.7	3418.5
Foreign ownership	0.03	48.2	76.9	81.1	51.3	57.2	61.0	77.6	128.3	119.6	83.7	630.0	611.0
Joint ownership (with both Russian and foreign participation)	2.8	1258.6	1206.5	1384.0	1729.9	1964.4	1792.2	1541.6	4731.9	5050.9	4997.4	9095.5	6054.2

* Details may not add up to the total because of shared ownership at some institutions.
** Until 2000, registered within institutions of private and joint Russian ownership.

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



4.6. R&D FIXED ASSETS BY ECONOMIC ACTIVITY

(million roubles)

	Fixed assets			Machines and equipment		
	2009	2010	2011	2009	2010	2011
Total	**705048.1**	**741512.1**	**859318.0**	**288345.5**	**300165.9**	**348511.4**
Agriculture, hunting and forestry	756.0	807.4	877.4	163.7	183.7	216.9
Fishing, aquaculture and service activities incidental to fishing	1.8	1.3	–	0.5	0.5	–
Mining and quarrying	55.5	138.4	165.6	46.4	134.7	157.6
Manufacturing	32875.9	45024.7	42135.9	19567.9	24122.8	23250.7
Electricity, gas and water supply	–	–	–	–	–	–
Construction	–	–	–	–	–	–
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	–	–	0.3	–	–	0.05
Transport and communications	627.1	325.3	288.5	503.8	169.4	138.5
Real estate, renting and business activities	523698.3	538758.2	619299.3	226835.8	227097.5	274921.4
Research and development	515275.5	529566.7	610259.5	222307.0	222192.7	271233.0
Other business activities	5695.7	5084.9	6559.8	2287.3	2408.0	2668.0
Public administration and defence; compulsory social security	–	–	–	–	–	–
Education	130568.8	140372.7	173320.6	35627.9	42532.7	42833.3
Higher education	130517.2	140371.8	173241.0	35597.1	42531.8	42800.4
Health and social services	13590.0	13845.1	14356.8	5295.3	5652.3	6070.5
Other community, social and personal service activities	2874.0	2239.0	8873.6	304.1	272.4	922.4
Recreational, cultural and sporting activities	2868.0	2229.7	8863.1	272.1	263.2	911.9

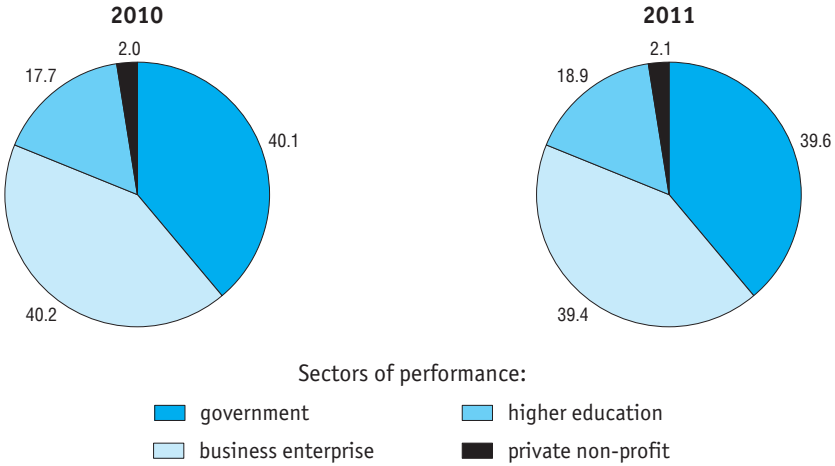
5. Sectors of R&D Performance

5.1. Aggregate Indicators

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
1996	4122	1202	2351	548	21
1997	4137	1223	2336	543	35
1998	4019	1212	2238	531	38
1999	4089	1221	2305	529	34
2000	4099	1247	2278	526	48
2001	4037	1248	2213	529	47
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

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

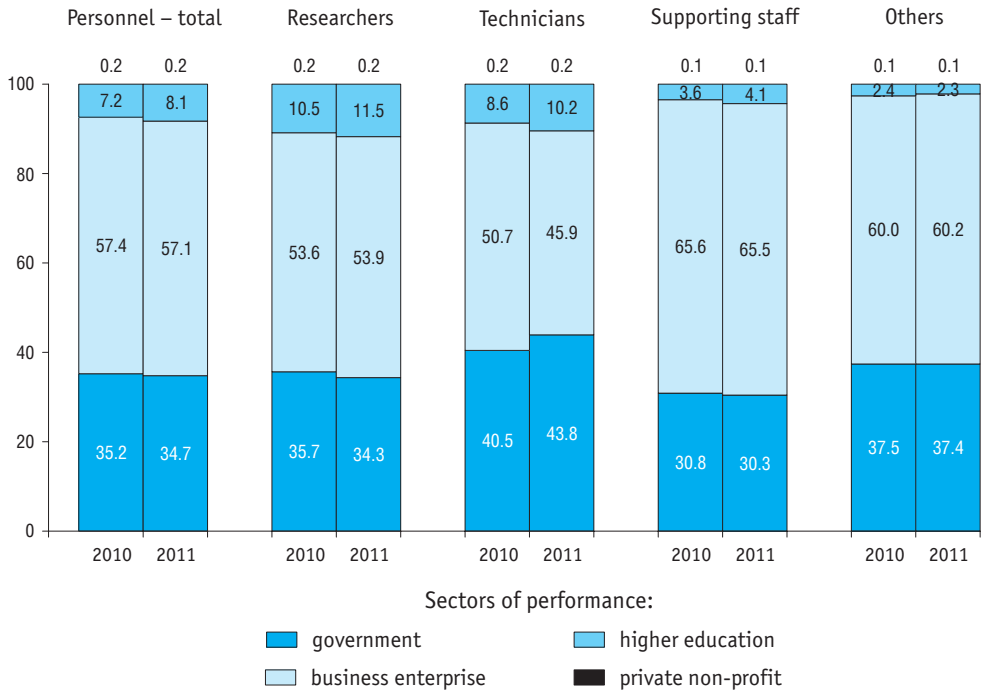


5.1.3. R&D PERSONNEL BY SECTOR OF PERFORMANCE AND OCCUPATION

(head-count)

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**1061044**	**887729**	**870878**	**858470**	**839338**	**813207**	**807066**	**801135**	**761252**	**742433**	**736540**	**735273**
Researchers	518690	425954	414676	409775	401425	391121	388939	392849	375804	369237	368915	374791
Technicians	101371	75184	74599	71729	69963	65982	66031	64569	60218	60045	59276	61562
Supporting staff	274925	240506	232636	229214	223356	215555	213579	208052	194769	186995	183713	178449
Others	166058	146085	148967	147752	144594	140549	138517	135665	130461	126156	124636	120471
Government sector	282166	255850	257462	256098	258078	272718	274802	272255	260854	260360	259007	254896
Researchers	146342	129725	131607	131906	132350	139378	138728	138169	132261	132955	131734	128717
Technicians	27178	25085	26281	25083	25223	25462	25667	26545	24531	24554	24009	26960
Supporting staff	66226	59706	56396	55782	57057	61448	62482	61031	58591	56846	56530	54131
Others	42420	41334	43178	43327	43448	46430	47925	46510	45471	46005	46734	45088
Business enterprise sector	726568	590646	568628	558668	537473	496706	486613	478401	451532	432415	423112	419752
Researchers	336671	267640	252990	248232	239172	221445	218702	219632	209579	201668	197785	202185
Technicians	70180	46535	44501	43137	41171	36837	36315	33340	31230	30613	30063	28235
Supporting staff	201122	175261	169465	166620	159650	147980	144966	140507	129496	123814	120485	116829
Others	118595	101210	101672	100679	97480	90444	86630	84922	81227	76320	74779	72503
Higher education sector	52065	40787	44135	43120	43414	43500	44473	49059	47595	48498	53290	59454
Researchers	35508	28325	29583	29346	29670	30111	30793	34162	33160	33847	38640	43121
Technicians	4010	3509	3771	3434	3534	3658	3972	4606	4349	4778	5095	6256
Supporting staff	7520	5463	6717	6695	6607	6098	5945	6282	6520	6198	6564	7345
Others	5027	3490	4064	3645	3603	3633	3763	4009	3566	3675	2991	2732
Private non-profit sector	245	446	653	584	373	283	1178	1420	1271	1160	1131	1171
Researchers	169	264	496	291	233	187	716	886	804	767	756	768
Technicians	3	55	46	75	35	25	77	78	108	100	109	111
Supporting staff	57	76	58	117	42	29	186	232	162	137	134	144
Others	16	51	53	101	63	42	199	224	197	156	132	148

5.1.4. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY OCCUPATION AND SECTOR OF PERFORMANCE

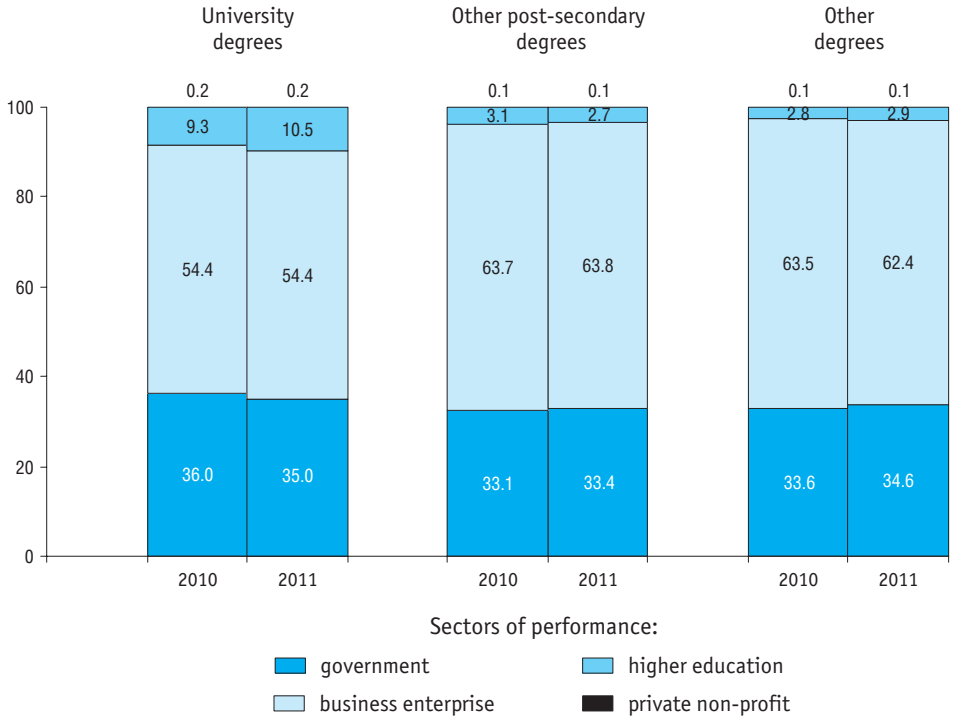


5.1.5. R&D PERSONNEL BY SECTOR OF PERFORMANCE AND EDUCATIONAL ATTAINMENT

(head-count)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
R&D personnel					
2005	813207	272718	496706	43500	283
2007	801135	272255	478401	49059	1420
2008	761252	260854	451532	47595	1271
2009	742433	260360	432415	48498	1160
2010	736540	259007	423112	53290	1131
2011	735273	254896	419752	59454	1171
University degrees					
2005	501718	177676	288649	35159	234
2007	513099	181228	290728	40025	1118
2008	495255	175017	280083	39160	995
2009	489076	177254	270449	40456	917
2010	493852	178026	268821	46112	893
2011	506330	176984	275431	52965	950
Other post-secondary degrees					
2005	134222	40495	89265	4430	32
2007	129360	40169	84326	4723	142
2008	121508	38221	78622	4523	142
2009	115042	37439	73054	4424	125
2010	109158	36091	69552	3394	121
2011	103873	34687	66267	2811	108
Other degrees					
2005	177267	54547	118792	3911	17
2007	158676	50858	103347	4311	160
2008	144489	47616	92827	3912	134
2009	138315	45667	88912	3618	118
2010	133530	44890	84739	3784	117
2011	125070	43225	78054	3678	113

5.1.6. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL BY EDUCATIONAL ATTAINMENT AND SECTOR OF PERFORMANCE

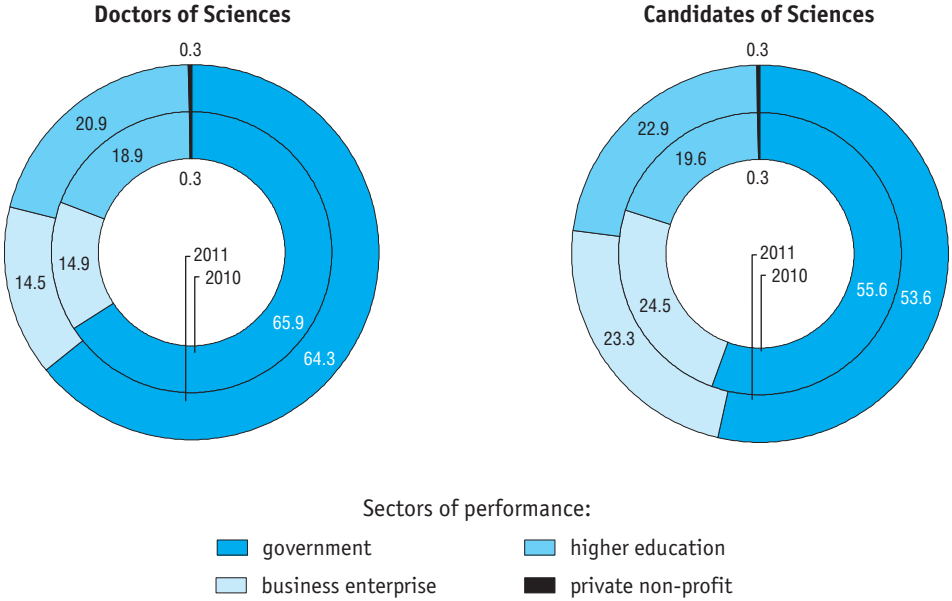


5.1.7. RESEARCHERS WITH SCIENTIFIC DEGREES BY SECTOR OF PERFORMANCE

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers with scientific degrees	**116465**	**105911**	**104414**	**102346**	**101806**	**99910**	**99428**	**99507**	**103725**	**101049**	**101275**	**105114**	**109493**
Doctors of Sciences	19330	21949	22262	22571	22936	23102	23410	23880	25213	25140	25295	26789	27675
Candidates of Sciences	97135	83962	82152	79775	78870	76808	76018	75627	78512	75909	75980	78325	81818
Government sector	61062	58901	58400	57938	58774	58568	60066	60054	61707	60369	61309	61194	61605
Doctors of Sciences	13358	14987	15157	15420	15885	16031	16511	16766	17415	17326	17554	17646	17789
Candidates of Sciences	47704	43914	43243	42518	42889	42537	43555	43288	44292	43043	43755	43548	43816
Business enterprise sector	41207	34775	33313	31732	30507	29048	26661	25958	26257	24844	23861	23169	23045
Doctors of Sciences	4348	4806	4750	4691	4583	4511	4222	4108	4446	4284	4093	3987	4018
Candidates of Sciences	36859	29969	28563	27041	25924	24537	22439	21850	21811	20560	19768	19182	19027
Higher education sector	14162	12113	12531	12530	12432	12212	12618	13153	15330	15479	15774	20423	24502
Doctors of Sciences	1617	2120	2310	2425	2447	2538	2654	2924	3252	3439	3568	5068	5774
Candidates of Sciences	12545	9993	10221	10105	9985	9674	9964	10229	12078	12040	12206	15355	18728
Private non-profit sector	34	122	170	146	93	82	83	342	431	357	331	328	341
Doctors of Sciences	7	36	45	35	21	22	23	82	100	91	80	88	94
Candidates of Sciences	27	86	125	111	72	60	60	260	331	266	251	240	247

5.1.8. PERCENTAGE DISTRIBUTION OF RESEARCHERS WITH SCIENTIFIC DEGREES BY SECTOR OF PERFORMANCE

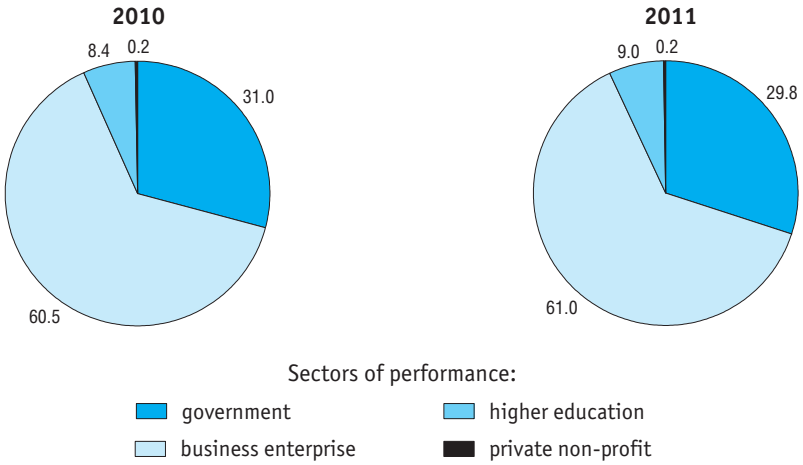


5.1.9. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE

(thousand roubles, 1995 – million roubles)

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
At current prices												
Gross domestic expenditure on R&D	**12149458.6**	**76697100.5**	**135004491.9**	**169862369.1**	**196039870.2**	**230785150.3**	**288805211.5**	**371080327.1**	**431073185.2**	**485834338.2**	**523377233.9**	**610426680.6**
Government sector	3165439.4	18748588.2	33020017.4	42944862.9	49545237.7	60158166.6	77950634.9	107984917.2	129871228.3	147023165.7	161988411.4	182135309.9
Business enterprise sector	8323907.6	54288781.4	94336248.9	116247853.0	135408690.9	156880029.0	192484851.0	238386207.4	271206280.5	303051131.5	316701679.9	372088873.4
Higher education sector	657374.0	3489342.2	7322943.2	10297745.0	10696125.8	13337987.1	17639173.8	23471870.9	28868566.7	34642216.7	43714007.3	55134893.9
Private non-profit sector	2737.6	170388.7	325282.4	371908.2	389815.8	408967.6	730551.8	1237331.6	1127109.7	1117824.3	973135.3	1067603.4
At constant 1989 prices												
Gross domestic expenditure on R&D	**2485.4**	**3321.2**	**4344.7**	**4803.6**	**4608.4**	**4547.5**	**4939.9**	**5577.5**	**5490.8**	**6067.0**	**5856.5**	**5898.6**
Government sector	647.6	811.9	1062.7	1214.5	1164.7	1185.4	1333.3	1623.1	1654.3	1836.0	1812.6	1760.0
Business enterprise sector	1702.8	2350.9	3035.9	3287.4	3183.1	3091.2	3292.4	3583.0	3454.5	3784.5	3543.8	3595.5
Higher education sector	134.5	151.1	235.7	291.2	251.4	262.8	301.7	352.8	367.7	432.6	489.2	532.8
Private non-profit sector	0.6	7.4	10.5	10.5	9.2	8.1	12.5	18.6	14.4	14.0	10.9	10.3

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
1996	0.97	0.25	0.67	0.05
1997	1.04	0.29	0.69	0.06
1998	0.95	0.25	0.66	0.05
1999	1.00	0.25	0.70	0.05
2000	1.05	0.26	0.74	0.05
2001	1.18	0.29	0.83	0.06
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	1.16	0.36	0.70	0.10
2011	1.12	0.33	0.68	0.10

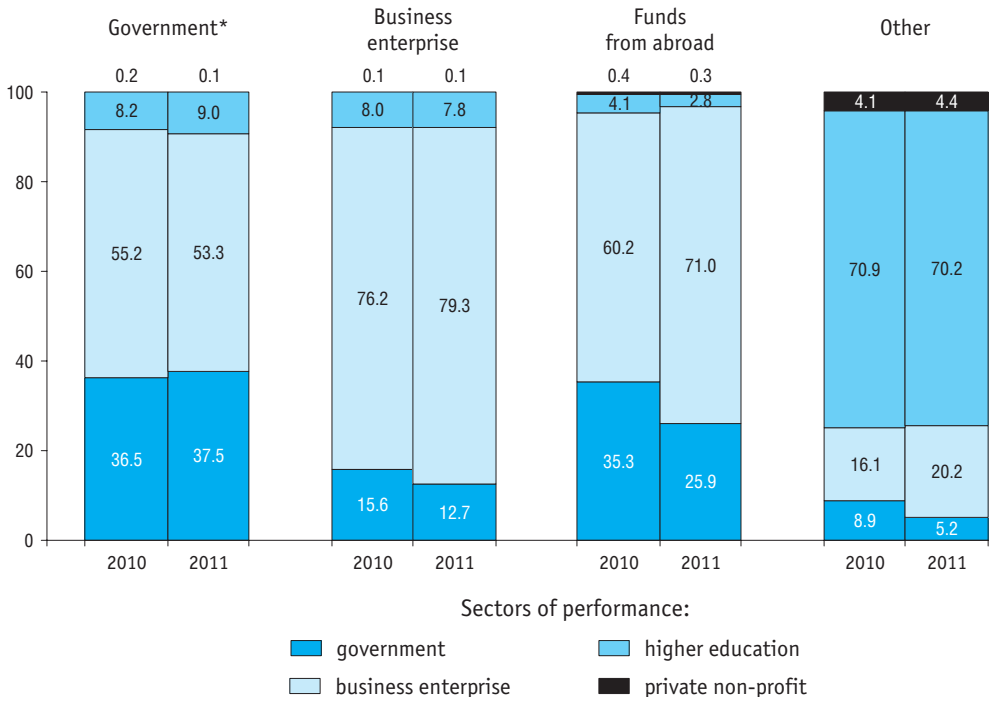
5.1.12. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOURCE OF FUNDS

(thousand roubles)

	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			2009			
Gross domestic expenditure on R&D	**485834338.2**	**322889237.6**	**129170972.3**	**1896167.0**	**471799.6**	**31406161.7**
Government sector	147023165.7	124027349.4	16292839.6	90578.1	38990.4	6573408.2
Business enterprise sector	303051131.5	173872629.4	104955691.5	60958.8	238908.1	23922943.7
Higher education sector	34642216.7	24181368.4	7769897.9	1741764.5	95595.8	853590.1
Private non-profit sector	1117824.3	807890.4	152543.3	2865.6	98305.3	56219.7
			2010			
Gross domestic expenditure on R&D	**523377233.9**	**368191779.8**	**133498976.0**	**2436564.1**	**682378.0**	**18567536.0**
Government sector	161988411.4	134275595.6	20873979.0	205154.5	73117.4	6560564.9
Business enterprise sector	316701679.9	203267110.6	101760706.5	75409.3	427247.1	11171206.4
Higher education sector	43714007.3	30017817.7	10724045.9	2154774.3	55055.8	762313.6
Private non-profit sector	973135.3	631255.9	140244.6	1226.0	126957.7	73451.1
			2011			
Gross domestic expenditure on R&D	**610426680.6**	**409449448.8**	**168957596.6**	**4664465.3**	**1209661.5**	**26145508.4**
Government sector	182135309.9	153529403.4	21528707.1	244802.6	61568.4	6770828.4
Business enterprise sector	372088873.4	218291814.8	134043614.4	376915.9	806970.4	18569557.9
Higher education sector	55134893.9	37047554.1	13224580.6	4030900.0	93584.3	738274.9
Private non-profit sector	1067603.4	580676.5	160694.5	11846.8	247538.4	66847.2

* Including federal budget appropriations, general university funds, and funds of government sector institutions (e.g. own funds of institutions).

5.1.13. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS AND SECTOR OF PERFORMANCE



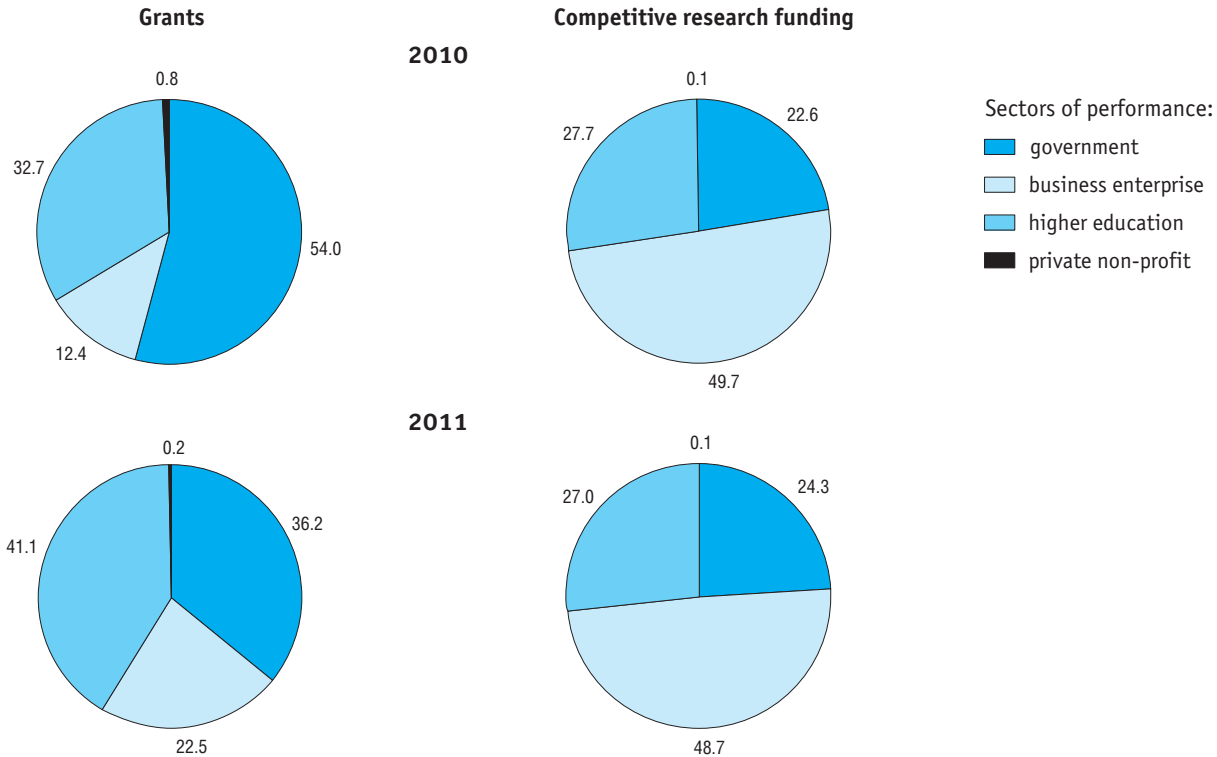
* Including federal budget appropriations, general university funds, and funds of government sector institutions (e.g. own funds of institutions).

5.1.14. GRANTS AND COMPETITIVE RESEARCH FUNDING BY SECTOR OF PERFORMANCE

(thousand roubles)

	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
From gross domestic expenditure on R&D					
Grants					
2010	7229208.6	3904467.5	899087.6	2366320.8	59332.7
2011	14240100.9	5158842.5	3198334.7	5858977.3	23946.4
Competitive research funding					
2010	49583862.2	11182780.8	24623093.5	13726017.8	51970.1
2011	70441797.9	17099699.4	34297320.7	18984549.9	60227.9

5.1.15. PERCENTAGE DISTRIBUTION OF GRANTS AND COMPETITIVE RESEARCH FUNDING BY SECTOR OF PERFORMANCE

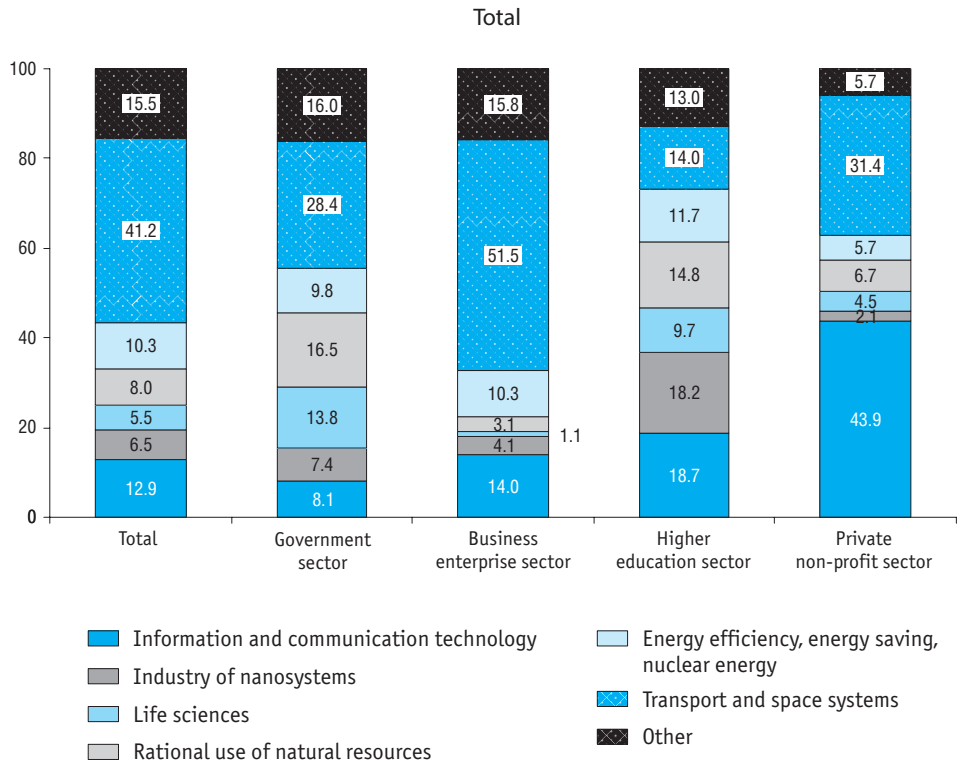


5.1.16. GROSS DOMESTIC EXPENDITURE ON R&D BY PRIORITY S&T AREA AND SECTOR OF PERFORMANCE: 2011

(thousand roubles)

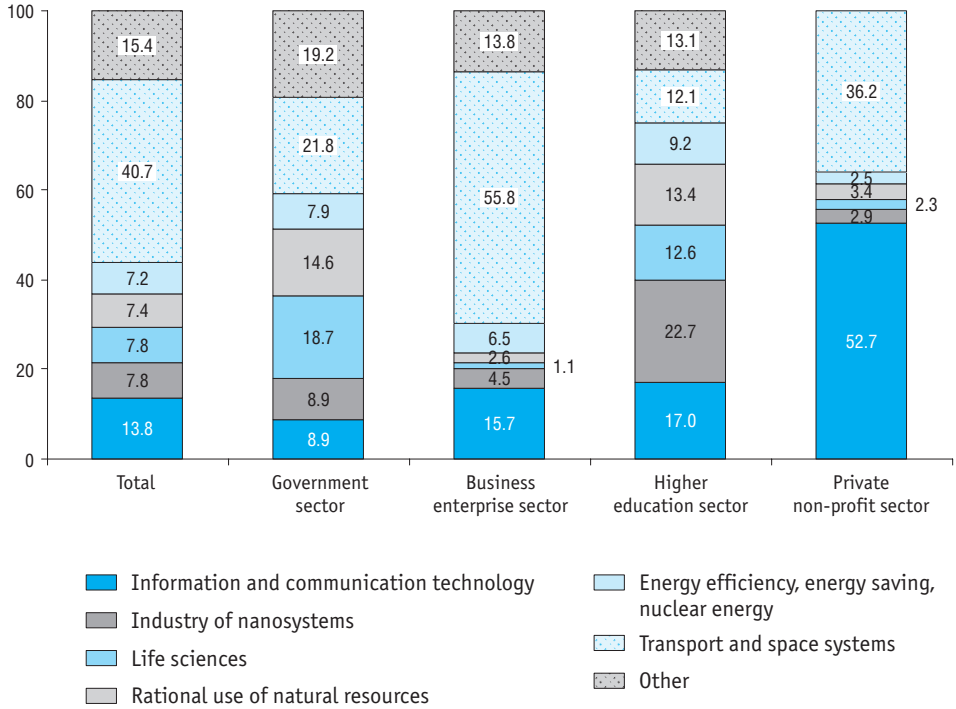
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Gross domestic expenditure on R&D by priority S&T area	**361603714.9**	**99868783.0**	**223223160.8**	**38030460.2**	**481310.9**
Information and communication technology	46609894.2	8049578.7	31253131.2	7096042.3	211142.0
Industry of nanosystems	23451735.9	7344359.9	9170992.1	6926418.9	9965.0
Life sciences	19918844.3	13746169.0	2477044.6	3673903.1	21727.6
Rational use of natural resources	29033462.5	16500779.7	6881002.2	5619206.5	32474.1
Energy efficiency, energy saving, nuclear energy	37318752.3	9821525.1	23028545.0	4441327.1	27355.1
Transport and space systems	148970064.6	28410944.4	115069310.0	5338598.6	151211.6
Of which financed from the federal budget	**204909268.0**	**63630154.6**	**119607066.2**	**21332059.2**	**339988.0**
Information and communication technology	28242303.7	5663397.5	18773166.3	3626631.6	179108.3
Industry of nanosystems	15952253.1	5665268.1	5433790.3	4843229.7	9965.0
Life sciences	15889603.4	11893233.5	1300402.1	2687980.8	7987.0
Rational use of natural resources	15249506.2	9315032.7	3070221.6	2852846.8	11405.1
Energy efficiency, energy saving, nuclear energy	14720916.9	4999303.6	7760296.6	1952776.5	8540.2
Transport and space systems	83327383.0	13871530.3	66761576.1	2571294.2	122982.4

5.1.17. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY PRIORITY S&T AREA AND SECTOR OF PERFORMANCE: 2011

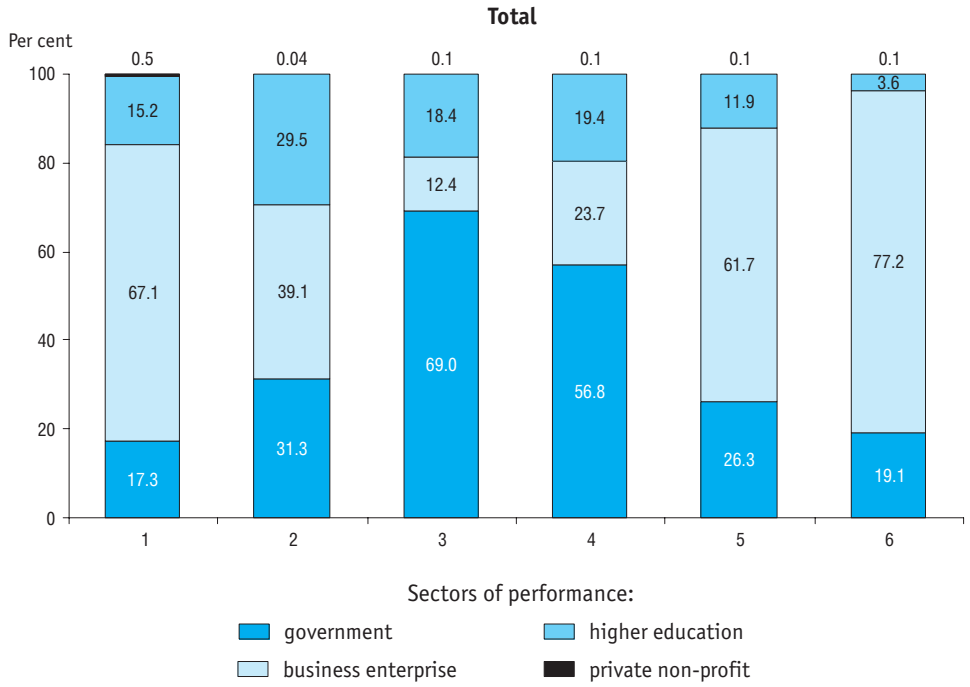


(continued)

Percentage distribution of gross domestic expenditure on R&D financed from the federal budget



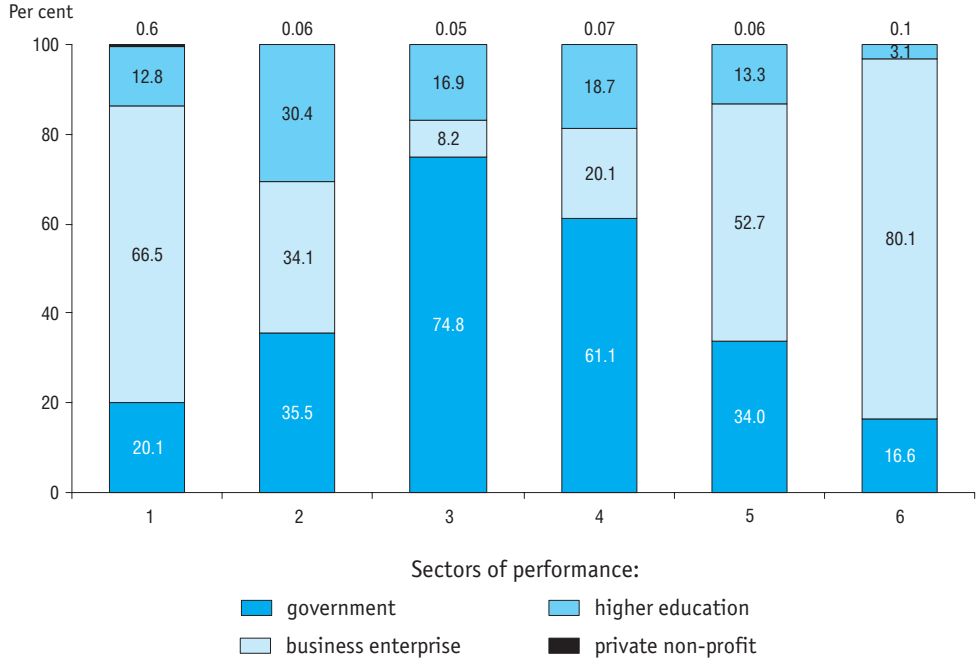
5.1.18. SHARE OF SECTORS OF PERFORMANCE IN GROSS DOMESTIC EXPENDITURE ON R&D BY SELECTED PRIORITY S&T AREA: 2011



1 – Information and communication technology
2 – Industry of nanosystems
3 – Life sciences
4 – Rational use of natural resources
5 – Energy efficiency, energy saving, nuclear energy
6 – Transport and space systems

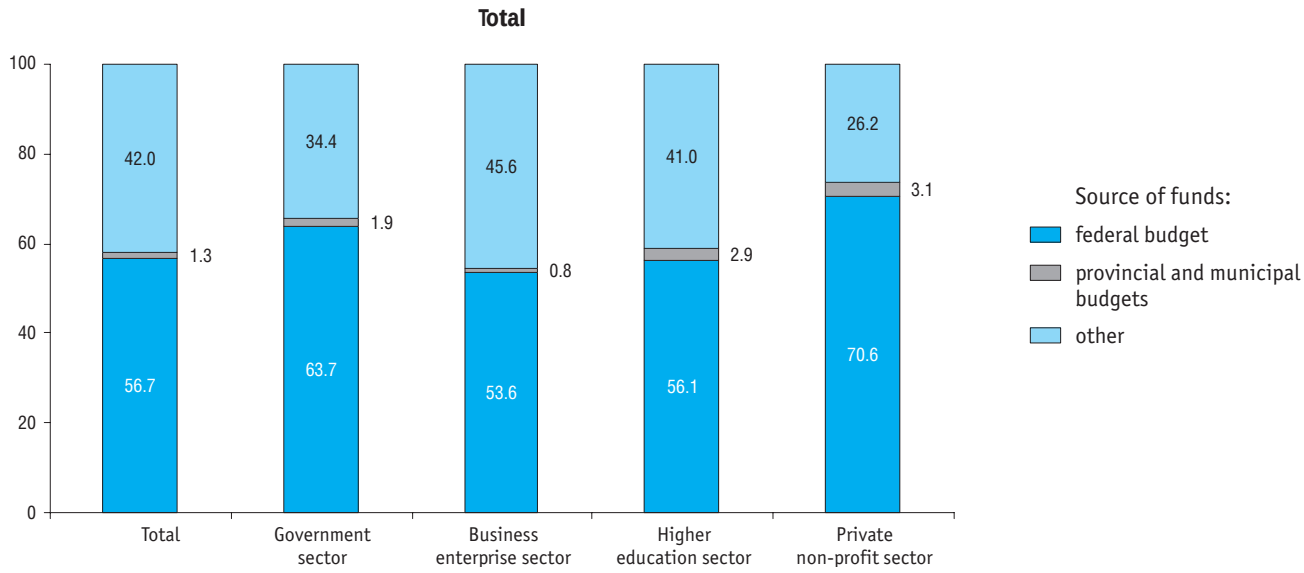
(continued)

Share of sectors of performance in gross domestic expenditure on R&D financed from the federal budget



1 – Information and communication technology
2 – Industry of nanosystems
3 – Life sciences
4 – Rational use of natural resources
5 – Energy efficiency, energy saving, nuclear energy
6 – Transport and space systems

5.1.19. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY PRIORITY S&T AREA AND SOURCE OF FUNDS: 2011



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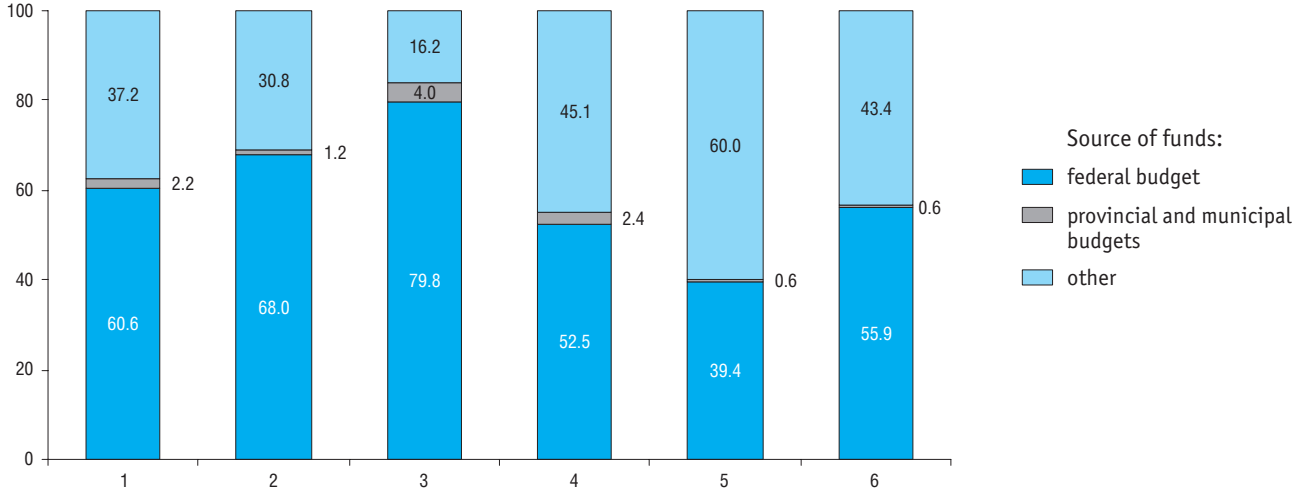
Percentage distribution of gross domestic expenditure on R&D by selected priority S&T area and source of funds



1 – Information and communication technology
2 – Industry of nanosystems
3 – Life sciences
4 – Rational use of natural resources
5 – Energy efficiency, energy saving, nuclear energy
6 – Transport and space systems

5.1.20. GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOCIO-ECONOMIC OBJECTIVE

(thousand roubles)

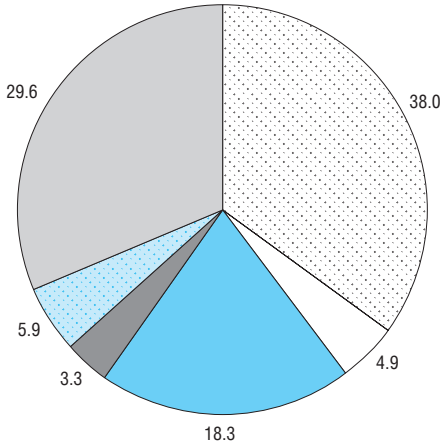
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
		2008			
Gross domestic expenditure on R&D	**431073185.2**	**129871228.3**	**271206280.5**	**28868566.7**	**1127109.7**
Economic development	157814603.7	25903022.4	121499877.0	10333925.5	77778.8
Social objectives	17735503.9	10497875.9	3161362.9	3928770.2	147494.9
General advancement of research	110853857.1	58886330.0	39822028.1	11645596.7	499902.3
Exploration and exploitation of the Earth and atmosphere	12601082.0	6584643.0	5240102.0	686608.9	89728.1
Civil space	13810148.3	3771383.7	9741148.8	202156.2	95459.6
Other	118257990.2	24227973.3	91741761.7	2071509.2	216746.0
		2009			
Gross domestic expenditure on R&D	**485834338.2**	**147023165.7**	**303051131.5**	**34642216.7**	**1117824.3**
Economic development	169117727.8	25587588.1	131860762.0	11580045.6	89332.1
Social objectives	23520636.0	13796328.2	5194538.4	4402823.1	126946.3
General advancement of research	114239973.1	59185031.3	39545144.2	15051470.5	458327.1
Exploration and exploitation of the Earth and atmosphere	15248532.6	9276605.0	4737759.1	1137086.6	97081.9
Civil space	25872001.8	5939260.4	19467394.7	381592.3	83754.4
Other	137835466.9	33238352.7	102245533.1	2089198.6	262382.5

(continued)

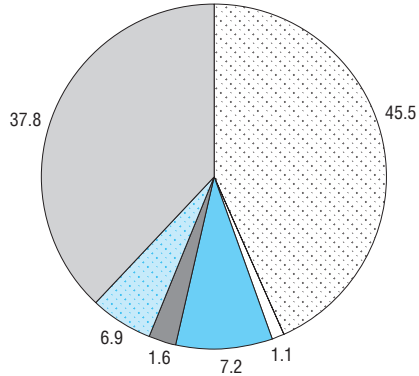
	Total	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
		2010			
Gross domestic expenditure on R&D	**523377233.9**	**161988411.4**	**316701679.9**	**43714007.3**	**973135.3**
Economic development	183113782.3	27363386.8	137277406.4	18388324.5	84664.6
Social objectives	24966176.4	15678573.3	3428751.4	5715218.0	143633.7
General advancement of research	104294714.1	60344393.8	29350303.3	14265983.6	334033.4
Exploration and exploitation of the Earth and atmosphere	19821817.2	10992645.7	7298359.0	1425201.8	105610.7
Civil space	27503697.9	7745311.8	18981106.6	763424.2	13855.3
Other	163677046.0	39864100.0	120365753.2	3155855.2	291337.6
		2011			
Gross domestic expenditure on R&D	**610426680.6**	**182135309.9**	**372088873.4**	**55134893.9**	**1067603.4**
Economic development	231941668.2	37298989.6	169331843.7	25175184.0	135650.9
Social objectives	29640390.9	18275876.7	4224886.0	7012531.8	127096.4
General advancement of research	111947458.3	67584899.6	26713553.5	17227621.4	421383.8
Exploration and exploitation of the Earth and atmosphere	20390660.8	12525500.2	5824163.0	1932518.8	108478.8
Civil space	35752455.2	9370439.0	25516406.5	849056.0	16553.7
Other	180754047.2	37079604.8	140478020.7	2937981.9	258439.8

5.1.21. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE AND SOCIO-ECONOMIC OBJECTIVE: 2011

Total – 610 426.7 million roubles



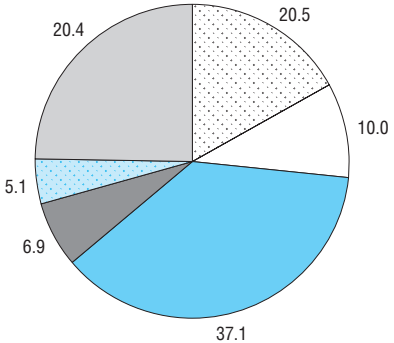
Business enterprise sector – 372 088.9 million roubles



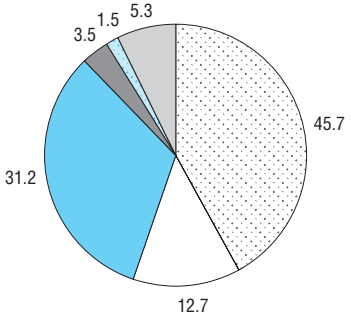
- Economic development
- Social objectives
- General advancement of research
- Exploration and exploitation of the Earth and atmosphere
- Civil space
- Other

(continued)

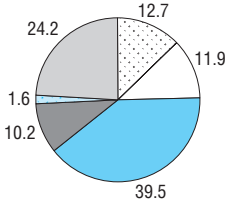
Government sector – 182 135.3 million roubles



Higher education sector – 55 134.9 million roubles



Private non-profit sector – 1067.6 million roubles



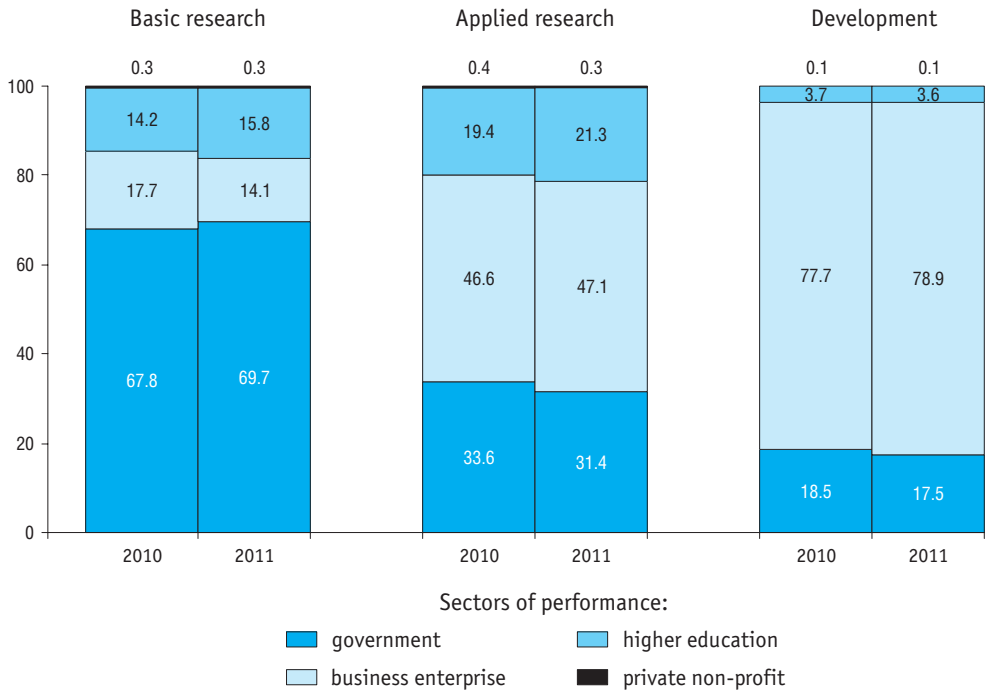
- Economic development
- Social objectives
- General advancement of research
- Exploration and exploitation of the Earth and atmosphere
- Civil space
- Other

5.1.22. 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
2007	352917701.2	102247576.2	226211577.7	23227988.8	1230558.5
2008	410864983.6	122630304.7	258764246.7	28355126.5	1115305.7
2009	461006216.2	138303922.9	287718749.5	33871885.4	1111658.4
2010	489450798.7	151825126.6	294103827.7	42552245.4	969599.0
2011	568386749.7	170811017.0	343121369.6	53389079.3	1065283.8
Basic research					
2005	31022855.8	24586195.8	2591506.7	3841327.6	3825.7
2007	63590429.5	44963077.6	10778877.0	7613268.3	235206.6
2008	77121264.3	55980558.1	11469378.1	9500293.6	171034.5
2009	96809127.3	63843573.1	17916877.3	14799057.5	249619.4
2010	95881364.3	65041375.9	16935403.4	13647906.8	256678.2
2011	106923986.6	74527944.1	15100475.9	16943421.4	352145.2
Applied research					
2005	36360266.9	10603039.3	20026408.8	5405410.3	325408.5
2007	54492567.8	17821178.5	26694911.0	9413669.3	562809.0
2008	79885835.9	22831808.4	44593566.0	11789234.9	671226.6
2009	92557125.5	26135931.3	54351166.0	11450223.9	619804.3
2010	92010677.2	30948555.6	42872394.0	17804762.0	384965.6
2011	113096800.2	35457277.1	53220149.5	24053848.5	365525.1
Development					
2005	153736414.9	21153092.6	128610778.1	3897554.6	74989.6
2007	234834703.9	39463320.1	188737789.7	6201051.2	432542.9
2008	253857883.4	43817938.2	202701302.6	7065598.0	273044.6
2009	271639963.4	48324418.5	215450706.2	7622604.0	242234.7
2010	301558757.2	55835195.1	234296030.3	11099576.6	327955.2
2011	348365962.9	60825795.8	274800744.2	12391809.4	347613.5

5.1.23. PERCENTAGE DISTRIBUTION OF INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY AND SECTOR OF PERFORMANCE



5.1.24. 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
2006	10840.9	9678.8	11744.8	8348.7	9409.1
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

5.2. Government Sector

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

	2005	2006	2007	2008	2009	2010	2011
Total	**1282**	**1341**	**1483**	**1429**	**1406**	**1400**	**1457**
Research institutes	1145	1126	1153	1128	1126	1124	1109
Design organisations	62	70	94	73	60	61	65
Construction project and exploration organisations	6	7	4	5	5	5	6
Experimental enterprises	14	34	40	37	35	30	33
Others	55	104	192	186	180	180	244

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

(head-count)

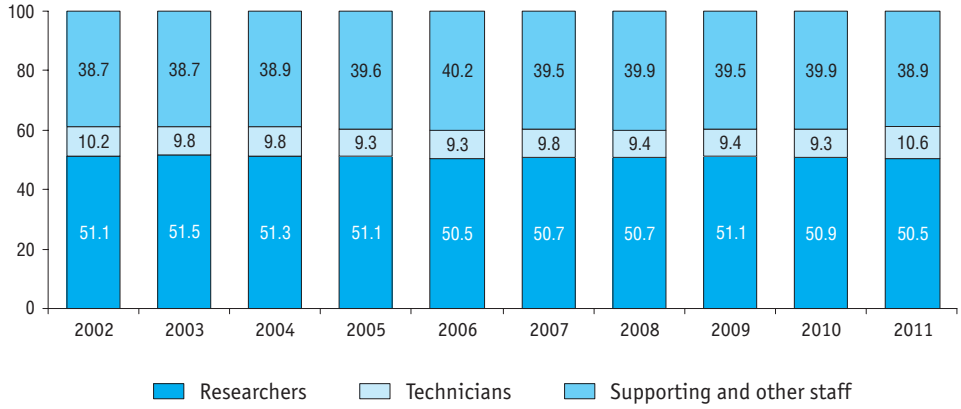
	2005	2006	2007	2008	2009	2010	2011
Total	**272718**	**274802**	**272255**	**260854**	**260360**	**259007**	**254896**
Research institutes	248214	248736	232732	223190	223922	222613	219220
Design organisations	21499	17384	29725	27021	26507	26473	23290
Construction project and exploration organisations	159	1517	1405	1442	1418	1419	1390
Experimental enterprises	367	960	873	694	648	631	957
Others	2479	6205	7520	8507	7865	7871	10039

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

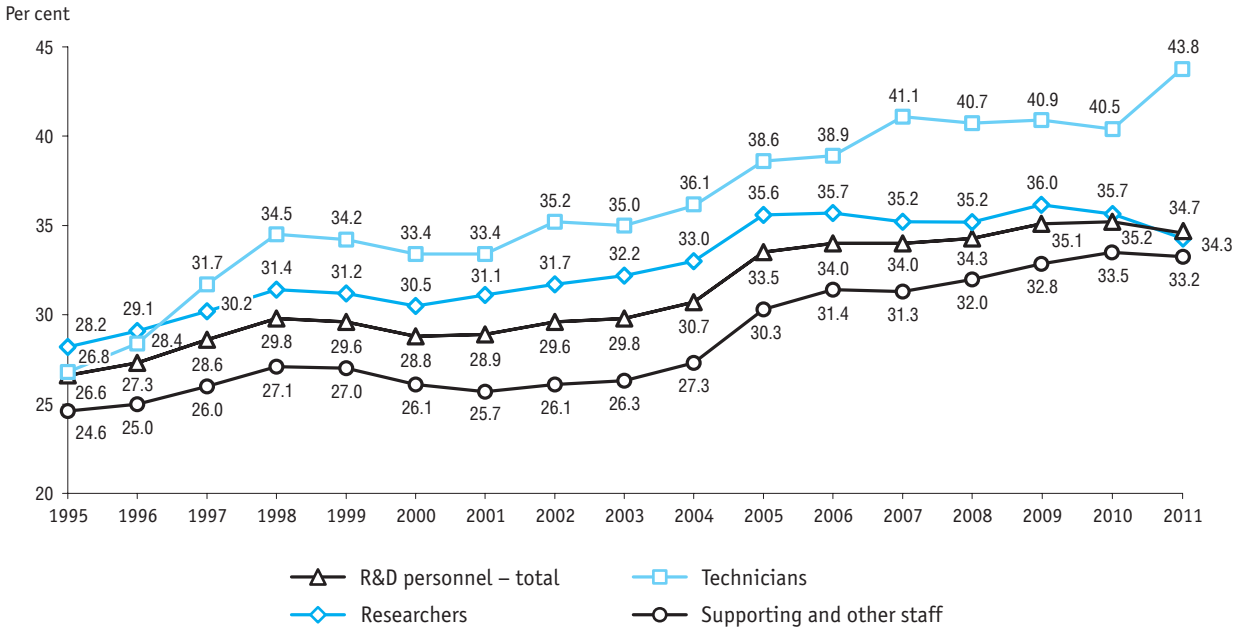
(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**282166**	**255850**	**256137**	**257462**	**256098**	**258078**	**272718**	**274802**	**272255**	**260854**	**260360**	**259007**	**254896**
Researchers	146342	129725	131190	131607	131906	132350	139378	138728	138169	132261	132955	131734	128717
Technicians	27178	25085	25182	26281	25083	25223	25462	25667	26545	24531	24554	24009	26960
Supporting staff	66226	59706	58811	56396	55782	57057	61448	62482	61031	58591	56846	56530	54131
Others	42420	41334	40954	43178	43327	43448	46430	47925	46510	45471	46005	46734	45088

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



5.2.5. SHARE OF THE GOVERNMENT SECTOR IN R&D PERSONNEL TOTAL BY OCCUPATION



5.2.6. R&D PERSONNEL IN THE GOVERNMENT SECTOR BY EDUCATIONAL ATTAINMENT

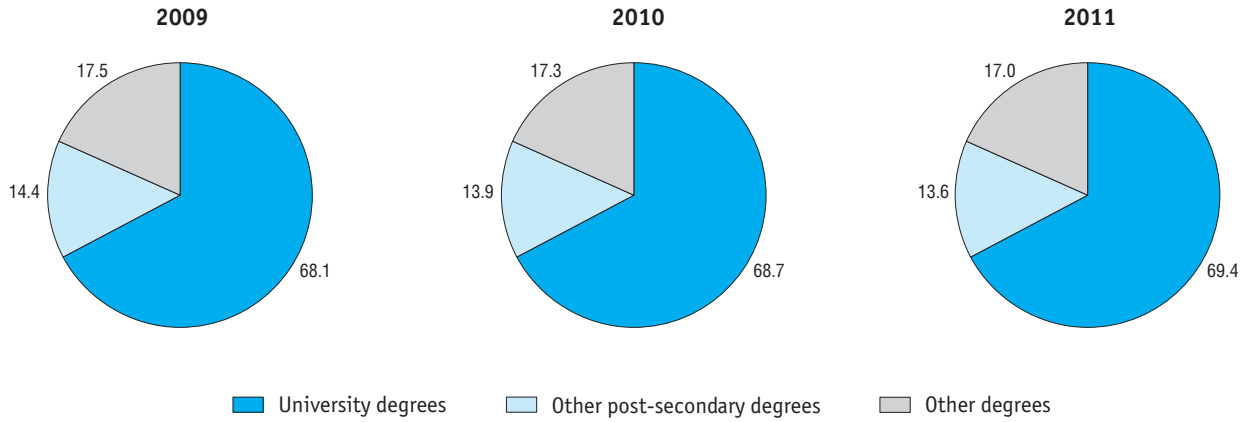
(head-count)

	Total	University degrees	Other post-secondary degrees	Other degrees
R&D personnel				
2005	272718	177676	40495	54547
2007	272255	181228	40169	50858
2008	260854	175017	38221	47616
2009	260360	177254	37439	45667
2010	259007	178026	36091	44890
2011	254896	176984	34687	43225
Researchers				
2005	139378	139378	–	–
2007	138169	138169	–	–
2008	132261	132261	–	–
2009	132955	132955	–	–
2010	131734	131734	–	–
2011	128717	128717	–	–
Technicians				
2005	25462	7802	12177	5483
2007	26545	8714	12125	5706
2008	24531	8197	11231	5103
2009	24554	8633	10889	5032
2010	24009	9110	10155	4744
2011	26960	10736	10629	5595

(continued)

	Total	University degrees	Other post-secondary degrees	Other degrees
Supporting staff				
2005	61448	19119	15834	26495
2007	61031	21311	15385	24335
2008	58591	21161	15143	22287
2009	56846	21472	14633	20741
2010	56530	21762	14287	20481
2011	54131	21624	12916	19591
Others				
2005	46430	11377	12484	22569
2007	46510	13034	12659	20817
2008	45471	13398	11847	20226
2009	46005	14194	11917	19894
2010	46734	15420	11649	19665
2011	45088	15907	11142	18039

5.2.7. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE GOVERNMENT SECTOR BY EDUCATIONAL ATTAINMENT

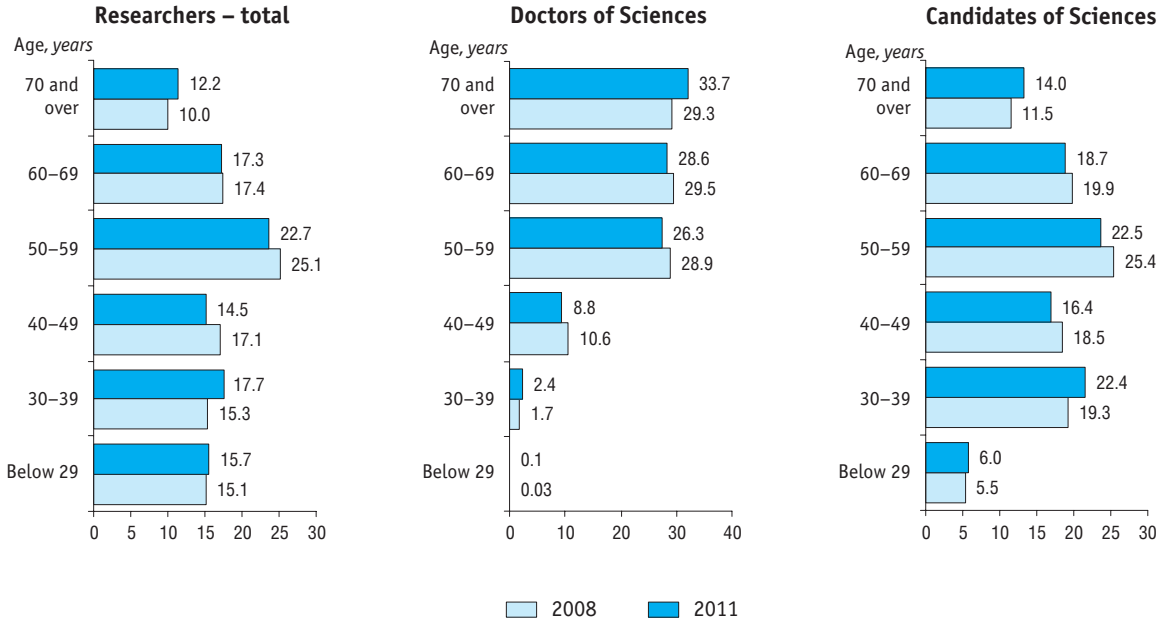


5.2.8. RESEARCHERS IN THE GOVERNMENT SECTOR BY GENDER AND AGE GROUP

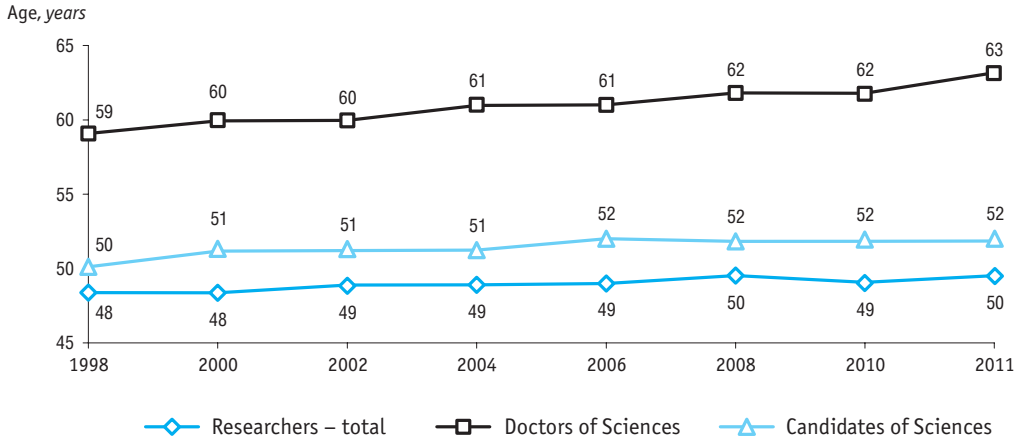
(head-count)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	**132261**	**17326**	**43043**	**128717**	**17789**	**43816**
Age, *years:*						
below 29	19971	5	2348	20256	18	2632
30–39	20242	289	8296	22721	432	9831
40–49	22644	1838	7969	18626	1563	7176
50–59	33206	5015	10937	29190	4687	9853
60–69	23031	5106	8553	22273	5090	8202
70 and over	13167	5073	4940	15651	5999	6122
Male	72653	13078	23696	70688	13194	23725
Age, *years:*						
below 29	11530	2	1354	11598	15	1590
30–39	9970	209	4091	11641	283	4851
40–49	10894	1307	3946	9012	1049	3387
50–59	17556	3656	6195	15179	3270	5366
60–69	13688	4001	4974	12931	3946	4829
70 and over	9015	3903	3136	10327	4631	3702
Female	59608	4248	19347	58029	4595	20091
Age, *years:*						
below 29	8441	3	994	8658	3	1042
30–39	10272	80	4205	11080	149	4980
40–49	11750	531	4023	9614	514	3789
50–59	15650	1359	4742	14011	1417	4487
60–69	9343	1105	3579	9342	1144	3373
70 and over	4152	1170	1804	5324	1368	2420

5.2.9. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE GOVERNMENT SECTOR BY AGE GROUP



5.2.10. AVERAGE AGE OF RESEARCHERS IN THE GOVERNMENT SECTOR

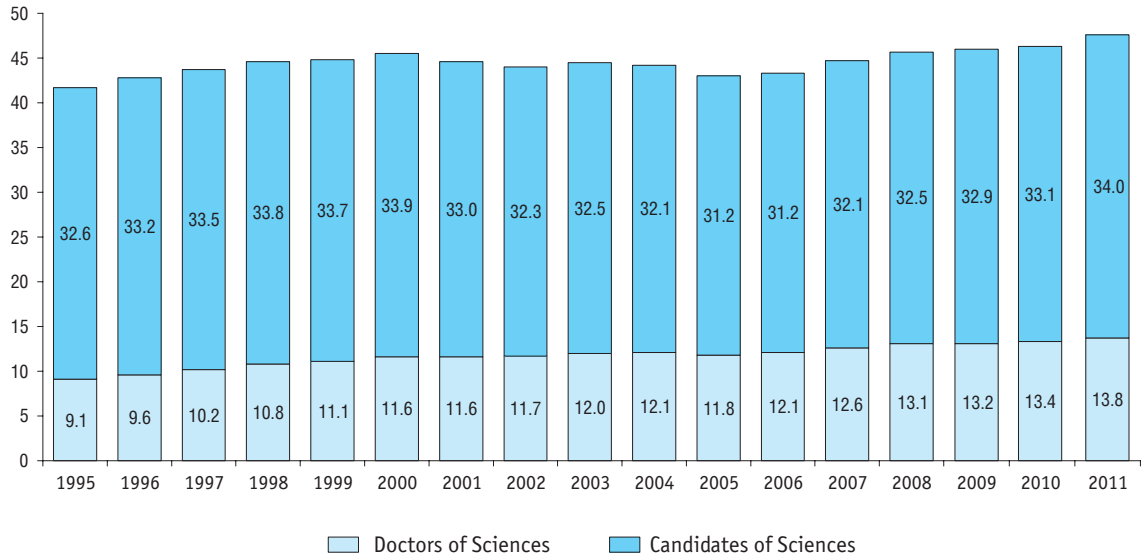


5.2.11. RESEARCHERS WITH SCIENTIFIC DEGREES IN THE GOVERNMENT SECTOR

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers with scientific degrees	**61062**	**58901**	**58400**	**57938**	**58774**	**58568**	**60066**	**60054**	**61707**	**60369**	**61309**	**61194**	**61605**
Doctors of Sciences	13358	14987	15157	15420	15885	16031	16511	16766	17415	17326	17554	17646	17789
Candidates of Sciences	47704	43914	43243	42518	42889	42537	43555	43288	44292	43043	43755	43548	43816

5.2.12. RESEARCHERS WITH SCIENTIFIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE GOVERNMENT SECTOR

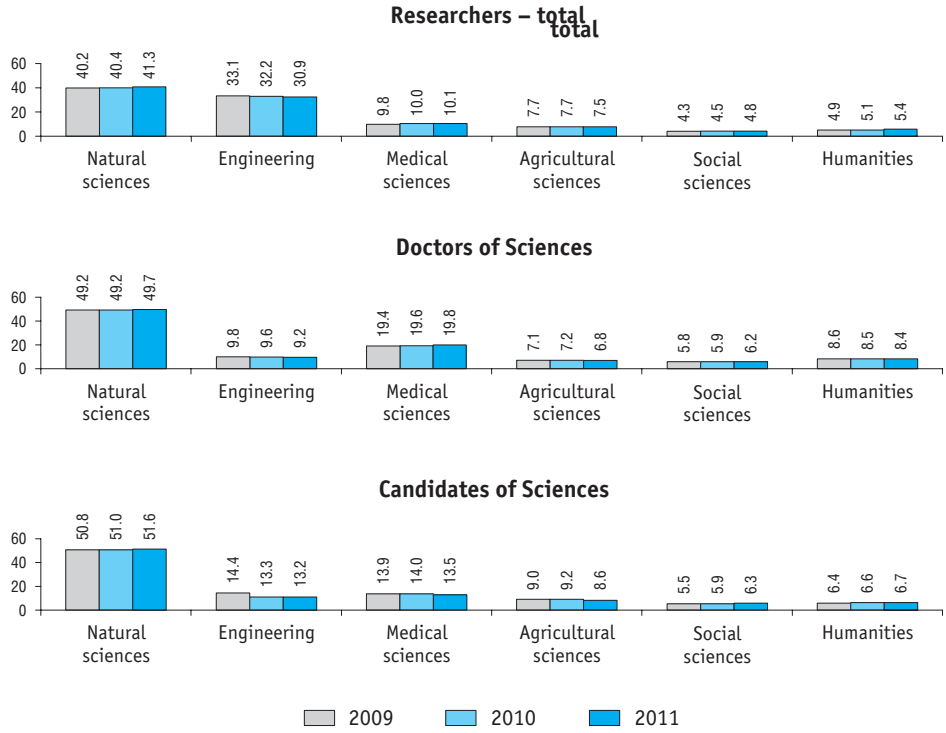


5.2.13. RESEARCHERS IN THE GOVERNMENT SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	2008			2009			2010			2011		
	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**	**132955**	**17554**	**43755**	**131734**	**17646**	**43548**	**128717**	**17789**	**43816**
Natural sciences	52719	8525	21841	53446	8633	22239	53265	8683	22210	53185	8842	22627
Engineering	44097	1740	6204	44000	1727	6281	42472	1692	5802	39755	1632	5797
Medical sciences	12918	3320	5921	13083	3413	6085	13131	3454	6086	12992	3514	5930
Agricultural sciences	10285	1225	3930	10206	1245	3954	10147	1265	3988	9663	1202	3779
Social sciences	5456	935	2251	5695	1019	2415	5937	1044	2571	6224	1109	2754
Humanities	6786	1581	2896	6525	1517	2781	6782	1508	2891	6898	1490	2929

5.2.14. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE GOVERNMENT SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

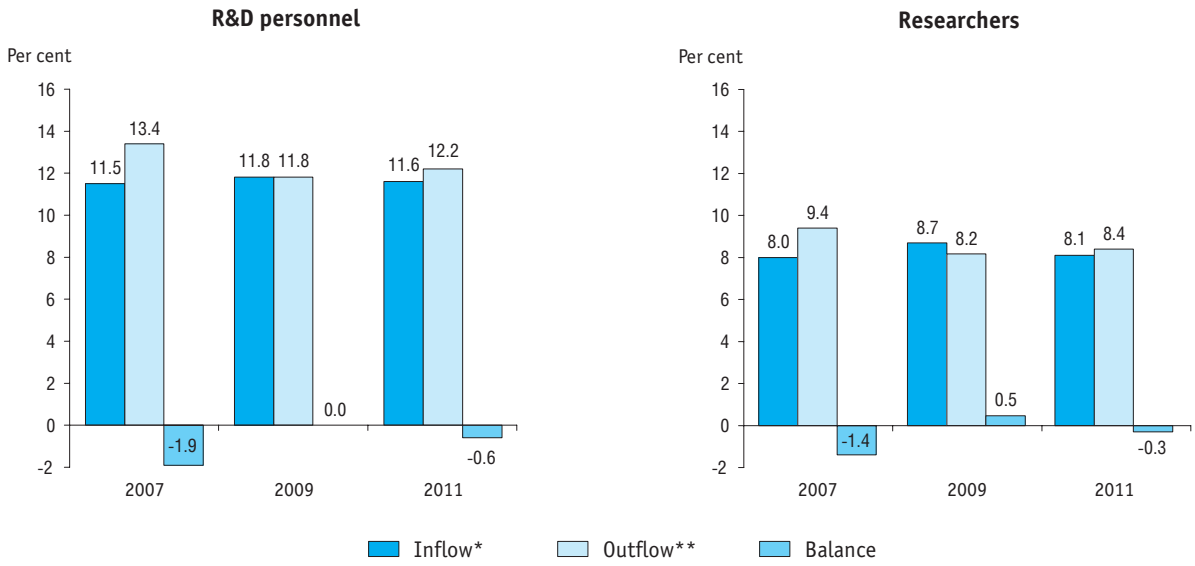


5.2.15. FLOWS OF R&D PERSONNEL IN THE GOVERNMENT SECTOR BY OCCUPATION

(head-count)

	Number at the beginning of the reference year	Inflow				Outflow				Number at the end of the reference year
		Total	Graduates from higher education institutions	From other research institutes	Others	Total	Voluntary turnover	Due to staff reduction	For other reasons	
Total										
2005	275249	32634	3990	5456	23188	35165	24924	851	9390	272718
2007	278286	31213	3474	5849	21890	37244	26183	1687	9374	272255
2009	260231	30799	3665	4587	22547	30670	18822	1696	10152	260360
2011	256637	29478	3152	4193	22133	31219	20567	1115	9537	254896
Researchers										
2005	139746	11715	3127	3121	5467	12087	8871	358	2858	139378
2007	140358	11082	2557	3113	5412	13237	9392	744	3101	138169
2009	132328	11519	2636	2434	6449	10898	6943	629	3326	132955
2011	129871	10428	2192	2337	5899	10944	7072	335	3537	128717
Technicians										
2005	25569	4128	336	630	3162	4227	2892	83	1252	25462
2007	27334	3896	296	408	3192	4714	3185	174	1355	26545
2009	24279	3872	335	412	3125	3581	1931	214	1436	24554
2011	24540	4424	363	220	3841	4484	2717	146	1621	26960
Supporting and other staff										
2005	109934	16791	527	1705	14555	18851	13161	410	5280	107878
2007	110594	16235	621	2328	13286	19293	13606	769	4918	107541
2009	103624	15408	694	1741	12973	16191	9948	853	5390	102851
2011	102226	14626	597	1636	12393	15791	10778	634	4379	99219

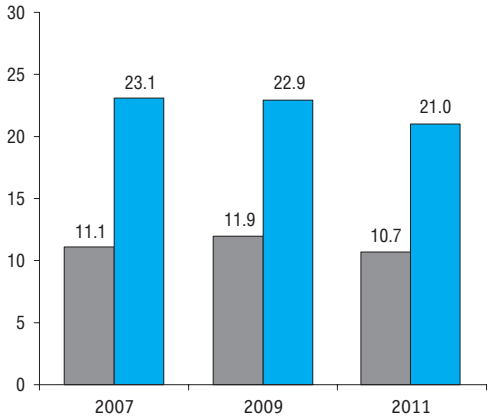
5.2.16. INFLOW AND OUTFLOW OF R&D PERSONNEL IN THE GOVERNMENT SECTOR



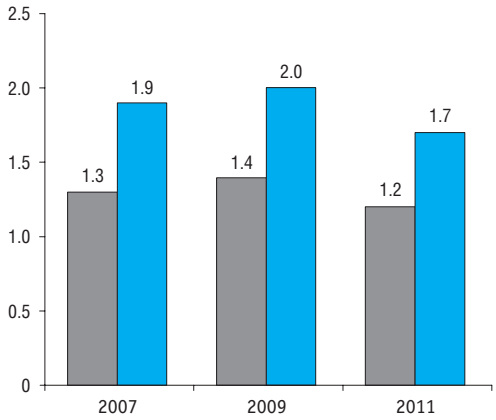
* The ratio of the R&D personnel admitted during the year to the number of employees at the end of the year.
** The ratio of the R&D personnel having resigned during the year to the number of employees at the beginning of the year.

5.2.17. INFLOW OF HIGHER EDUCATION GRADUATES TO R&D INSTITUTIONS IN THE GOVERNMENT SECTOR

Higher education graduates as a percentage of the inflow to R&D institutions



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



R&D personnel – total Researchers

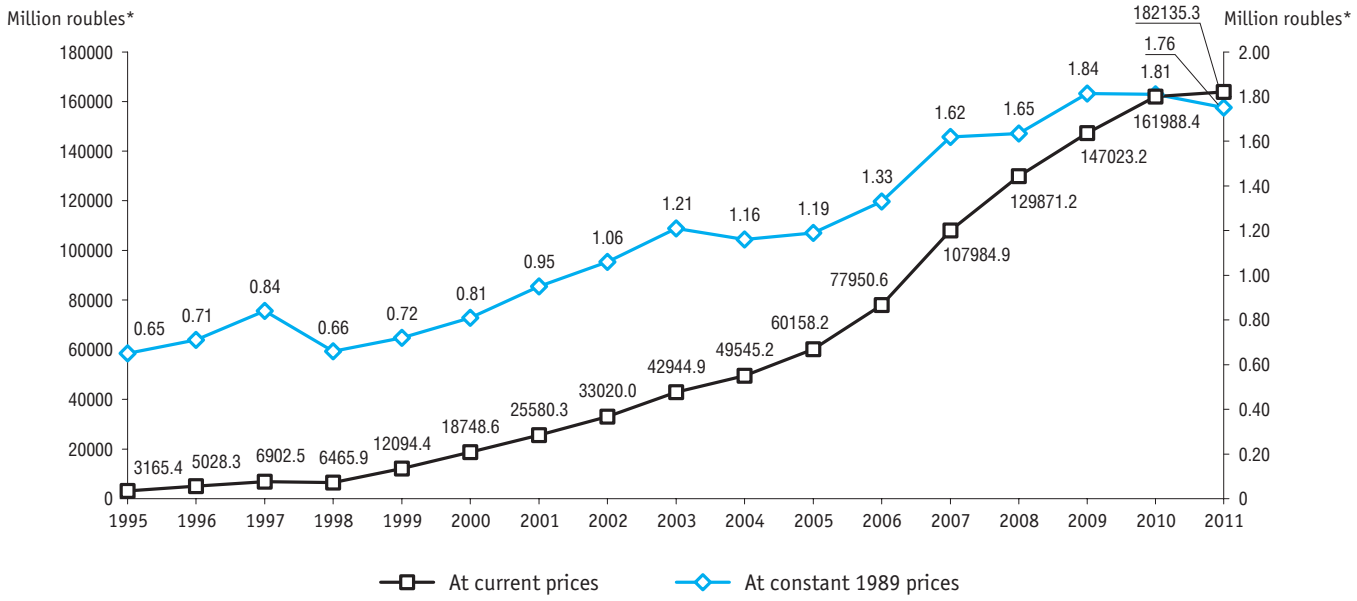
* The ratio of the higher education graduates admitted during the year to the number of employees at the end of the year.

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

(thousand roubles)

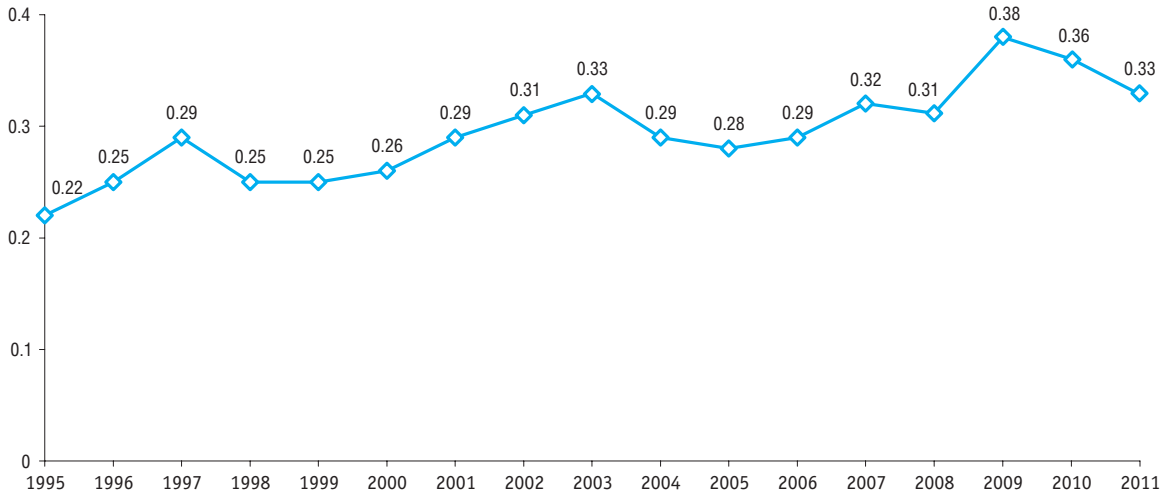
	2005	2007	2008	2009	2010	2011
Total	**60158166.6**	**107984917.2**	**129871228.3**	**147023165.7**	**161988411.4**	**182135309.9**
Research institutes	55762222.6	88691989.4	111905020.4	126002650.1	136870186.3	151261078.9
Design organisations	4007361.7	16421797.5	13446090.0	16426476.1	20163653.6	23348735.0
Construction project and exploration organisations	21993.6	331363.4	381522.5	490398.7	524208.6	551628.3
Experimental enterprises	20300.0	153136.1	136641.7	159660.0	139733.5	528561.1
Others	346288.7	2386630.8	4001953.7	3943980.8	4290629.4	6445306.6

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



* Before 1998 – billion roubles.

5.2.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT



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

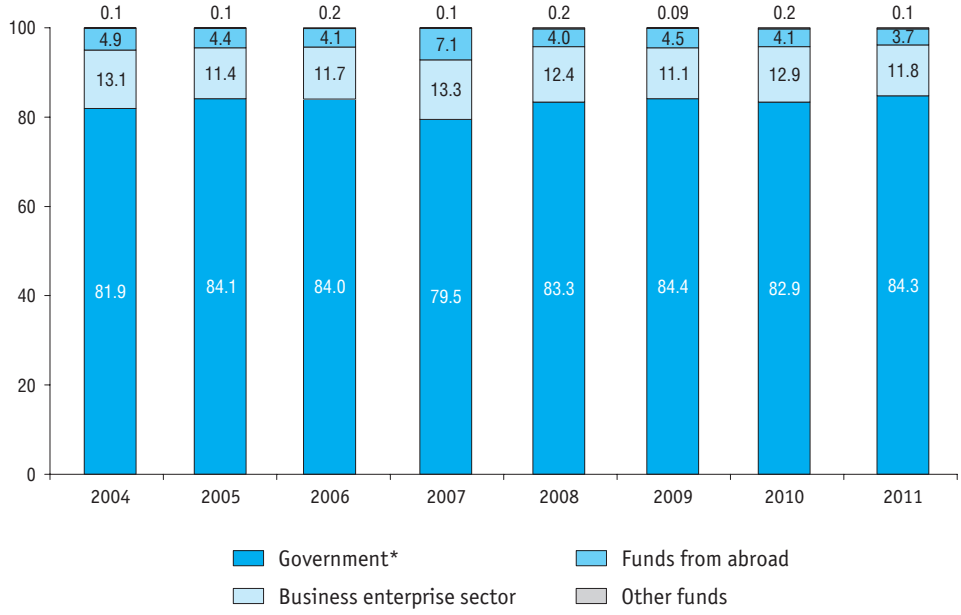
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			At current prices, *thousand roubles, 1995 – million roubles*			
1995	3165439.4	2779222.3	255799.4	2313.0	821.0	127283.7
1999	12094359.8	9317086.9	1392261.7	73806.5	3579.0	1307625.7
2000	18748588.2	15060439.1	2028296.2	11323.4	3898.5	1644631.0
2001	25580299.1	20398017.0	3166813.9	16458.8	8180.4	1990829.0
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

* Including federal budget appropriations, own funds and funds of government sector institutions.

(continued)

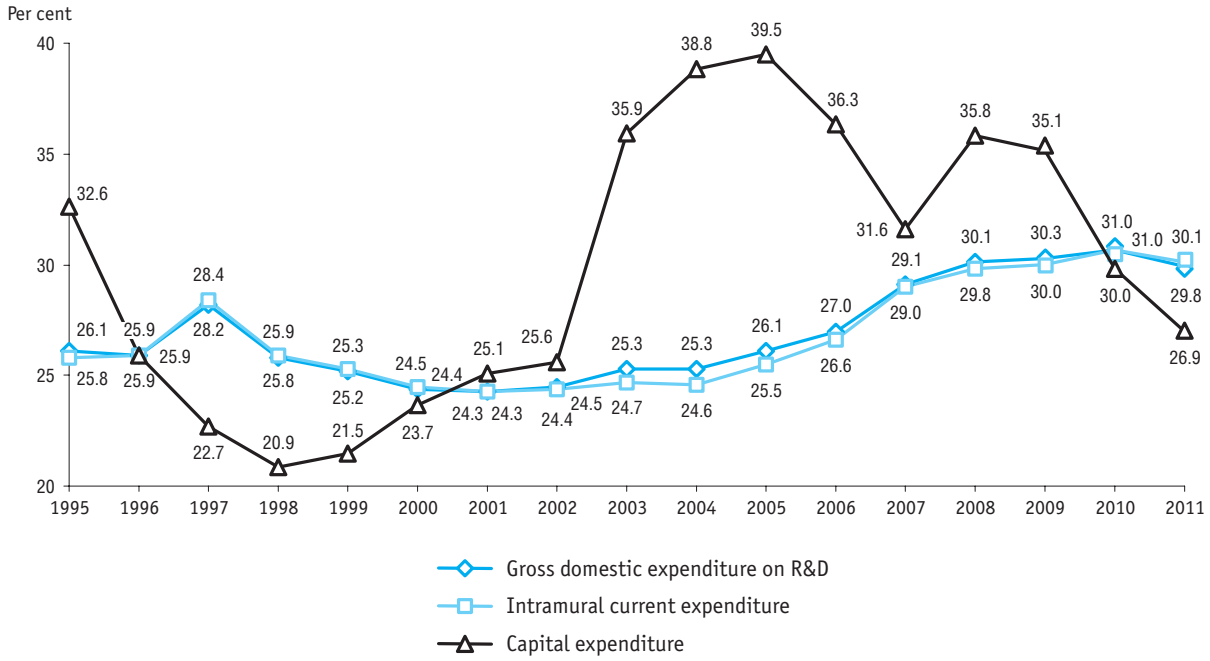
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			Per cent			
1995	100	87.8	8.1	0.07	0.03	4.0
1999	100	77.0	11.5	0.6	0.03	10.8
2000	100	80.3	10.8	0.06	0.02	8.8
2001	100	79.7	12.4	0.06	0.03	7.8
2002	100	80.4	12.2	0.05	0.1	7.3
2003	100	81.1	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

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



* Including federal budget appropriations, own funds and funds of government sector institutions.

5.2.23. SHARE OF THE GOVERNMENT SECTOR IN GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF COSTS



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

(thousand roubles)

	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D	**60158166.6**	**77950634.9**	**107984917.2**	**129871228.3**	**147023165.7**	**161988411.4**	**182135309.9**
Intramural current expenditure	56342327.7	73951796.2	102247576.2	122630304.7	138303922.9	151825126.6	170811017.0
Salaries	25406848.5	34448412.3	49141825.5	64641064.4	75166755.2	80849201.5	89553195.8
Of which for R&D personnel*	23066423.6	31314445.0	45216914.7	59514756.7	68956969.5	73752076.2	81321475.8
Social security payments	6257309.9	8287532.3	11095423.9	13683355.2	15270378.1	16436614.4	23348352.4
Equipment	3086873.3	3881136.7	4682814.6	5189920.0	5801943.7	5458681.5	5276489.5
Fixed assets	2072960.4	2597032.2	3152176.2	3559638.2	3834297.9	3241305.1	3403968.6
Other material costs	9781232.9	12684946.4	18344379.1	17531022.6	20128759.2	22464861.8	25352173.1
Other current costs	11810063.1	14649768.5	18983133.1	21584942.5	21936086.7	26615767.4	27280806.2
Capital expenditure	3815838.9	3998838.7	5737341.0	7240923.6	8719242.8	10163284.8	11324292.9
Land and buildings	399698.5	626796.3	506072.5	670481.4	802555.6	3113137.6	2285830.0
Equipment	2485274.0	2239642.9	3948303.1	4803223.1	5164006.4	4647644.5	5963907.8
Other capital expenditure	930866.4	1132399.5	1282965.4	1767219.1	2752680.8	2402502.7	3074555.1

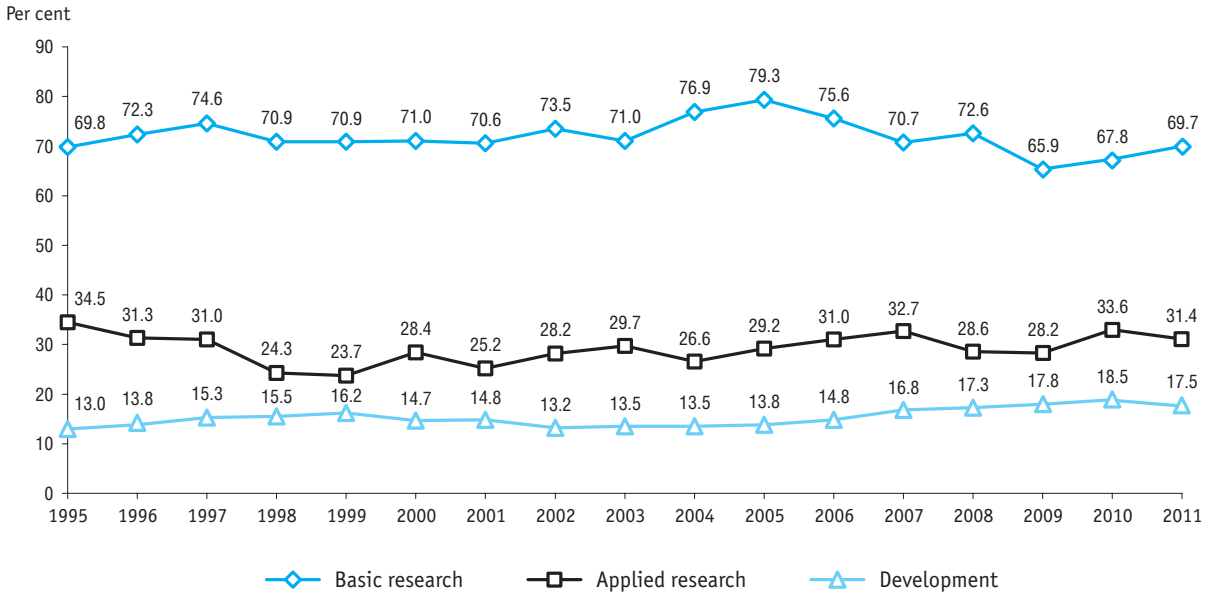
* Excluding those employed on a plural basis and on contracts.

5.2.25. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE GOVERNMENT SECTOR BY TYPE OF ACTIVITY AND FIELD OF SCIENCE AND TECHNOLOGY

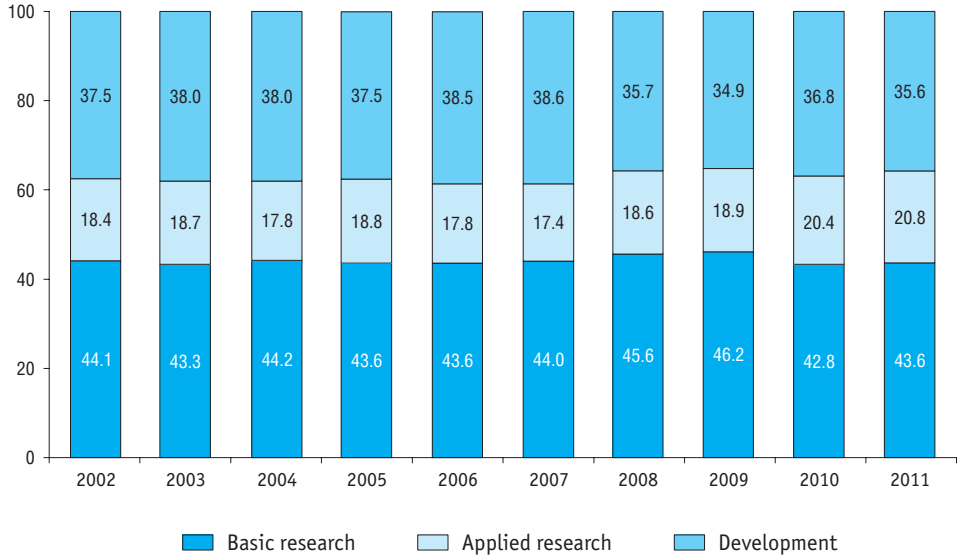
(thousand roubles)

	Total	Natural sciences	Engineering	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
Development	21153092.6	1956365.5	18153355.9	372634.7	419683.5	142216.6	108836.4
			2008				
Intramural current expenditure on R&D	**122630304.7**	**48234671.6**	**50909060.3**	**8869157.9**	**6318360.1**	**3883571.4**	**4415483.4**
Basic research	55980558.1	35420735.3	7071712.4	3498263.2	3874131.1	2595280.4	3520435.7
Applied research	22831808.4	9006765.2	6568848.5	4423539.8	1438433.2	947734.6	446487.1
Development	43817938.2	3807171.1	37268499.4	947354.9	1005795.8	340556.4	448560.6
			2009				
Intramural current expenditure on R&D	**138303922.9**	**53057400.3**	**57337613.7**	**10986547.1**	**7538339.2**	**4848230.9**	**4535791.7**
Basic research	63843573.1	38973183.4	7810233.6	5263412.1	4736909.5	3144728.0	3915106.5
Applied research	26135931.3	10140896.7	7215817.1	5050748.8	1957833.8	1228496.0	542138.9
Development	48324418.5	3943320.2	42311563.0	672386.2	843595.9	475006.9	78546.3
			2010				
Intramural current expenditure on R&D	**151825126.6**	**56889173.8**	**65431955.8**	**12635358.1**	**6868458.0**	**4815854.6**	**5184326.3**
Basic research	65041375.9	38927125.1	8471457.1	5340161.8	4177771.0	3645798.9	4479062.0
Applied research	30948555.6	13265692.5	7766540.0	6615628.6	1773878.6	936306.6	590509.3
Development	55835195.1	4696356.2	49193958.7	679567.7	916808.4	233749.1	114755.0
			2011				
Intramural current expenditure on R&D	**170811017.0**	**64225127.6**	**72553560.4**	**14858903.1**	**7944816.7**	**5088780.6**	**6139828.6**
Basic research	74527944.1	45306685.6	9806502.8	5824214.7	4672089.0	3598320.7	5320131.3
Applied research	35457277.1	14580486.7	8910718.7	7987136.7	2286298.4	1138808.5	553828.1
Development	60825795.8	4337955.3	53836338.9	1047551.7	986429.3	351651.4	265869.2

5.2.26. SHARE OF THE GOVERNMENT SECTOR IN INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



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



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

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average monthly salary, *roubles, 1995 – thousand roubles*	**330.5**	**2015.6**	**3970.4**	**4969.6**	**5958.7**	**7220.9**	**9678.8**	**14208.3**	**19561.0**	**22979.7**	**24792.1**	**27869.4**
As a percentage of that:												
in the national economy (=100%)	70.0	90.7	91.1	90.4	88.4	84.4	91.0	104,5	113.1	123.3	118.3	119.3
in manufacturing (=100%)	72.1	85.2	89.4	88.7	87.0	85.7	94.9	110,3	121.9	138.6	130.0	128.0
in construction (=100%)	56.2	76.4	82.6	80.5	81.6	79.9	89.0	99,1	105.3	126.8	117.1	117.7

State Academies of Sciences

5.2.29. NUMBER OF R&D INSTITUTIONS IN STATE ACADEMIES OF SCIENCES

	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**839**	**838**	**837**	**851**	**891**	**865**	**864**	**857**	**873**
Russian Academy of Sciences	463	452	451	465	479	468	469	472	483
Russian Academy of Agricultural Sciences	286	297	297	292	312	304	302	294	295
Russian Academy of Medical Sciences	67	67	66	68	69	68	67	64	65
Russian Academy of Architecture and Civil Engineering	5	5	5	6	6	5	5	5	7
Russian Academy of Education	17	16	17	19	22	18	20	20	21
Russian Academy of Fine Arts	1	1	1	1	3	2	1	2	2

5.2.30. R&D PERSONNEL IN STATE ACADEMIES OF SCIENCES BY OCCUPATION

(head-count)

	2004	2005	2006	2007	2008	2009	2010	2011
Total	**150337**	**147871**	**144661**	**142609**	**137544**	**139582**	**137743**	**135838**
Researchers	84285	83409	81389	80444	77315	78206	76868	74940
Technicians	15846	15422	14475	14119	12966	13320	13228	13666
Supporting staff	26015	25432	25148	24394	23683	23623	23025	23010
Others	24191	23608	23649	23652	23580	24433	24622	24222
Russian Academy of Sciences	**104876**	**103294**	**99741**	**96969**	**93464**	**95290**	**95280**	**94945**
Researchers	61161	60613	58423	56764	54576	55402	55183	53702
Technicians	10191	10072	9147	8866	8083	8350	8709	9340
Supporting staff	17990	17556	17131	16396	15733	15804	15454	15805
Others	15534	15053	15040	14943	15072	15734	15934	16098
Russian Academy of Agricultural Sciences	**29799**	**29134**	**29407**	**29854**	**28963**	**29081**	**27984**	**26723**
Researchers	13701	13350	13430	13914	13367	13200	12642	12273
Technicians	3912	3688	3702	3749	3421	3534	3329	3156
Supporting staff	5872	5707	5801	5683	5688	5731	5533	5290
Others	6314	6389	6474	6508	6487	6616	6480	6004
Russian Academy of Medical Sciences	**13564**	**13292**	**13185**	**13272**	**12885**	**13063**	**12151**	**11940**
Researchers	7841	7842	7859	8007	7798	7998	7393	7378
Technicians	1661	1575	1511	1402	1365	1368	1090	1089
Supporting staff	1943	1923	1962	1985	1922	1851	1759	1642
Others	2119	1952	1853	1878	1800	1846	1909	1831

(continued)

	2004	2005	2006	2007	2008	2009	2010	2011
Russian Academy of Architecture and Civil Engineering	**558**	**630**	**742**	**728**	**721**	**573**	**606**	**558**
Researchers	392	424	445	461	462	396	420	382
Technicians	69	74	89	66	79	46	63	58
Supporting staff	32	55	76	73	110	63	66	59
Others	65	77	132	128	70	68	57	59
Russian Academy of Education	**1460**	**1441**	**1505**	**1562**	**1335**	**1492**	**1392**	**1344**
Researchers	1121	1116	1168	1176	1016	1136	1065	1044
Technicians	12	11	24	15	13	18	34	19
Supporting staff	174	180	166	212	159	173	130	131
Others	153	134	147	159	147	165	163	150
Russian Academy of Fine Arts	**80**	**80**	**81**	**224**	**176**	**83**	**330**	**328**
Researchers	69	64	64	122	96	74	165	161
Technicians	1	2	2	21	5	4	3	4
Supporting staff	4	11	12	45	71	1	83	83
Others	6	3	3	36	4	4	79	80

5.2.31. RESEARCHERS WITH SCIENTIFIC DEGREES IN STATE ACADEMIES OF SCIENCES

(head-count)

	2004	2005	2006	2007	2008	2009	2010	2011
Total	**48107**	**48178**	**47987**	**48047**	**47044**	**48026**	**47692**	**47873**
Doctors of Sciences	13542	13735	13923	14246	14146	14405	14408	14536
Candidates of Sciences	34565	34443	34064	33801	32898	33621	33284	33337
Russian Academy of Sciences	**35265**	**35378**	**34987**	**34613**	**33850**	**34654**	**34807**	**35109**
Doctors of Sciences	10035	10185	10311	10426	10355	10549	10641	10709
Candidates of Sciences	25230	25193	24676	24187	23495	24105	24166	24400
Russian Academy of Agricultural Sciences	**6432**	**6332**	**6475**	**6761**	**6674**	**6694**	**6524**	**6417**
Doctors of Sciences	1378	1374	1405	1539	1571	1589	1567	1562
Candidates of Sciences	5054	4958	5070	5222	5103	5105	4957	4855
Russian Academy of Medical Sciences	**5576**	**5611**	**5628**	**5715**	**5648**	**5735**	**5427**	**5412**
Doctors of Sciences	1902	1939	1949	1984	1958	1969	1905	1970
Candidates of Sciences	3674	3672	3679	3731	3690	3766	3522	3442
Russian Academy of Architecture and Civil Engineering	**119**	**123**	**123**	**127**	**130**	**134**	**128**	**122**
Doctors of Sciences	26	26	29	36	38	38	33	31
Candidates of Sciences	93	97	94	91	92	96	95	91
Russian Academy of Education	**663**	**679**	**719**	**776**	**687**	**758**	**739**	**748**
Doctors of Sciences	179	189	207	237	200	237	239	241
Candidates of Sciences	484	490	512	539	487	521	500	507
Russian Academy of Fine Arts	**52**	**55**	**55**	**55**	**55**	**51**	**67**	**65**
Doctors of Sciences	22	22	22	24	24	23	23	23
Candidates of Sciences	30	33	33	31	31	28	44	42

5.2.32. RESEARCHERS IN STATE ACADEMIES OF SCIENCES BY GENDER AND AGE GROUP

(head-count)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	**77315**	**14146**	**32898**	**74940**	**14536**	**33337**
Age, *years:*						
below 29	10610	9	2025	10758	5	2316
30–39	12006	228	6633	13273	354	7842
40–49	12483	1437	6121	9893	1215	5276
50–59	18694	4024	8191	16155	3772	7309
60–69	14390	4212	6418	13862	4221	6196
70 and over	9132	4236	3510	10999	4969	4398
Male	41981	10740	17426	40742	10858	17404
Age, *years:*						
below 29	5774	8	1159	5857	3	1413
30–39	5804	159	3306	6544	231	3872
40–49	5928	1024	2952	4700	828	2420
50–59	9959	2932	4464	8489	2650	3834
60–69	8436	3332	3491	8084	3285	3450
70 and over	6080	3285	2054	7068	3861	2415
Female	35334	3406	15472	34198	3678	15933
Age, *years:*						
below 29	4836	1	866	4901	2	903
30–39	6202	69	3327	6729	123	3970
40–49	6555	413	3169	5193	387	2856
50–59	8735	1092	3727	7666	1122	3475
60–69	5954	880	2927	5778	936	2746
70 and over	3052	951	1456	3931	1108	1983

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Sciences	**54576**	**10355**	**23495**	**53702**	**10709**	**24400**
Age, *years:*						
below 29	7379	1	1492	7592	3	1802
30–39	8116	136	4632	9291	184	5733
40–49	8436	891	4327	6725	757	3723
50–59	13167	2926	5878	11391	2677	5265
60–69	10707	3187	4708	10510	3276	4716
70 and over	6771	3214	2458	8193	3812	3161
Male	32618	8286	13419	32080	8473	13729
Age, *years:*						
below 29	4441	1	874	4648	2	1175
30–39	4457	106	2526	5094	150	3035
40–49	4492	687	2291	3594	551	1884
50–59	7842	2291	3478	6676	2042	3019
60–69	6738	2635	2773	6574	2655	2808
70 and over	4648	2566	1477	5494	3073	1808
Female	21958	2069	10076	21622	2236	10671
Age, *years:*						
below 29	2938	–	618	2944	1	627
30–39	3659	30	2106	4197	34	2698
40–49	3944	204	2036	3131	206	1839
50–59	5325	635	2400	4715	635	2246
60–69	3969	552	1935	3936	621	1908
70 and over	2123	648	981	2699	739	1353

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Agricultural Sciences	**13367**	**1571**	**5103**	**12273**	**1562**	**4855**
Age, *years:*						
below 29	2052	8	332	1946	–	316
30–39	1879	19	809	2092	42	998
40–49	2235	142	867	1628	105	732
50–59	3524	417	1376	2898	420	1142
60–69	2232	453	1014	2050	400	897
70 and over	1445	532	705	1659	595	770
Male	6024	1220	2599	5384	1179	2338
Age, *years:*						
below 29	905	7	189	818	–	160
30–39	739	11	378	831	30	466
40–49	814	90	367	577	71	295
50–59	1410	295	675	1113	281	504
60–69	1134	377	520	977	319	448
70 and over	1022	440	470	1068	478	465
Female	7343	351	2504	6889	383	2517
Age, *years:*						
below 29	1147	1	143	1128	–	156
30–39	1140	8	431	1261	12	532
40–49	1421	52	500	1051	34	437
50–59	2114	122	701	1785	139	638
60–69	1098	76	494	1073	81	449
70 and over	423	92	235	591	117	305

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Medical Sciences	**7798**	**1958**	**3690**	**7378**	**1970**	**3442**
Age, *years:*						
below 29	982	–	179	1060	2	180
30–39	1785	73	1102	1622	122	999
40–49	1521	378	803	1299	326	703
50–59	1613	607	768	1487	591	723
60–69	1192	504	580	1027	460	474
70 and over	705	396	258	883	469	363
Male	2844	1099	1216	2752	1058	1152
Age, *years:*						
below 29	375	–	86	344	1	69
30–39	555	42	377	542	50	343
40–49	551	234	253	461	190	212
50–59	582	313	257	583	283	257
60–69	453	282	164	421	266	160
70 and over	328	228	79	401	268	111
Female	4954	859	2474	4626	912	2290
Age, *years:*						
below 29	607	–	93	716	1	111
30–39	1230	31	725	1080	72	656
40–49	970	144	550	838	136	491
50–59	1031	294	511	904	308	466
60–69	739	222	416	606	194	314
70 and over	377	168	179	482	201	252

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Architecture and Civil Engineering	**462**	**38**	**92**	**382**	**31**	**91**
Age, *years:*						
below 29	62	–	2	48	–	1
30–39	64	–	11	62	–	14
40–49	77	3	10	38	2	7
50–59	113	6	16	84	7	21
60–69	82	10	26	66	7	18
70 and over	64	19	27	84	15	30
Male	195	28	51	166	22	52
Age, *years:*						
below 29	26	–	2	17	–	–
30–39	25	–	6	25	–	7
40–49	29	1	8	14	2	5
50–59	33	3	9	31	3	14
60–69	52	10	13	33	6	11
70 and over	30	14	13	46	11	15
Female	267	10	41	216	9	39
Age, *years:*						
below 29	36	–	–	31	–	1
30–39	39	–	5	37	–	7
40–49	48	2	2	24	–	2
50–59	80	3	7	53	4	7
60–69	30	–	13	33	1	7
70 and over	34	5	14	38	4	15

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Education	**1016**	**200**	**487**	**1044**	**241**	**507**
Age, *years:*						
below 29	128	–	18	105	–	15
30–39	153	–	75	173	6	88
40–49	201	22	110	180	24	104
50–59	261	65	144	264	74	150
60–69	152	49	87	174	68	84
70 and over	121	64	53	148	69	66
Male	276	97	136	292	116	128
Age, *years:*						
below 29	24	–	8	28	–	9
30–39	27	–	19	37	1	21
40–49	37	11	31	44	13	22
50–59	89	29	43	76	40	37
60–69	53	23	21	60	33	23
70 and over	46	34	14	47	29	16
Female	740	103	351	752	125	379
Age, *years:*						
below 29	104	–	10	77	–	6
30–39	126	–	56	136	5	67
40–49	164	11	79	136	11	82
50–59	172	36	101	188	34	113
60–69	99	26	66	114	35	61
70 and over	75	30	39	101	40	50

(continued)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Russian Academy of Fine Arts	**96**	**24**	**31**	**161**	**23**	**42**
Age, *years:*						
below 29	7	–	2	7	–	2
30–39	9	–	4	33	–	10
40–49	13	1	4	23	1	7
50–59	16	3	9	31	3	8
60–69	25	9	3	35	10	7
70 and over	26	11	9	32	9	8
Male	24	10	5	68	10	5
Age, *years:*						
below 29	3	–	–	2	–	–
30–39	1	–	–	15	–	–
40–49	5	1	2	10	1	2
50–59	3	1	2	10	1	3
60–69	6	5	–	19	6	–
70 and over	6	3	1	12	2	–
Female	72	14	26	93	13	37
Age, *years:*						
below 29	4	–	2	5	–	2
30–39	8	–	4	18	–	10
40–49	8	–	2	13	–	5
50–59	13	2	7	21	2	5
60–69	19	4	3	16	4	7
70 and over	20	8	8	20	7	8

5.2.33. GROSS DOMESTIC EXPENDITURE ON R&D IN STATE ACADEMIES OF SCIENCES

(thousand roubles)

	2004	2005	2006	2007	2008	2009	2010	2011
At current prices								
Total	**27315241.6**	**32401091.0**	**42465812.3**	**55613207.8**	**69073252.5**	**78818046.1**	**78636432.4**	**86974142.9**
Russian Academy of Sciences	21766382.5	25799901.3	34156381.5	44276444.4	55912011.9	61370704.2	62471831.1	67408937.0
Russian Academy of Agricultural Sciences	3199823.4	3668815.1	4562308.5	6216412.7	7520092.1	9705184.3	8775351.6	9701044.9
Russian Academy of Medical Sciences	2060252.6	2547513.4	3218993.9	4166702.2	4710248.7	6688484.7	6105878.2	8403120.8
Russian Academy of Architecture and Civil Engineering	122910.1	181189.4	254101.6	371206.3	399906.2	408177.1	385608.2	487273.3
Russian Academy of Education	153933.9	190812.2	258482.6	538678.7	416418.9	613427.0	578024.0	593962.6
Russian Academy of Fine Arts	11939.1	12859.6	15544.2	43763.5	114574.7	32068.8	319739.3	379804.3
At constant 1989 prices								
Total	**642.1**	**638.4**	**726.4**	**835.9**	**879.8**	**984.3**	**879.9**	**840.4**
Russian Academy of Sciences	511.7	508.4	584.2	665.5	712.2	766.4	699.1	651.4
Russian Academy of Agricultural Sciences	75.2	72.3	78.0	93.4	95.8	121.2	98.2	93.7
Russian Academy of Medical Sciences	48.4	50.2	55.1	62.6	60.0	83.5	68.3	81.2
Russian Academy of Architecture and Civil Engineering	2.9	3.6	4.3	5.6	5.1	5.1	4.3	4.7
Russian Academy of Education	3.6	3.8	4.4	8.1	5.3	7.7	6.5	5.7
Russian Academy of Fine Arts	0.3	0.3	0.3	0.7	1.5	0.4	3.6	3.7

5.2.34. GROSS DOMESTIC EXPENDITURE ON R&D IN STATE ACADEMIES OF SCIENCES BY SOURCE OF FUNDS

(thousand roubles)

	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			2005			
Total	**32401091.0**	**27236822.1**	**3747062.6**	**41279.2**	**13757.0**	**1362170.1**
Russian Academy of Sciences	25799901.3	21299039.5	3102597.8	41065.6	13296.3	1343902.1
Russian Academy of Agricultural Sciences	3668815.1	3284080.1	380561.3	107.1	15.0	4051.6
Russian Academy of Medical Sciences	2547513.4	2366534.6	166210.2	106.5	445.7	14216.4
Russian Academy of Architecture and Civil Engineering	181189.4	93690.6	87498.8	–	–	–
Russian Academy of Education	190812.2	181456.6	9355.6	–	–	–
Russian Academy of Fine Arts	12859.6	12020.7	838.9	–	–	–
			2009			
Total	**78818046.1**	**71313442.6**	**6184320.4**	**75764.7**	**37391.0**	**1207127.4**
Russian Academy of Sciences	61370704.2	55447438.5	4682296.7	72099.6	32493.1	1136376.3
Russian Academy of Agricultural Sciences	9705184.3	8958283.5	736294.7	665.1	4766.4	5174.6
Russian Academy of Medical Sciences	6688484.7	5999602.1	620174.6	3000.0	131.5	65576.5
Russian Academy of Architecture and Civil Engineering	408177.1	269988.9	138188.2	–	–	–
Russian Academy of Education	613427.0	606060.8	7366.2	–	–	–
Russian Academy of Fine Arts	32068.8	32068.8	–	–	–	–

* Including federal budget appropriations, own funds, and funds of government sector institutions.

(continued)

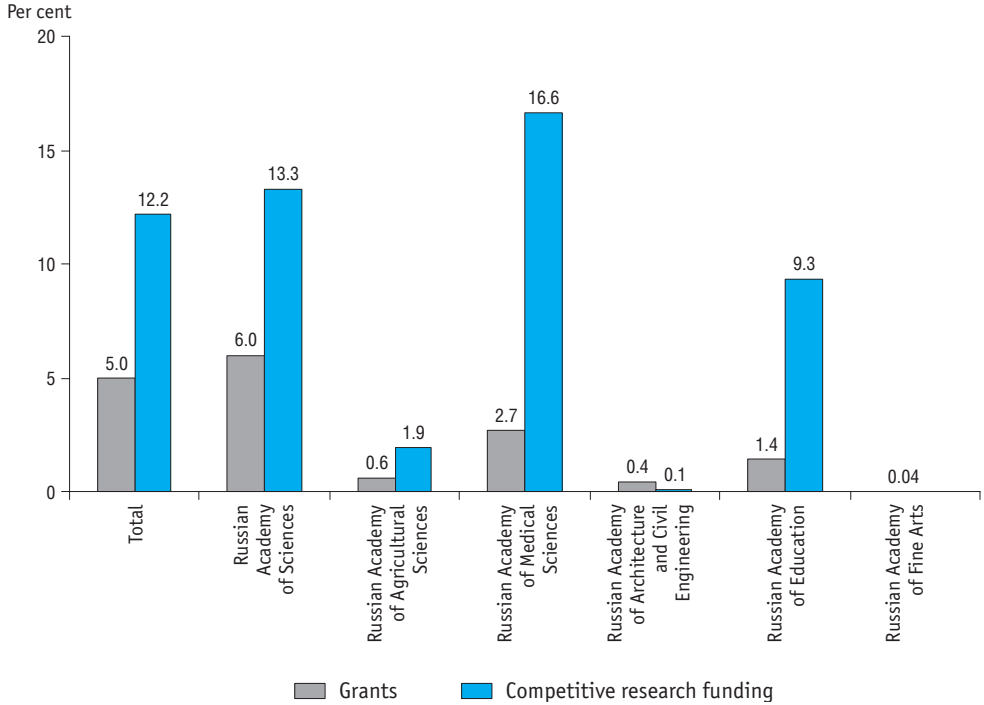
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
		2010				
Total	**78636432.4**	**69475039.7**	**7559777.6**	**155682.3**	**43440.3**	**1402492.5**
Russian Academy of Sciences	62471831.1	54737822.6	6213854.4	150989.6	43329.6	1325834.9
Russian Academy of Agricultural Sciences	8775351.6	8081393.0	683215.4	3497.2	85.0	7161.0
Russian Academy of Medical Sciences	6105878.2	5540950.2	498960.2	1195.5	25.7	64746.6
Russian Academy of Architecture and Civil Engineering	385608.2	229199.9	156408.3	–	–	–
Russian Academy of Education	578024.0	565934.7	7339.3	–	–	4750.0
Russian Academy of Fine Arts	319739.3	319739.3	–	–	–	–
		2011				
Total	**86974142.9**	**78099590.3**	**6800068.5**	**175330.1**	**42203.6**	**1856950.4**
Russian Academy of Sciences	67408937.0	60001835.6	5436777.0	166459.2	34265.3	1769599.9
Russian Academy of Agricultural Sciences	9701044.9	8994148.7	689201.2	8870.9	1738.3	7085.8
Russian Academy of Medical Sciences	8403120.8	7738851.1	581121.2	–	6200.0	76948.5
Russian Academy of Architecture and Civil Engineering	487273.3	397952.4	89320.9	–	–	–
Russian Academy of Education	593962.6	586998.2	3648.2	–	–	3316,2
Russian Academy of Fine Arts	379804.3	379804.3	–	–	–	–

5.2.35. GRANTS AND COMPETITIVE RESEARCH FUNDING IN STATE ACADEMIES OF SCIENCES

(thousand roubles)

	Grants		Competitive research funding	
	2010	2011	2010	2011
Total	**3320696.5**	**4313410.5**	**7098497.3**	**10578551.8**
Russian Academy of Sciences	3107395.7	4025456.8	6540842.7	8939587.6
Russian Academy of Agricultural Sciences	37826.5	53864.0	190877.1	184902.9
Russian Academy of Medical Sciences	152943.3	223855.7	338328.1	1398392.2
Russian Academy of Architecture and Civil Engineering	9275.0	1860.7	–	700.0
Russian Academy of Education	13256.0	8203.7	28449.4	54969.1
Russian Academy of Fine Arts	–	169.6	–	–

5.2.36. SHARE OF GRANTS AND COMPETITIVE RESEARCH FUNDING IN GROSS DOMESTIC EXPENDITURE ON R&D BY STATE ACADEMIES OF SCIENCES: 2011



5.2.37. INTRAMURAL CURRENT EXPENDITURE ON R&D IN STATE ACADEMIES OF SCIENCES BY TYPE OF ACTIVITY AND FIELD OF SCIENCE AND TECHNOLOGY

(thousand roubles)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
				2005			
Total	**29777478.1**	**18396766.8**	**3775012.8**	**2020462.4**	**2951709.2**	**1372350.1**	**1261176.8**
Basic research	22450265.3	15034789.2	1927581.8	1408254.7	1836684.2	1091798.9	1151156.5
Applied research	4684246.1	1900244.9	1203638.6	563651.8	722305.7	198138.7	96266.4
Development	2642966.7	1461732.7	643792.4	48555.9	392719.3	82412.5	13753.9
Russian Academy of Sciences	**23557587.3**	**17820136.5**	**3264013.9**	**47892.7**	**44178.1**	**1153846.0**	**1227520.1**
Basic research	18378054.4	14533327.6	1703406.3	35192.4	41527.0	946190.9	1118410.2
Applied research	3189013.1	1839125.4	1049372.4	12311.2	2327.3	190520.8	95356.0
Development	1990519.8	1447683.5	511235.2	389.1	323.8	17134.3	13753.9
Russian Academy of Agricultural Sciences	**3436402.9**	**106420.4**	**419417.8**	**1730.0**	**2907531.1**	**1303.6**	**-**
Basic research	2035377.8	71301.6	167578.4	1250.0	1795157.2	90.6	–
Applied research	871853.0	29707.4	120474.2	480.0	719978.4	1213.0	–
Development	529172.1	5411.4	131365.2	–	392395.5	–	–
Russian Academy of Medical Sciences	**2408455.9**	**436190.0**	**-**	**1970839.7**	**-**	**1426.2**	**-**
Basic research	1769378.6	396140.1	–	1371812.3	–	1426.2	–
Applied research	582272.7	31412.1	–	550860.6	–	–	–
Development	56804.6	8637.8	–	48166.8	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
Russian Academy of Architecture and Civil Engineering	**177296.8**	**-**	**91418.1**	**-**	**-**	**77481.1**	**8397.6**
Basic research	77034.6	–	56434.1	–	–	12202.9	8397.6
Applied research	33792.0	–	33792.0	–	–	–	–
Development	66470.2	–	1192.0	–	–	65278.2	–
Russian Academy of Education	**184875.6**	**34019.9**	**163.0**	**-**	**-**	**138293.2**	**12399.5**
Basic research	177560.3	34019.9	163.0	–	–	131888.3	11489.1
Applied research	7315.3	–	–	–	–	6404.9	910.4
Development	–	–	–	–	–	–	–
Russian Academy of Fine Arts	**12859.6**	**-**	**-**	**-**	**-**	**-**	**12859.6**
Basic research	12859.6	–	–	–	–	–	12859.6
Applied research	–	–	–	–	–	–	–
Development	–	–	–	–	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
			2009				
Total	**74384696.5**	**45300392.3**	**8852257.5**	**5559963.2**	**7483820.0**	**3866514.1**	**3321749.4**
Basic research	58812099.0	38209824.6	5702056.4	3726065.3	4948445.0	3134764.2	3090943.5
Applied research	10572534.6	4398684.5	2036827.5	1659970.8	1813725.6	440448.0	222878.2
Development	5000062.9	2691883.2	1113373.6	173927.1	721649.4	291301.9	7927.7
Russian Academy of Sciences	**57876311.6**	**43723755.1**	**7350411.3**	**188594.2**	**75188.1**	**3286114.4**	**3252248.5**
Basic research	47791014.7	37027300.5	4967688.3	120058.8	62466.4	2592058.1	3021442.6
Applied research	6203732.9	4039183.4	1466752.4	68492.1	3672.4	402754.4	222878.2
Development	3881564.0	2657271.2	915970.6	43.3	9049.3	291301.9	7927.7
Russian Academy of Agricultural Sciences	**9260440.1**	**686382.7**	**1137956.7**	**12099.7**	**7408631.9**	**15369.1**	–
Basic research	5967328.1	411347.3	648621.9	9854.9	4885978.6	11525.4	–
Applied research	2372221.1	249965.9	306157.4	2200.9	1810053.2	3843.7	–
Development	920890.9	25069.5	183177.4	43.9	712600.1	–	–
Russian Academy of Medical Sciences	**6207665.6**	**844939.6**	–	**5359269.3**	–	**3456.7**	–
Basic research	4325470.2	725861.9	–	3596151.6	–	3456.7	–
Applied research	1698813.0	109535.2	–	1589277.8	–	–	–
Development	183382.4	9542.5	–	173839.9	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
Russian Academy of Architecture and Civil Engineering	**400290.9**	–	**363889.5**	–	–	–	**36401.4**
Basic research	122147.6	–	85746.2	–	–	–	36401.4
Applied research	263917.7	–	263917.7	–	–	–	–
Development	14225.6	–	14225.6	–	–	–	–
Russian Academy of Education	**607919.5**	**45314.9**	–	–	–	**561573.9**	**1030.7**
Basic research	574069.6	45314.9	–	–	–	527724.0	1030.7
Applied research	33849.9	–	–	–	–	33849.9	–
Development	–	–	–	–	–	–	–
Russian Academy of Fine Arts	**32068.8**	–	–	–	–	–	**32068.8**
Basic research	32068.8	–	–	–	–	–	32068.8
Applied research	–	–	–	–	–	–	–
Development	–	–	–	–	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
				2010			
Total	**75567075.3**	**46641824.7**	**9151937.5**	**5287947.4**	**6874515.6**	**3762206.3**	**3848643.8**
Basic research	58463215.8	37672321.3	5723699.7	3697076.7	4463165.3	3297631.8	3609321.0
Applied research	11703343.1	5850061.3	2139160.2	1419197.8	1606420.9	454879.8	233623.1
Development	5400516.4	3119442.1	1289077.6	171672.9	804929.4	9694.7	5699.7
Russian Academy of Sciences	**60061026.4**	**45208595.2**	**7859430.1**	**178674.8**	**112792.9**	**3109326.9**	**3592206.5**
Basic research	48106251.7	36707923.6	5070955.9	144313.2	96417.7	2733202.6	3353438.7
Applied research	7844789.1	5397720.1	1828517.0	15577.7	3476.6	366429.6	233068.1
Development	4109985.6	3102951.5	959957.2	18783.9	12898.6	9694.7	5699.7
Russian Academy of Agricultural Sciences	**8511755.9**	**696803.8**	**1018426.0**	**10471.7**	**6761722.7**	**22477.7**	**1854.0**
Basic research	5331254.1	463607.9	475500.7	6440.0	4366747.6	17658.9	1299.0
Applied research	2110516.6	222416.8	275750.0	4031.7	1602944.3	4818.8	555.0
Development	1069985.2	10779.1	267175.3	–	792030.8	–	–
Russian Academy of Medical Sciences	**5815021.4**	**713434.9**	–	**5098800.9**	–	**2785.6**	–
Basic research	4026908.1	477799.0	–	3546323.5	–	2785.6	–
Applied research	1629512.8	229924.4	-	1399588.4	–	–	–
Development	158600.5	5711.5	–	152889.0	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
Russian Academy of Architecture and Civil Engineering	**382164.7**	**-**	**274081.4**	**-**	**-**	**74461.0**	**33622.3**
Basic research	222641.4	–	177243.1	–	–	11776.0	33622.3
Applied research	97578.2		34893.2	–	–	62685.0	–
Development	61945.1	–	61945.1	–	–	–	–
Russian Academy of Education	**577367.6**	**22990.8**	**-**	**-**	**-**	**553155.1**	**1221.7**
Basic research	556421.2	22990.8	–	–	–	532208.7	1221.7
Applied research	20946.4	–	–	–	–	20946.4	–
Development	–	–	–	–	–	–	–
Russian Academy of Fine Arts	**219739.3**	**-**	**-**	**-**	**-**	**-**	**219739.3**
Basic research	219739.3	–	–	–	–	–	219739.3
Applied research	–	–	–	–	–	–	–
Development	–	–	–	–	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
				2011			
Total	**82860523.2**	**50967571.7**	**9332946.1**	**6323962.7**	**7777952.5**	**3965306.8**	**4492783.4**
Basic research	65576698.2	43283641.9	5611478.3	4326349.9	4835816.4	3222397.2	4297014.5
Applied research	12373033.2	5549163.6	2236456.7	1774443.7	1981094.1	643801.7	188073.4
Development	4910791.8	2134766.2	1485011.1	223169.1	961042.0	99107.9	7695.5
Russian Academy of Sciences	**64990681.6**	**49379000.5**	**7954681.0**	**146831.2**	**104911.5**	**3295033.5**	**4110223.9**
Basic research	53846562.0	41943425.3	4956705.5	134705.3	88268.4	2808424.5	3915033.0
Applied research	7837900.1	5312755.0	1932300.0	11542.8	2377.3	391429.6	187495.4
Development	3306219.5	2122820.2	1065675.5	583.1	14265.8	95179.4	7695.5
Russian Academy of Agricultural Sciences	**9312894.0**	**518854.5**	**1035247.7**	**13783.0**	**7672541.0**	**20230.8**	**52237.0**
Basic research	5699735.0	404576.6	471547.7	9200.0	4747048.0	15703.7	51659.0
Applied research	2359729.8	102331.9	268993.0	4583.0	1978716.8	4527.1	578.0
Development	1253429.2	11946.0	294707.0	–	946776.2	–	–
Russian Academy of Medical Sciences	**7212682.3**	**1045913.9**	–	**6163348.5**	–	**3419.9**	–
Basic research	5097701.7	911837.2	–	4182444.6	–	3419.9	–
Applied research	1892394.6	134076.7	–	1758317.9	–	–	–
Development	222586.0	–	–	222586.0	–	–	–

(continued)

	Total	Natural sciences	Engineering	Medical sciences	Agricultural sciences	Social sciences	Humanities
Russian Academy of Architecture and Civil Engineering	**482525.0**	**-**	**343017.4**	**-**	**500.0**	**100963.0**	**38044.6**
Basic research	234781.7	–	183225.1	–	500.0	13012.0	38044.6
Applied research	123114.7	–	35163.7	–	–	87951.0	–
Development	124628.6	–	124628.6	–	–	–	–
Russian Academy of Education	**591996.0**	**23802.8**	–	–	–	**545659.6**	**22533.6**
Basic research	428173.5	23802.8	–	–	–	381837.1	22533.6
Applied research	159894.0	–	–	–	–	159894.0	–
Development	3928.5	–	–	–	–	3928.5	–
Russian Academy of Fine Arts	**269744.3**	–	–	–	–	–	**269744.3**
Basic research	269744.3	–	–	–	–	–	269744.3
Applied research	–	–	–	–	–	–	–
Development	–	–	–	–	–	–	–

5.3. Business Enterprise Sector

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

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**2345**	**2278**	**2213**	**2110**	**1990**	**1851**	**1703**	**1682**	**1742**	**1540**	**1446**	**1405**	**1450**
Research institutes	1089	1062	1024	972	956	888	855	805	765	699	659	634	598
Design organisations	615	564	550	535	487	451	410	398	391	334	306	290	287
Construction project and exploration organisations	204	94	87	79	71	60	55	51	45	37	31	31	32
Industrial enterprises	286	276	278	254	240	238	231	255	265	239	228	238	280
Experimental enterprises	31	32	32	30	30	25	16	15	19	20	21	16	14
Others	120	250	242	240	206	189	136	158	257	211	201	196	239

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

(head-count)

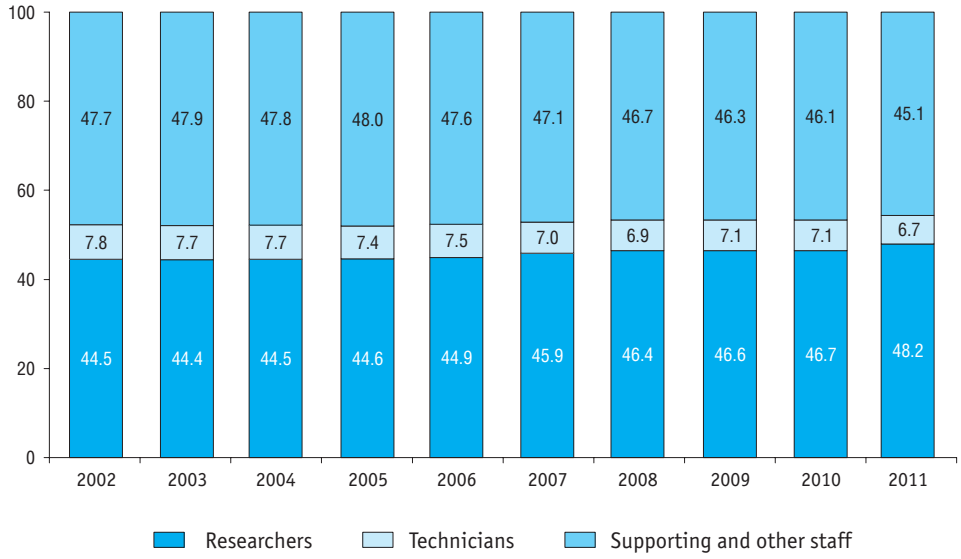
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**726568**	**590646**	**585416**	**568628**	**558668**	**537473**	**496706**	**486613**	**478401**	**451532**	**432415**	**423112**	**419752**
Research institutes	438599	349242	316735	306767	302617	286133	255233	243004	234808	225430	214050	207166	196235
Design organisations	174523	151705	176141	175800	170095	170323	161295	153259	148294	138713	135811	129281	135133
Construction project and exploration organisations	20844	8177	7342	7235	6391	5707	5284	5839	7001	6004	5320	4905	5076
Industrial enterprises	73410	52598	50561	45076	46575	47892	43524	59856	56759	52042	49042	51807	52004
Experimental enterprises	9998	3945	9424	9457	9311	5570	865	5736	2653	849	938	925	852
Others	9194	24979	25213	24293	23679	21848	30505	18919	28886	28494	27254	29028	30452

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

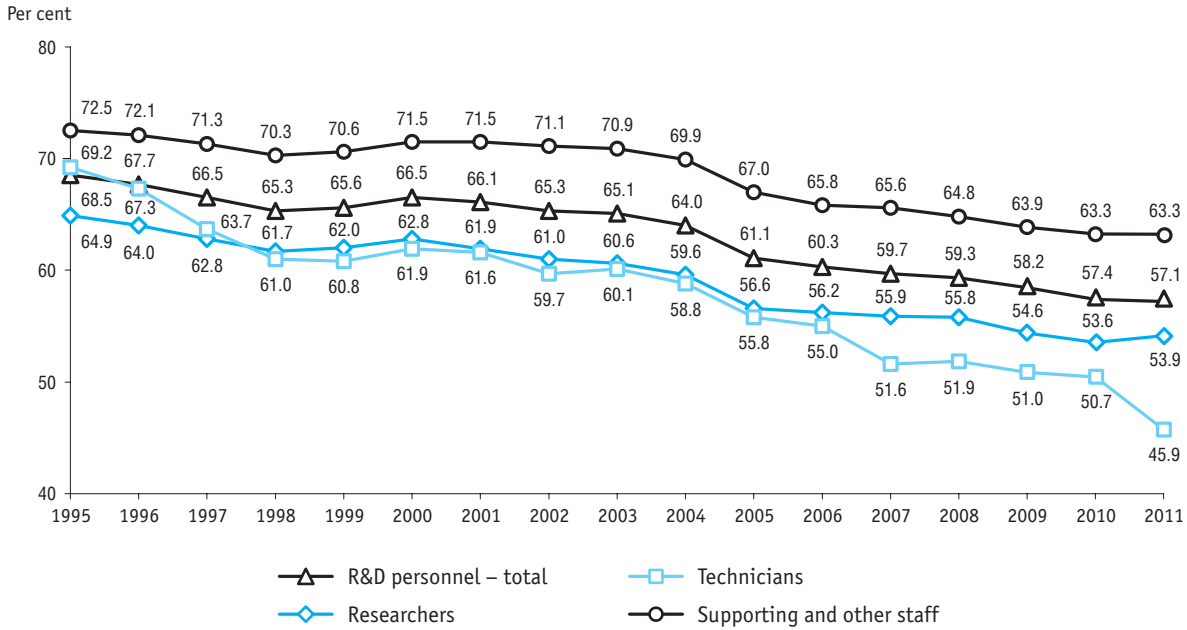
(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**726568**	**590646**	**585416**	**568628**	**558668**	**537473**	**496706**	**486613**	**478401**	**451532**	**432415**	**423112**	**419752**
Researchers	336671	267640	261334	252990	248232	239172	221445	218702	219632	209579	201668	197785	202185
Technicians	70180	46535	46493	44501	43137	41171	38837	36315	33340	31230	30613	30063	28235
Supporting staff	201122	175261	173501	169465	166620	159650	147980	144966	140507	129496	123814	120485	116829
Others	118595	101210	104088	101672	100679	97480	90444	86630	84922	81227	76320	74779	72503

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



5.3.5. SHARE OF THE BUSINESS ENTERPRISE SECTOR IN TOTAL R&D PERSONNEL BY OCCUPATION



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

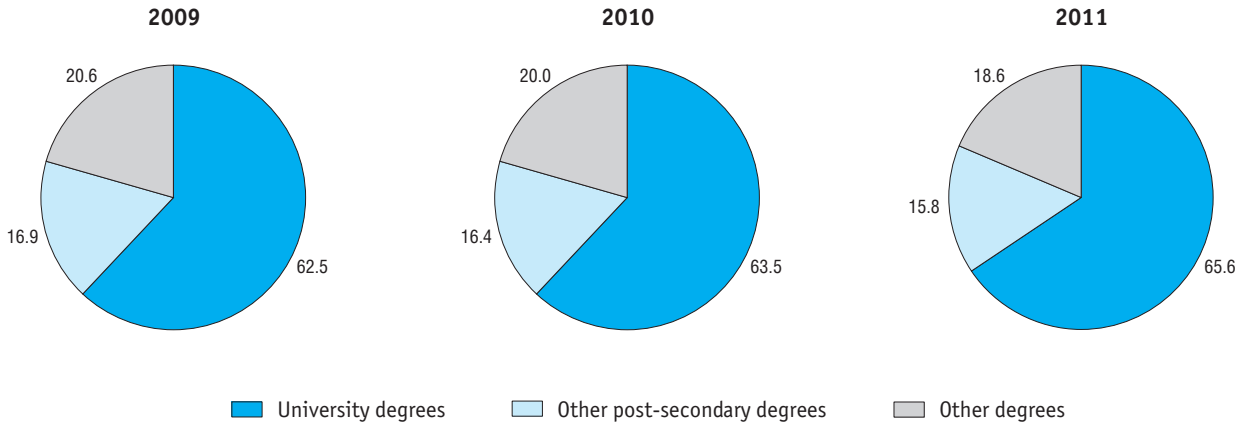
(head-count)

	Total	University degrees	Other post-secondary degrees	Other degrees
R&D personnel				
2005	496706	288649	89265	118792
2007	478401	290728	84326	103347
2008	451532	280083	78622	92827
2009	432415	270449	73054	88912
2010	423112	268821	69552	84739
2011	419752	275431	66267	78054
Researchers				
2005	221445	221445	–	–
2007	219632	219632	–	–
2008	209579	209579	–	–
2009	201668	201668	–	–
2010	197785	197785	–	–
2011	202185	202185	–	–
Technicians				
2005	36837	6274	21435	9130
2007	33340	7084	18721	7535
2008	31230	6421	17338	7471
2009	30613	7261	15924	7428
2010	30063	7842	15051	7170
2011	28235	7882	13972	6381

(continued)

	Total	University degrees	Other post-secondary degrees	Other degrees
Supporting staff				
2005	147980	37101	42099	68780
2007	140507	39503	41518	59486
2008	129496	39327	38116	52053
2009	123814	38134	35605	50075
2010	120485	38988	33362	48135
2011	116829	39771	32170	44888
Others				
2005	90444	23829	25733	40882
2007	84922	24509	24087	36326
2008	81227	24756	23168	33303
2009	76320	23386	21525	31409
2010	74779	24206	21139	29434
2011	72503	25593	20125	26785

5.3.7. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR BY EDUCATIONAL ATTAINMENT

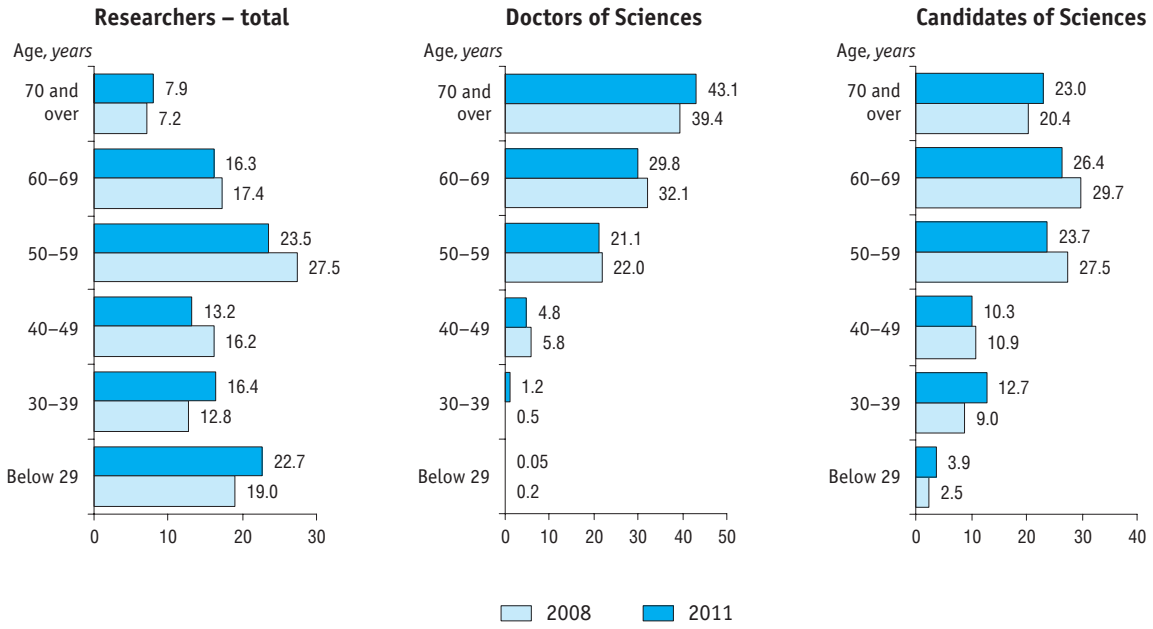


5.3.8. RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY GENDER AND AGE GROUP

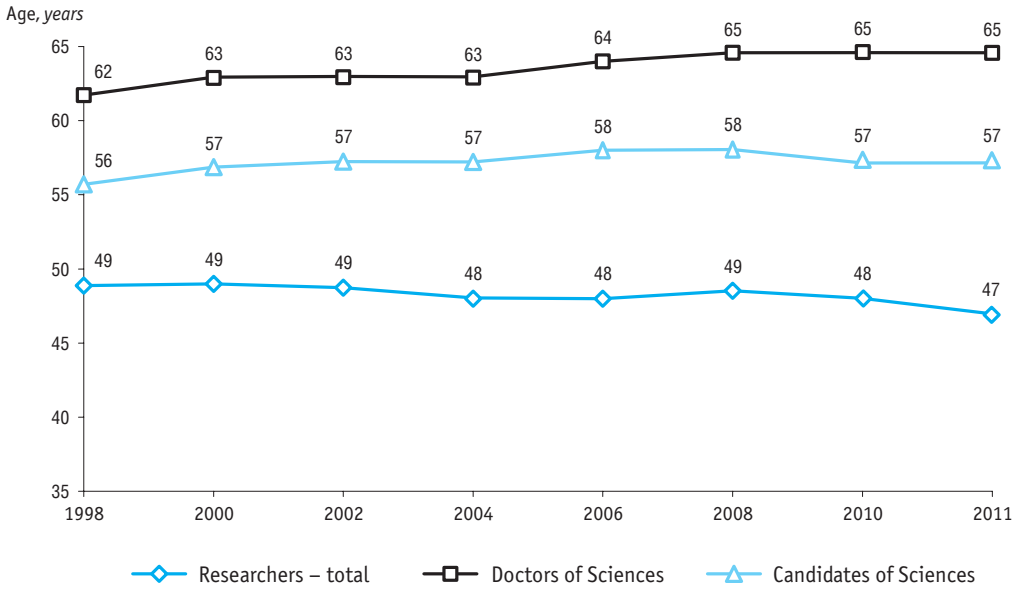
(head-count)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	**209579**	**4284**	**20560**	**202185**	**4018**	**19027**
Age, *years:*						
below 29	39743	8	522	45983	2	738
30–39	26840	21	1845	33248	48	2423
40–49	33992	250	2234	26685	192	1959
50–59	57581	941	5658	47413	848	4507
60–69	36400	1375	6113	32873	1196	5030
70 and over	15023	1689	4188	15983	1732	4370
Male	125997	3905	16502	124548	3664	15269
Age, *years:*						
below 29	25365	7	397	29707	2	563
30–39	16324	17	1303	21234	38	1740
40–49	17239	220	1676	13975	165	1409
50–59	31388	826	4484	26058	740	3632
60–69	23519	1276	5109	20789	1100	4239
70 and over	12162	1559	3533	12785	1619	3686
Female	83582	379	4058	77637	354	3758
Age, *years:*						
below 29	14 378	1	125	16276	–	175
30–39	10516	4	542	12014	10	683
40–49	16753	30	558	12710	27	550
50–59	26193	115	1174	21355	108	875
60–69	12881	99	1004	12084	96	791
70 and over	2861	130	655	3198	113	684

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



5.3.10. AVERAGE AGE OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR

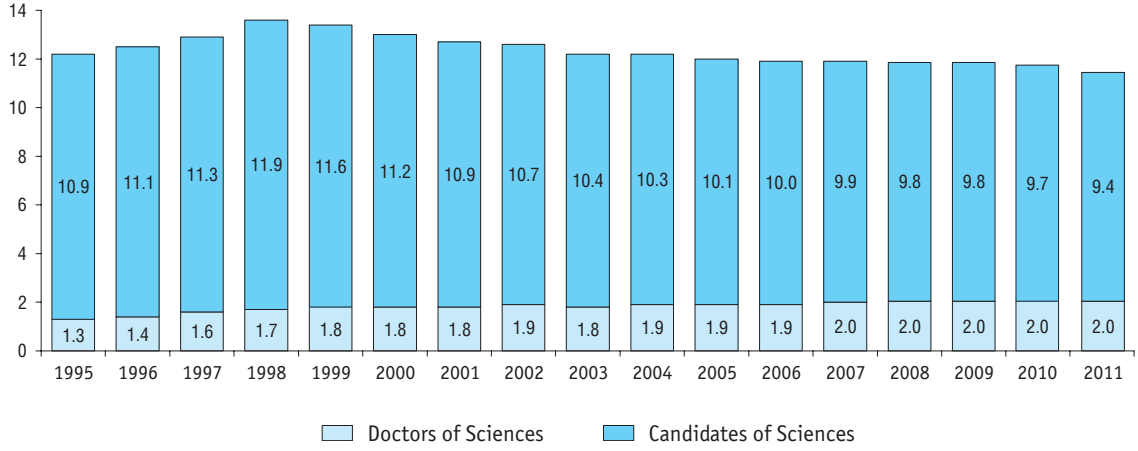


5.3.11. RESEARCHERS WITH SCIENTIFIC DEGREES IN THE BUSINESS ENTERPRISE SECTOR

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers with scientific degrees	**41207**	**34775**	**33313**	**31732**	**30507**	**29048**	**26661**	**25958**	**26257**	**24844**	**23861**	**23169**	**23045**
Doctors of Sciences	4348	4806	4750	4691	4583	4511	4222	4108	4446	4284	4093	3987	4018
Candidates of Sciences	36859	29969	28563	27041	25924	24537	22439	21850	21811	20560	19768	19182	19027

5.3.12. RESEARCHERS WITH SCIENTIFIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR

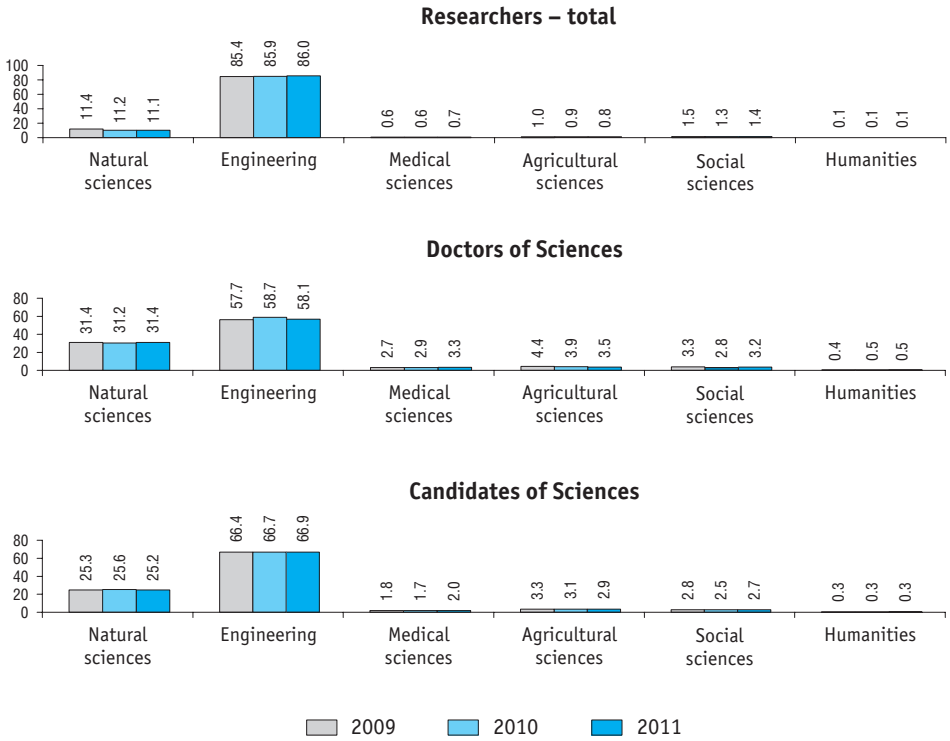


5.3.13. RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	2008			2009			2010			2011		
	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**	**201668**	**4093**	**19768**	**197785**	**3987**	**19182**	**202185**	**4018**	**19027**
Natural sciences	25014	1301	5106	22991	1286	5011	22188	1244	4915	22434	1262	4786
Engineering	177503	2478	13712	172166	2363	13124	169887	2342	12793	173916	2334	12729
Medical sciences	1353	139	413	1151	112	356	1100	115	335	1354	131	376
Agricultural sciences	2401	185	685	2115	179	657	1692	155	596	1539	141	561
Social sciences	3109	161	587	3023	136	563	2639	112	484	2730	128	522
Humanities	199	20	57	222	17	57	279	19	59	212	22	53

5.3.14. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

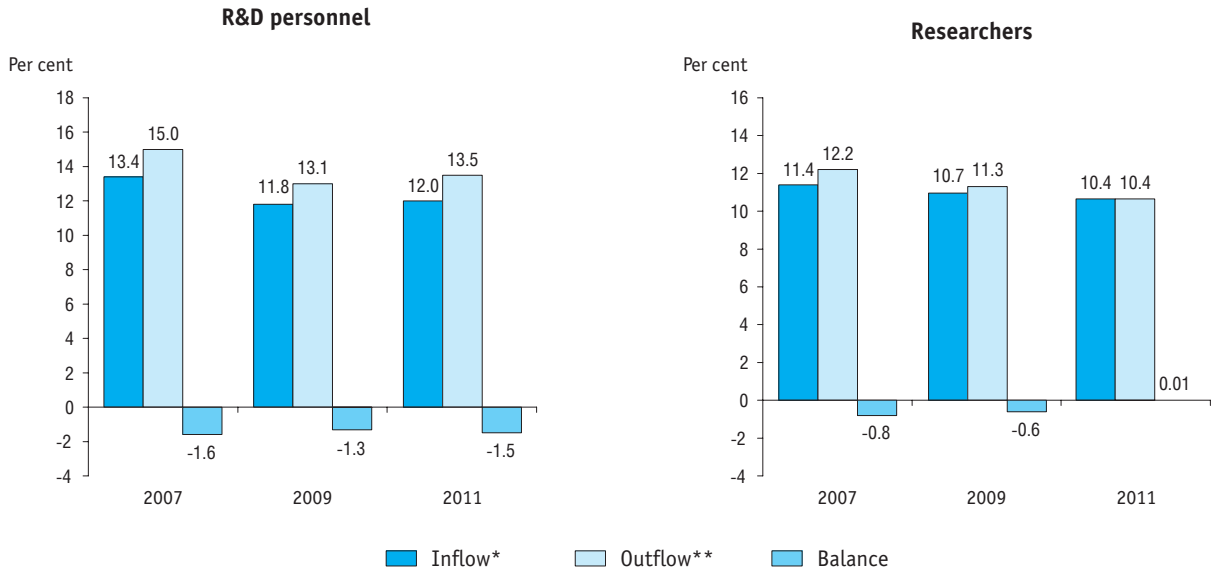


5.3.15. FLOWS OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR BY OCCUPATION

(head-count)

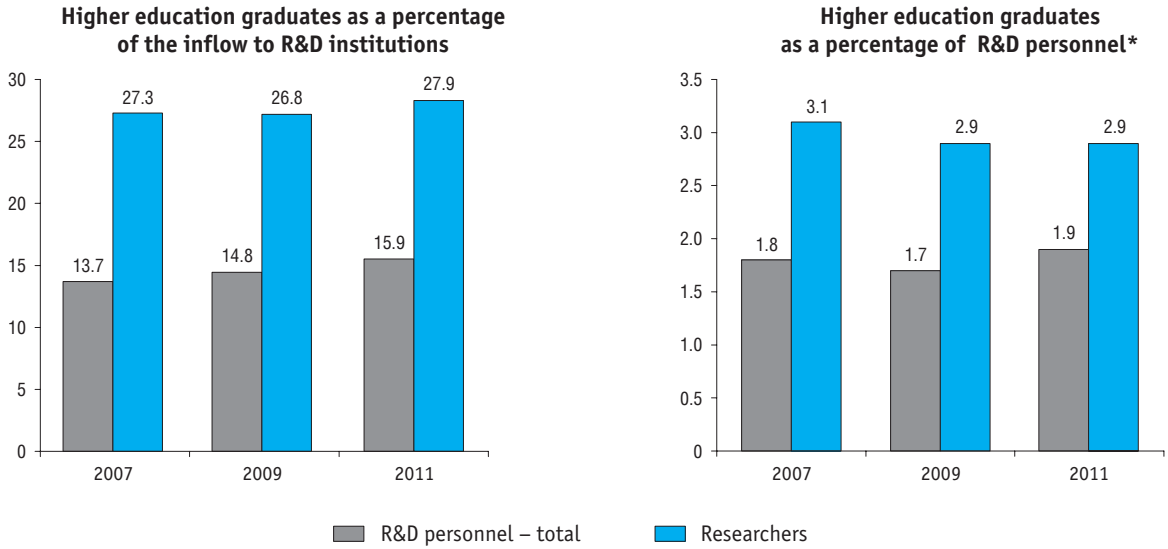
	Number at the beginning of the reference year	Inflow				Outflow				Number at the end of the reference year
		Total	Graduates from higher education institutions	From other research institutes	Others	Total	Voluntary turnover	Due to staff reduction	For other reasons	
Total										
2005	508840	68528	8027	8756	51745	80662	52534	5722	22406	496706
2007	487421	64128	8812	12072	43244	73148	49134	2861	21153	478401
2009	438982	50863	7550	7328	35985	57430	34540	3916	18974	432415
2011	427274	50218	7976	6092	36150	57740	36033	1794	19913	419752
Researchers										
2005	227397	22807	6529	5028	11250	28822	19496	2053	7273	221445
2007	221436	24998	6817	6798	11383	27067	18943	1338	6786	219632
2009	202994	21522	5776	4501	11245	22979	14360	1615	7004	201668
2011	202213	21121	5890	3770	11461	21109	14428	696	5985	202185
Technicians										
2005	38078	5739	301	729	4709	6965	4347	388	2230	36837
2007	34111	6873	577	1188	5108	7523	4741	205	2577	33340
2009	31615	4586	319	612	3655	5511	3243	365	1903	30613
2011	29057	4500	358	524	3618	5365	3378	124	1863	28235
Supporting and other staff										
2005	243365	39982	1197	2999	35786	44875	28691	3281	12903	238424
2007	231874	32257	1418	4086	26753	38558	25450	1318	11790	225429
2009	204373	24755	1455	2215	21085	28940	16937	1936	10067	200134
2011	196004	24597	1728	1798	21071	31266	18227	974	12065	189332

5.3.16. INFLOW AND OUTFLOW OF R&D PERSONNEL IN THE BUSINESS ENTERPRISE SECTOR



* The ratio of the R&D personnel admitted during the year to the number of employees at the end of the year.
** The ratio of the R&D personnel having resigned during the year to the number of employees at the beginning of the year.

5.3.17. INFLOW OF HIGHER EDUCATION GRADUATES TO R&D INSTITUTIONS IN THE BUSINESS ENTERPRISE SECTOR



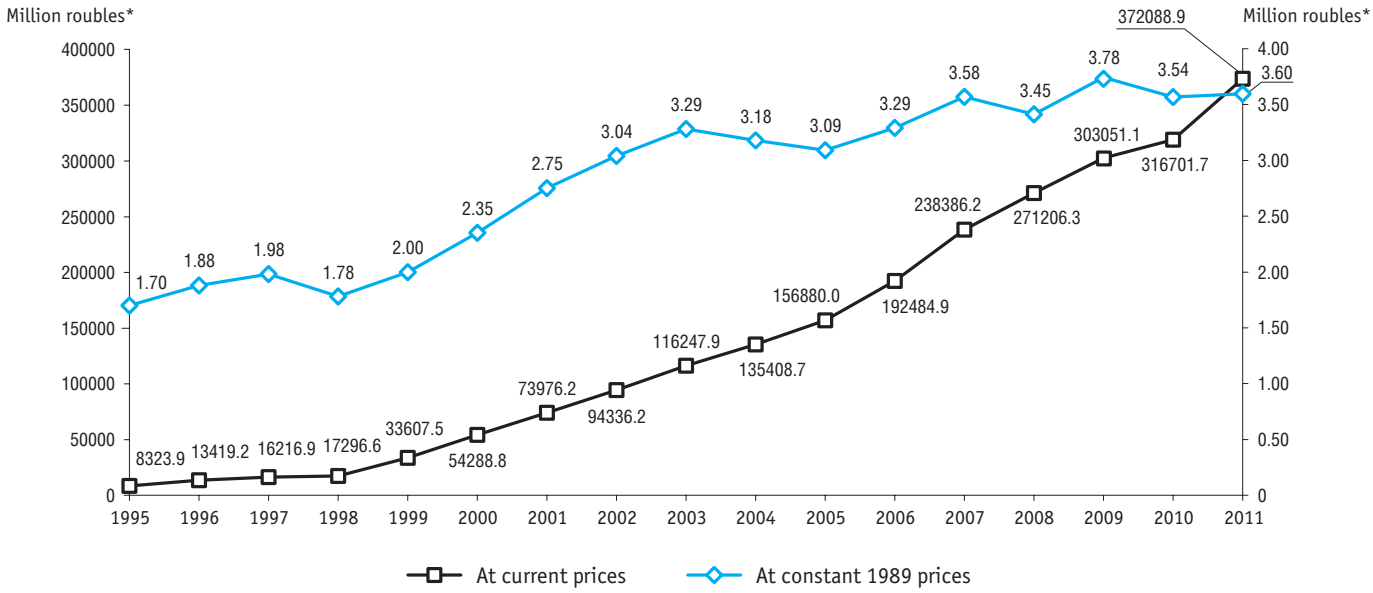
* The ratio of the higher education graduates admitted during the year to the number of employees at the end of the year.

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

(thousand roubles, 1995 – million roubles)

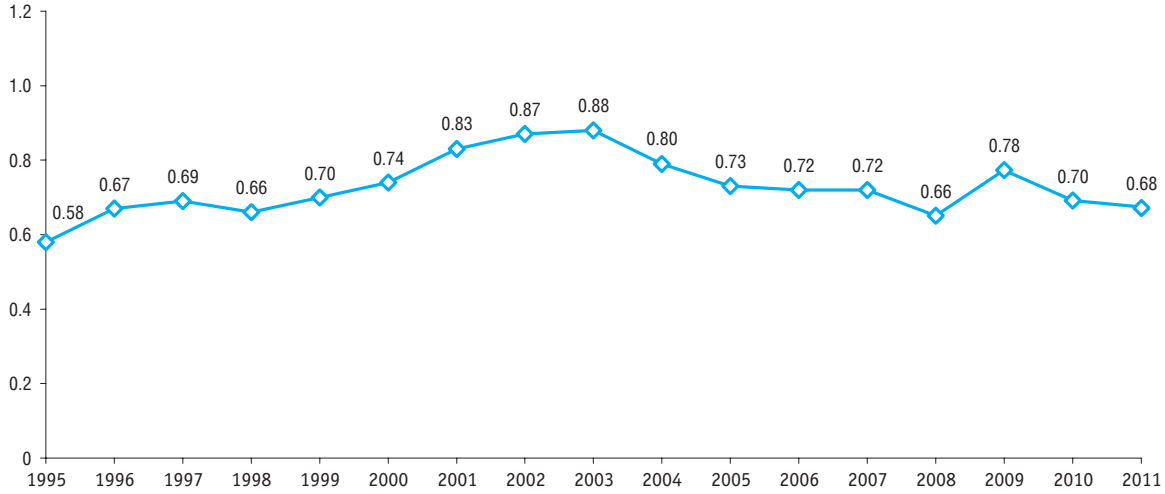
	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**8323907.6**	**54288781.4**	**94336248.9**	**116247853.0**	**135408690.9**	**156880029.0**	**192484851.0**	**238386207.4**	**271206280.5**	**303051131.5**	**316701679.9**	**372088873.4**
Research institutes	4981890.4	31145022.1	46811497.5	58275477.7	67183746.7	79303185.8	87694068.9	104244210.6	126680440.5	135958941.4	149370680.2	169714137.6
Design organisations	2091275.3	13115444.7	32045676.3	38768164.1	46431191.8	51857668.0	68538930.7	82256666.5	91233658.1	109741372.9	99778643.7	117208342.7
Construction project and exploration organisation	210405.0	539721.1	1081683.0	1224857.0	1448869.6	1604470.7	2165860.5	3639681.6	4511306.2	4491565.7	3690958.0	4688711.6
Industrial enterprises	815663.2	4726082.4	7931250.3	9880332.9	11397153.2	12633435.9	22467177.6	25337067.8	23918615.0	26940377.2	32838780.9	41251710.9
Experimental enterprises	119136.5	294581.2	1535742.6	1937090.8	1814605.3	150835.5	2774519.1	851914.6	331824.8	392760.1	398159.1	372177.7
Others	105537.2	4467929.9	4930399.2	6161930.5	7133124.3	11330433.1	8844294.2	22056666.3	24530435.9	25526114.2	30624458.0	38853792.9

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



* Before 1998 – billion roubles.

5.3.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT



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

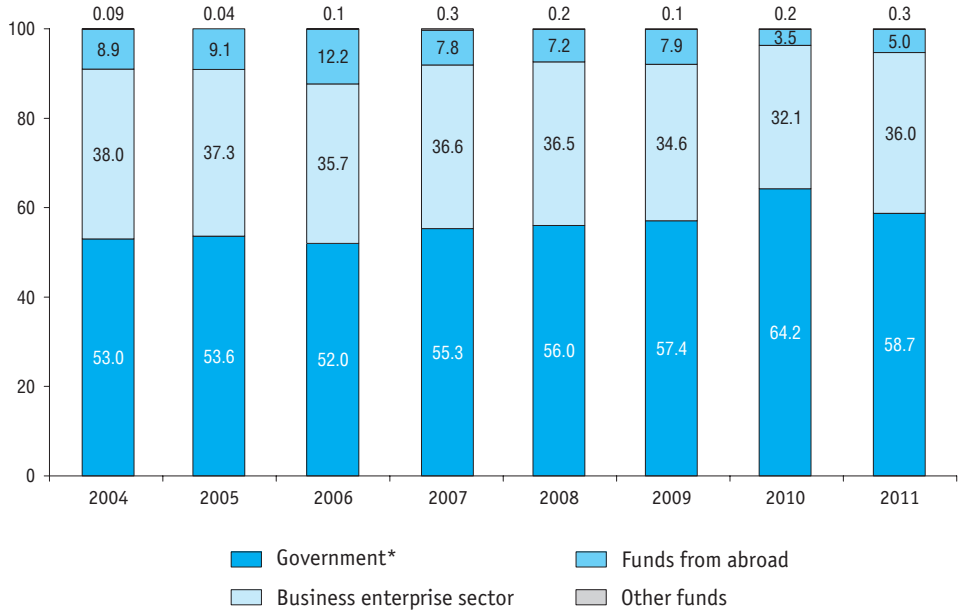
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			At current prices, *thousand roubles, 1995 – million roubles*			
1995	8323907.6	4256825.1	3639140.1	822.4	486.8	426633.2
1999	33607489.7	13697956.3	13224149.8	13190.2	11300.2	6660893.2
2000	54288781.4	24674880.5	22199361.6	23662.7	18968.0	7371908.6
2001	73976244.8	36274467.0	30729121.5	46348.3	149323.7	6776984.3
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

(continued)

	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			Per cent			
1995	100	51.1	43.7	0.01	0.01	5.1
1999	100	40.8	39.3	0.04	0.03	19.8
2000	100	45.5	40.9	0.04	0.03	13.6
2001	100	49.0	41.5	0.06	0.2	9.2
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

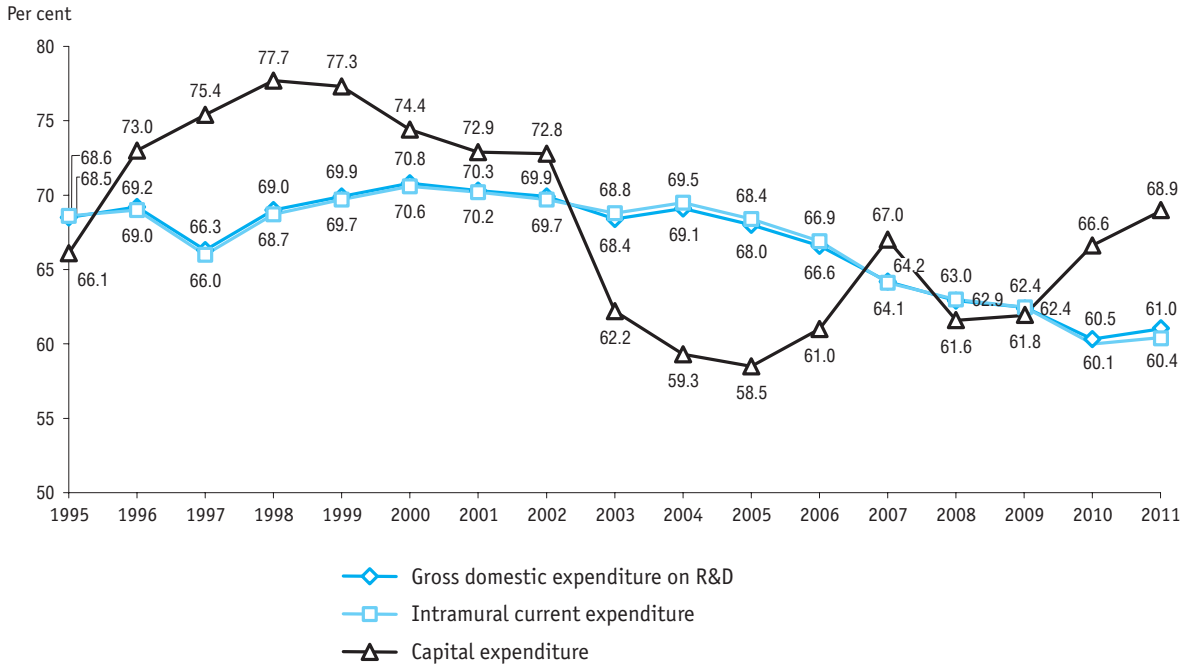
* Including federal budget appropriations and funds of government sector institutions.

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



* Including federal budget appropriations and funds of government sector institutions.

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



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

(thousand roubles)

	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D	**156880029.0**	**192484851.0**	**238386207.4**	**271206280.5**	**303051131.5**	**316701679.9**	**372088873.4**
Intramural current expenditure	151228693.6	185760345.8	226211577.7	258764246.7	287718749.5	294103827.7	343121369.6
Salaries	61762384.5	75288900.0	94546726.5	111090128.0	121823001.2	134771346.7	154670826.0
Of which for R&D personnel*	56579998.4	67605888.7	85564972.1	101472026.7	108594895.7	123576290.3	141005622.8
Social security payments	14652167.0	17810664.5	20370585.9	22451593.2	23934238.6	26089246.1	37534823.2
Equipment	5919453.8	7148336.2	8008224.5	7747615.5	7583666.7	9955224.5	11788168.9
Fixed assets	1630251.3	1804291.3	2088479.7	2159968.1	1799862.2	1879198.4	3304130.3
Other material costs	39963918.4	52156070.8	62599553.1	52972903.9	67227503.5	63367540.7	72417381.8
Other current costs	28930769.9	33356374.3	40686487.7	64502006.1	67150339.5	59920469.7	66710169.7
Capital expenditure	5651335.4	6724505.2	12174629.7	12442033.8	15332382.0	22597852.2	28967503.8
Land and buildings	1208092.5	1215824.4	3052930.6	4802602.2	3483317.9	4950198.0	6068422.7
Equipment	3228403.1	4372646.7	7538427.3	5483899.3	9546423.9	14167838.2	16379917.3
Other capital expenditure	1214839.8	1136034.1	1583271.8	2155532.3	2302640.2	3479816.0	6519163.8

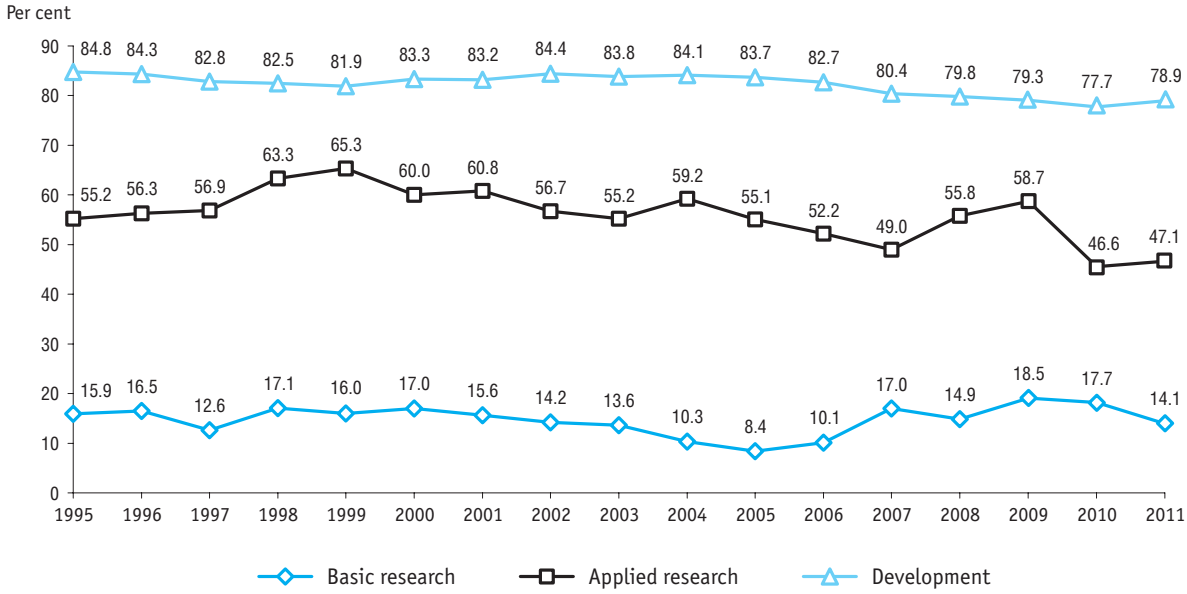
* Excluding those employed on a plural basis and on contracts.

5.3.25. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE BUSINESS ENTERPRISE SECTOR BY TYPE OF ACTIVITY AND FIELD OF SCIENCE AND TECHNOLOGY

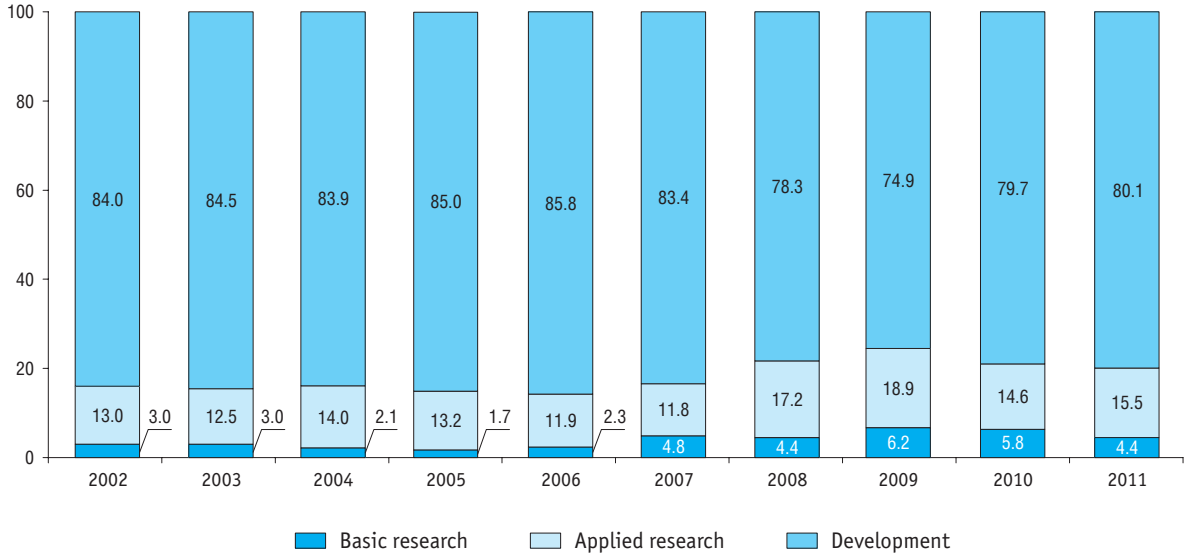
(thousand roubles)

	Total	Natural sciences	Engineering	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
Development	128610778.1	3961919.2	123407753.0	212709.3	336665.5	675975.8	15755.3
			2008				
Intramural current expenditure on R&D	**258764246.7**	**21350501.0**	**232356587.9**	**1490639.1**	**1288264.0**	**2151909.4**	**126345.3**
Basic research	11469378.1	5040603.5	5354137.7	487363.8	334384.0	165460.5	87428.6
Applied research	44593566.0	7377921.4	34628799.5	710801.7	381602.2	1472269.1	22172.1
Development	202701302.6	8931976.1	192373650.7	292473.6	572277.8	514179.8	16744.6
			2009				
Intramural current expenditure on R&D	**287718749.5**	**21492695.7**	**261038294.2**	**1717172.2**	**1311911.1**	**2073906.1**	**84770.2**
Basic research	17916877.3	4293227.7	12035394.7	701941.7	435204.8	388611.6	62496.8
Applied research	54351166.0	8391664.3	43885932.6	789544.3	277117.5	1005033.0	1874.3
Development	215450706.2	8807803.7	205116966.9	225686.2	599588.8	680261.5	20399.1
			2010				
Intramural current expenditure on R&D	**294103827.7**	**26739368.2**	**261926531.0**	**1507276.1**	**1288239.2**	**2550402.8**	**92010.4**
Basic research	16935403.4	3875649.0	11521941.3	565100.5	441953.0	467877.0	62882.6
Applied research	42872394.0	10638493.8	29871209.5	595697.1	321868.8	1436993.9	8130.9
Development	234296030.3	12225225.4	220533380.2	346478.5	524417.4	645531.9	20996.9
			2011				
Intramural current expenditure on R&D	**343121369.6**	**27124981.9**	**308923155.3**	**1872537.9**	**1304510.0**	**3743135.2**	**153049.3**
Basic research	15100475.9	3774239.8	9650966.9	615417.0	431079.6	551669.9	77102.7
Applied research	53220149.5	12693760.4	37294694.2	882555.2	311324.7	2011003.0	26812.0
Development	274800744.2	10656981.7	261977494.2	374565.7	562105.7	1180462.3	49134.6

5.3.26. SHARE OF THE BUSINESS ENTERPRISE SECTOR IN INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



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



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

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average monthly salary, *roubles, 1995 – thousand roubles*	**297.6**	**2519.9**	**4893.6**	**6124.3**	**7525.0**	**9599.6**	**11744.8**	**15203.6**	**19345.3**	**21674.1**	**25359.7**	**29174.9**
As a percentage of that:												
in the national economy (=100%)	63.0	113.3	112.2	111.4	111.7	112.2	110.4	111.8	111.9	116.3	121.0	124.8
in manufacturing (=100%)	64.9	106.5	110.2	109.3	109.9	114.0	115.2	118.1	120.5	130.7	132.9	133.9
in construction (=100%)	50.6	95.5	101.8	99.2	103.0	106.2	108.1	106.1	104.2	119.6	119.8	123.2

5.4. Higher Education Sector

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

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**511**	**526**	**529**	**531**	**526**	**533**	**539**	**540**	**616**	**603**	**603**	**617**	**696**
Universities and other higher education institutions	395	390	388	390	393	402	406	417	500	503	506	517	581
Research institutes	88	107	111	113	108	106	109	106	95	80	78	71	67
Design and construction project organisations	18	19	19	17	17	17	17	14	12	11	11	11	12
Experimental enterprises	1	2	1	2	–	1	–	–	1	1	1	1	2
Others	9	8	10	9	8	7	7	3	8	8	7	17	34

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

(head-count)

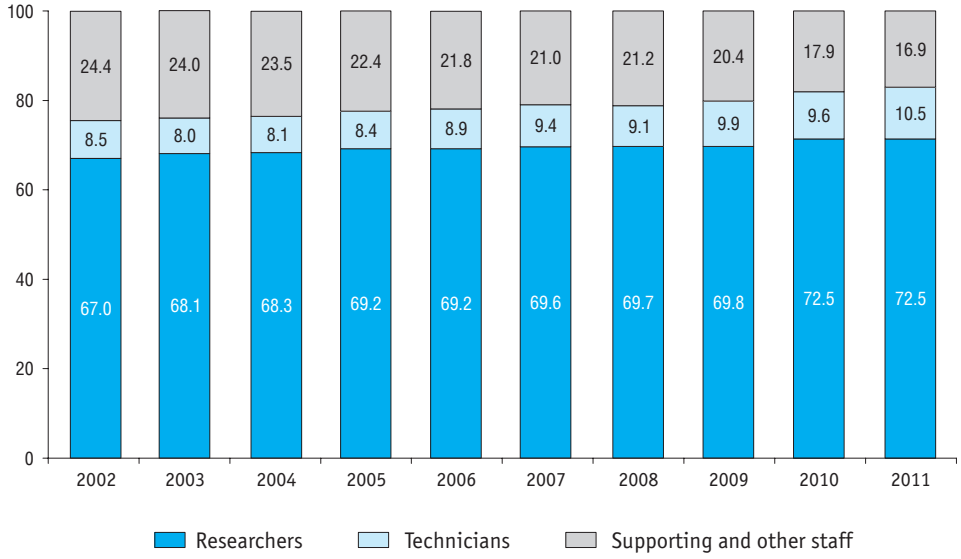
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**52065**	**40787**	**43463**	**44135**	**43120**	**43414**	**43500**	**44473**	**49059**	**47595**	**48498**	**53290**	**59454**
Universities and other higher education institutions	40015	31110	31149	31053	31774	32105	33942	35179	40440	40003	41767	46776	53944
Research institutes	9458	7254	9637	10313	8550	8565	7021	7294	6609	5522	4995	4796	3904
Design and construction project organisations	2170	2198	2302	2325	2306	2189	1991	1878	1843	1783	1446	1392	1197
Experimental enterprises	23	4	4	15	–	15	–	–	2	1	2	2	8
Others	399	221	371	429	490	540	546	122	165	286	288	324	401

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

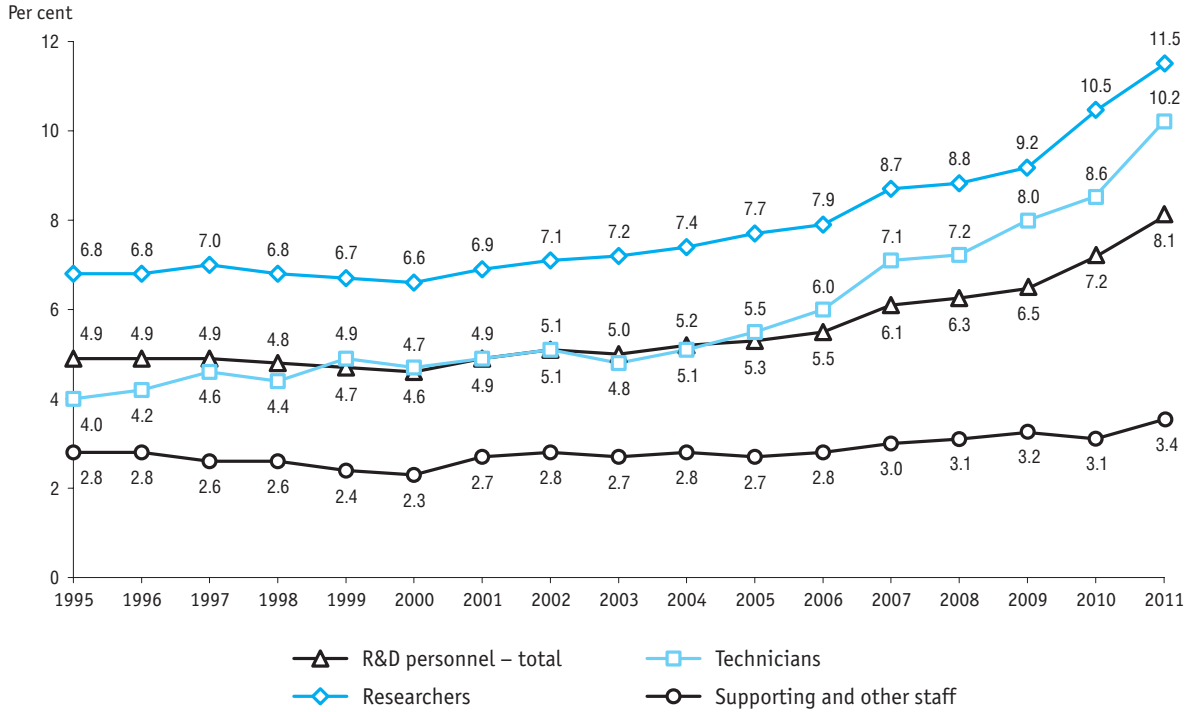
(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	52065	40787	43463	44135	43120	43414	43500	44473	49059	47595	48498	53290	59454
Researchers	35508	28325	29333	29583	29346	29670	30111	30793	34162	33160	33847	38640	43121
Technicians	4010	3509	3665	3771	3434	3534	3658	3972	4606	4349	4778	5095	6256
Supporting staff	7520	5463	6550	6717	6695	6607	6098	5945	6282	6520	6198	6564	7345
Other	5027	3490	3915	4064	3645	3603	3633	3763	4009	3566	3675	2991	2732

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



5.4.5. SHARE OF THE HIGHER EDUCATION SECTOR IN TOTAL R&D PERSONNEL BY OCCUPATION



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

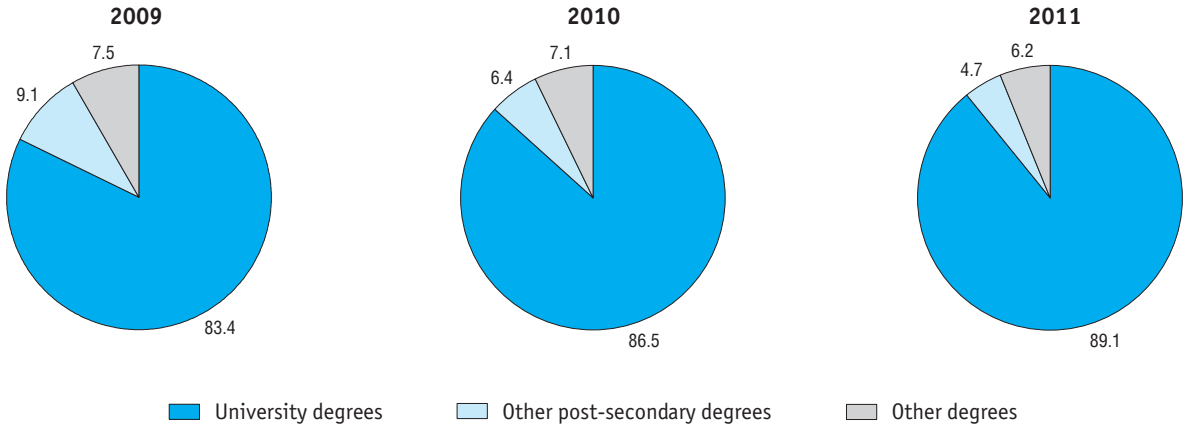
(head-count)

	Total	University degrees	Other post-secondary degrees	Other degrees
R&D personnel				
2005	43500	35159	4430	3911
2007	49059	40025	4723	4311
2008	47595	39160	4523	3912
2009	48498	40456	4424	3618
2010	53290	46112	3394	3784
2011	59454	52965	2811	3678
Researchers				
2005	30111	30111	–	–
2007	34162	34162	–	–
2008	33160	33160	–	–
2009	33847	33847	–	–
2010	38640	38640	–	–
2011	43121	43121	–	–
Technicians				
2005	3658	1079	2082	497
2007	4606	1442	2299	865
2008	4349	1471	2229	649
2009	4778	1861	2125	792
2010	5095	2460	1526	1109
2011	6256	3896	1270	1090

(continued)

	Total	University degrees	Other post-secondary degrees	Other degrees
Supporting staff				
2005	6098	2758	1465	1875
2007	6282	3055	1529	1698
2008	6520	3316	1410	1794
2009	6198	3337	1357	1504
2010	6564	3695	1190	1679
2011	7345	4438	1126	1781
Others				
2005	3633	1211	883	1539
2007	4009	1366	895	1748
2008	3566	1213	884	1469
2009	3675	1411	942	1322
2010	2991	1317	678	996
2011	2732	1510	415	807

5.4.7. PERCENTAGE DISTRIBUTION OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY EDUCATIONAL ATTAINMENT

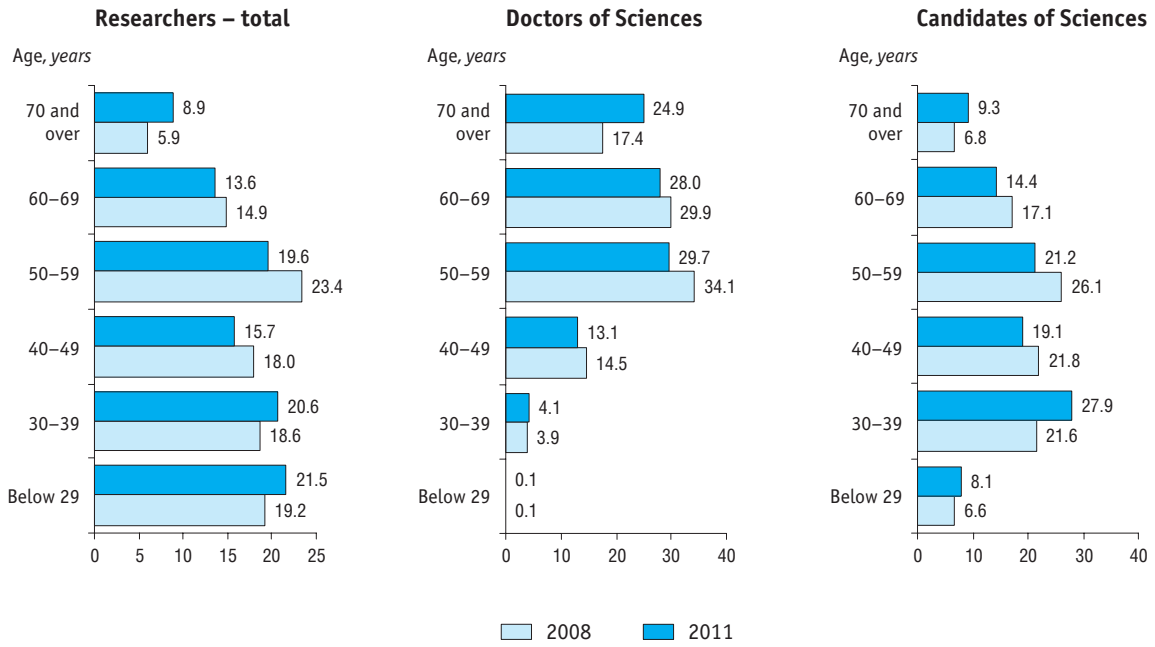


5.4.8. RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY GENDER AND AGE GROUP

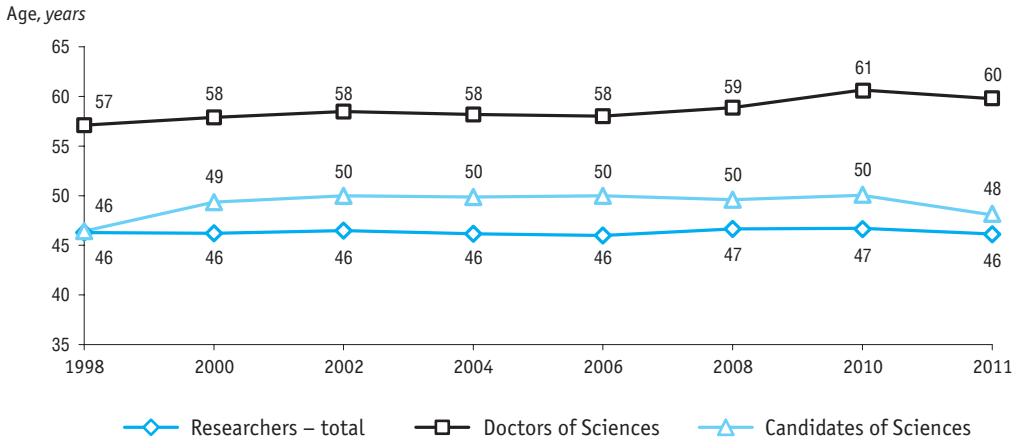
(head-count)

	2008			2011		
	Researchers	Of whom		Researchers	Of whom	
		Doctors of Sciences	Candidates of Sciences		Doctors of Sciences	Candidates of Sciences
Total	**33160**	**3439**	**12040**	**43121**	**5774**	**18728**
Age, *years:*						
below 29	6379	4	792	9284	8	1514
30–39	6164	133	2606	8891	237	5219
40–49	5964	499	2619	6775	754	3575
50–59	7759	1174	3147	8459	1717	3976
60–69	4937	1029	2055	5885	1618	2704
70 and over	1957	600	821	3827	1440	1740
Male	19506	2538	6770	23750	4029	9636
Age, *years:*						
below 29	4055	3	448	5538	4	839
30–39	3284	94	1353	4447	160	2530
40–49	3298	349	1412	3388	449	1702
50–59	4575	834	1837	4544	1118	2101
60–69	3063	791	1205	3485	1236	1521
70 and over	1231	467	515	2348	1062	943
Female	13654	901	5270	19371	1745	9092
Age, *years:*						
below 29	2324	1	344	3746	4	675
30–39	2880	39	1253	4444	77	2689
40–49	2666	150	1207	3387	305	1873
50–59	3184	340	1310	3915	599	1875
60–69	1874	238	850	2400	382	1183
70 and over	726	133	306	1479	378	797

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



5.4.10. AVERAGE AGE OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR

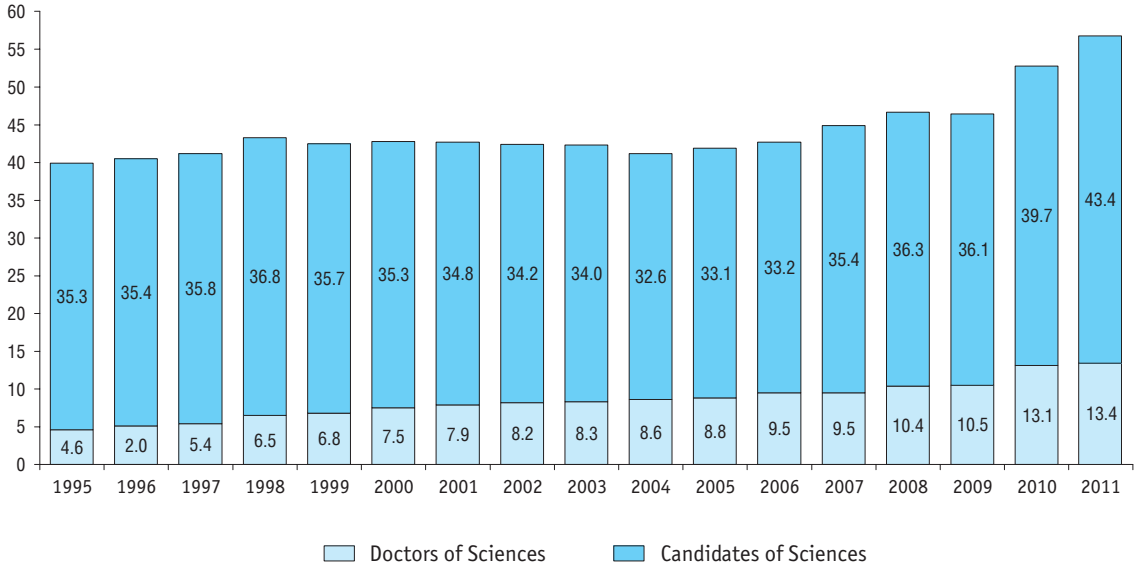


5.4.11. RESEARCHERS WITH SCIENTIFIC DEGREES IN THE HIGHER EDUCATION SECTOR

(head-count)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Researchers with scientific degrees	**14162**	**12113**	**12531**	**12530**	**12432**	**12212**	**12618**	**13153**	**15330**	**15479**	**15774**	**20423**	**24502**
Doctors of Sciences	1617	2120	2310	2425	2447	2538	2654	2924	3252	3439	3568	5068	5774
Candidates of Sciences	12545	9993	10221	10105	9985	9674	9964	10229	12078	12040	12206	15355	18728

5.4.12. RESEARCHERS WITH SCIENTIFIC DEGREES AS A PERCENTAGE OF THE TOTAL NUMBER OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR

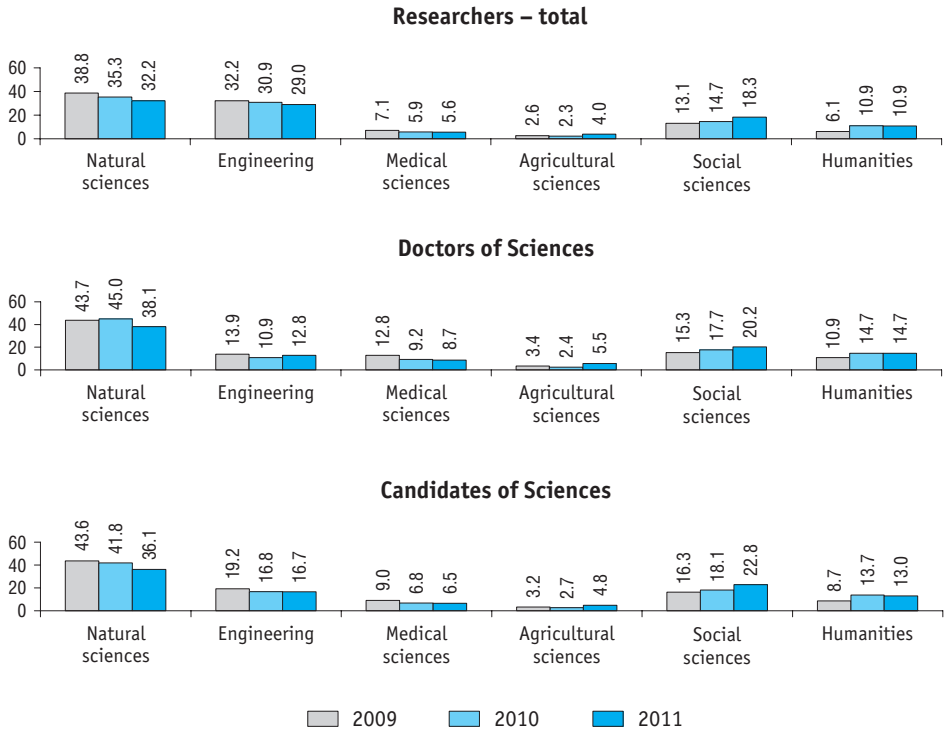


5.4.13. RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

(head-count)

	2008			2009			2010			2011		
	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**	**33847**	**3568**	**12206**	**38640**	**5068**	**15355**	**43121**	**5774**	**18728**
Natural sciences	13111	1535	5244	13126	1560	5320	13652	2283	6424	13897	2198	6770
Engineering	10524	484	2352	10906	495	2346	11938	554	2574	12515	737	3121
Medical sciences	2403	441	1142	2399	455	1104	2263	466	1047	2419	504	1219
Agricultural sciences	933	116	416	892	123	395	894	122	420	1730	320	908
Social sciences	4309	512	1818	4448	547	1985	5664	896	2783	7878	1168	4271
Humanities	1880	351	1068	2076	388	1056	4229	747	2107	4682	847	2439

5.4.14. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY

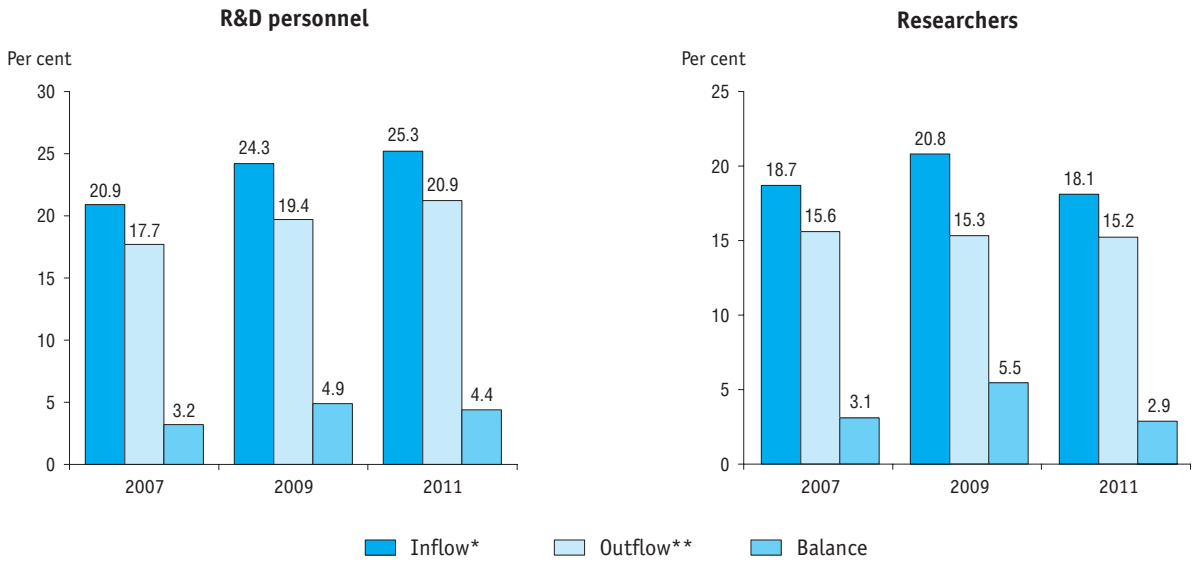


5.4.15. FLOWS OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR BY OCCUPATION

(head-count)

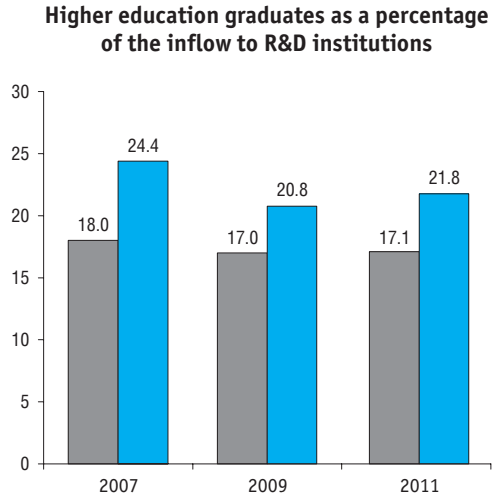
	Number at the beginning of the reference year	Inflow				Outflow				Number at the end of the reference year
		Total	Graduates from higher education institutions	From other research institutes	Others	Total	Voluntary turnover	Due to staff reduction	For other reasons	
Total										
2005	41601	8770	1475	1388	5907	6871	4096	25	2750	43500
2007	47153	10264	1843	1844	6577	8358	5061	42	3255	49059
2009	45565	11766	2005	1583	8178	8833	4805	160	3868	48498
2011	56117	15068	2579	1578	10911	11731	6151	64	5516	59454
Researchers										
2005	28951	5219	1229	1058	2932	4062	2470	16	1576	30111
2007	32895	6385	1560	1309	3516	5118	3098	22	1998	34162
2009	31619	7055	1465	1218	4372	4823	2614	80	2129	33847
2011	41648	7823	1707	1156	4960	6347	3639	42	2666	43121
Technicians										
2005	3451	1030	114	115	801	820	467	1	352	3658
2007	4326	1517	111	172	1234	1234	735	6	493	4606
2009	4352	1960	324	198	1438	1535	823	29	683	4778
2011	4713	3267	398	136	2733	1723	924	8	791	6256
Supporting and other staff										
2005	9199	2521	132	215	2174	1989	1159	8	822	9731
2007	9932	2362	172	363	1827	2006	1228	14	764	10291
2009	9594	2751	216	167	2368	2475	1368	51	1056	9873
2011	9756	3978	474	286	3218	3661	1588	14	2059	10077

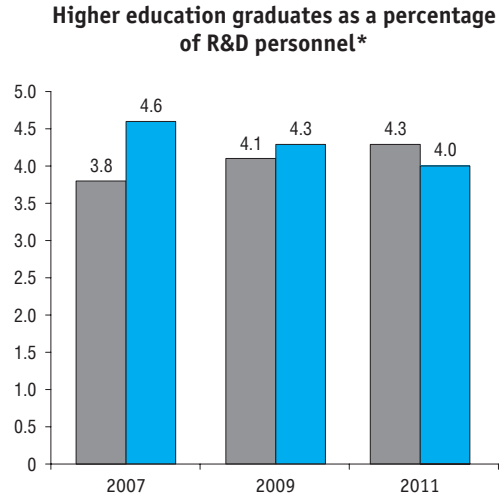
5.4.16. INFLOW AND OUTFLOW OF R&D PERSONNEL IN THE HIGHER EDUCATION SECTOR



* The ratio of the R&D personnel admitted during the year to the number of employees at the end of the year.
** The ratio of the R&D personnel having resigned during the year to the number of employees at the beginning of the year.

5.4.17. INFLOW OF HIGHER EDUCATION GRADUATES TO R&D INSTITUTIONS IN THE HIGHER EDUCATION SECTOR





R&D personnel – total Researchers

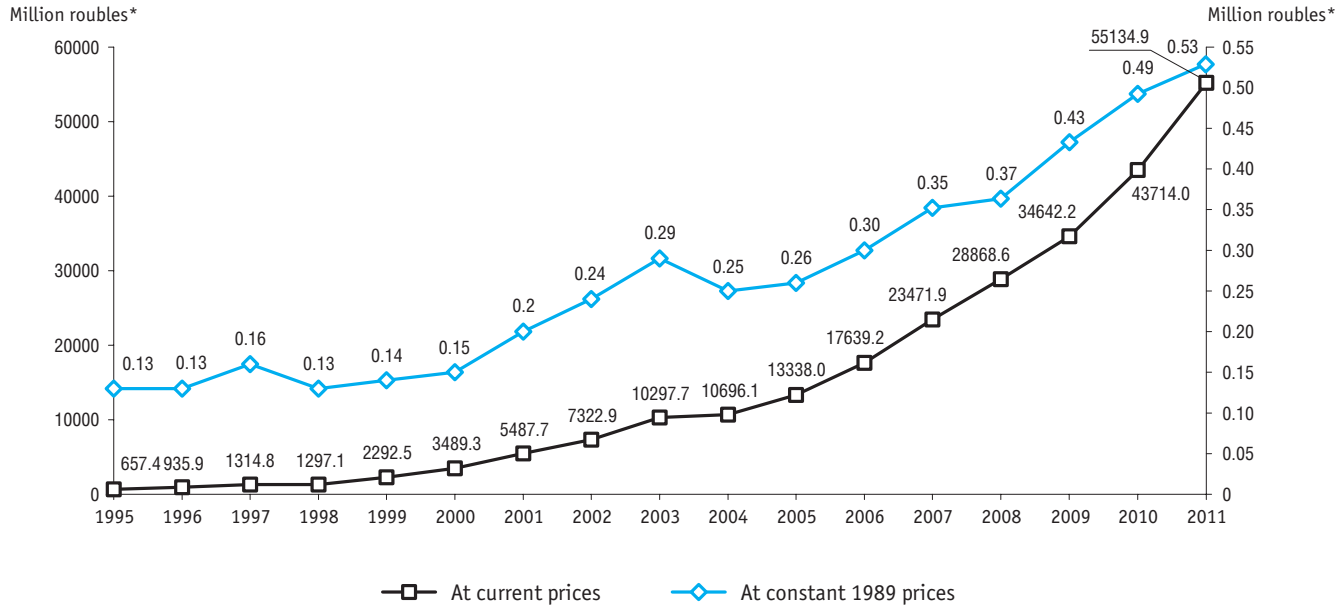
* The ratio of the higher education graduates admitted during the year to the number of employees at the end of the year.

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

(thousand roubles, 1995 – million roubles)

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**657374.0**	**3489342.2**	**7322943.2**	**10297745.0**	**10696125.8**	**13337987.1**	**17639173.8**	**23471870.9**	**28868566.7**	**34642216.7**	**43714007.3**	**55134893.9**
Universities and other higher education institutions	518911.5	2777397.1	5433015.5	8305924.1	8498024.0	10963094.5	14672493.3	20110291.8	25254713.6	30815022.6	38787366.4	51055347.1
Research institutes	102740.0	528449.7	1449217.4	1478121.0	1590604.7	1596818.1	2362999.9	2444732.5	2552781.1	2874500.2	3429235.6	2935458.1
Design and construction project organisations	32238.6	157818.5	393278.2	446923.1	506534.8	519987.1	600446.4	875313.6	869259.6	758521.1	984428.5	809586.0
Experimental enterprises	104.6	78.5	3031.7	–	1688.5	–	–	14145.0	24376.0	22657.0	26584.0	12042.6
Other	3379.3	25598.4	44400.4	66776.8	99273.8	258087.4	3234.2	27388.0	167436.4	171515.8	486392.8	322460.1

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



* Before 1998 – billion roubles.

5.4.20. GROSS DOMESTIC EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT

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

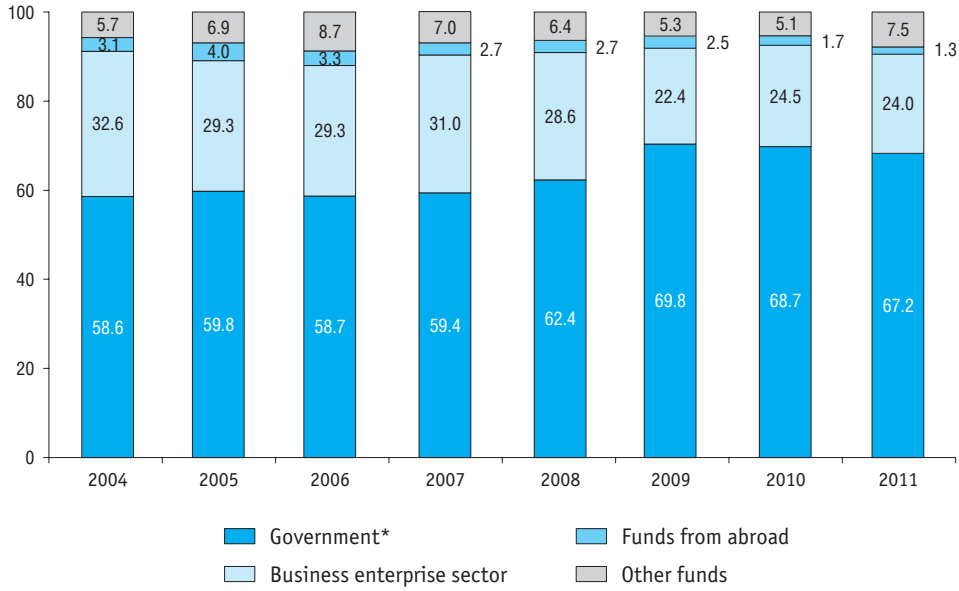
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			At current prices, *thousand roubles, 1995 – million roubles*			
1995	657374.0	440429.9	181015.3	27407.6	1279.1	7242.1
1999	2292507.7	1521173.4	545925.7	91660.8	3873.9	129873.9
2000	3489342.2	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

* Including federal budget appropriations, general university funds and funds of government sector institutions.

(continued)

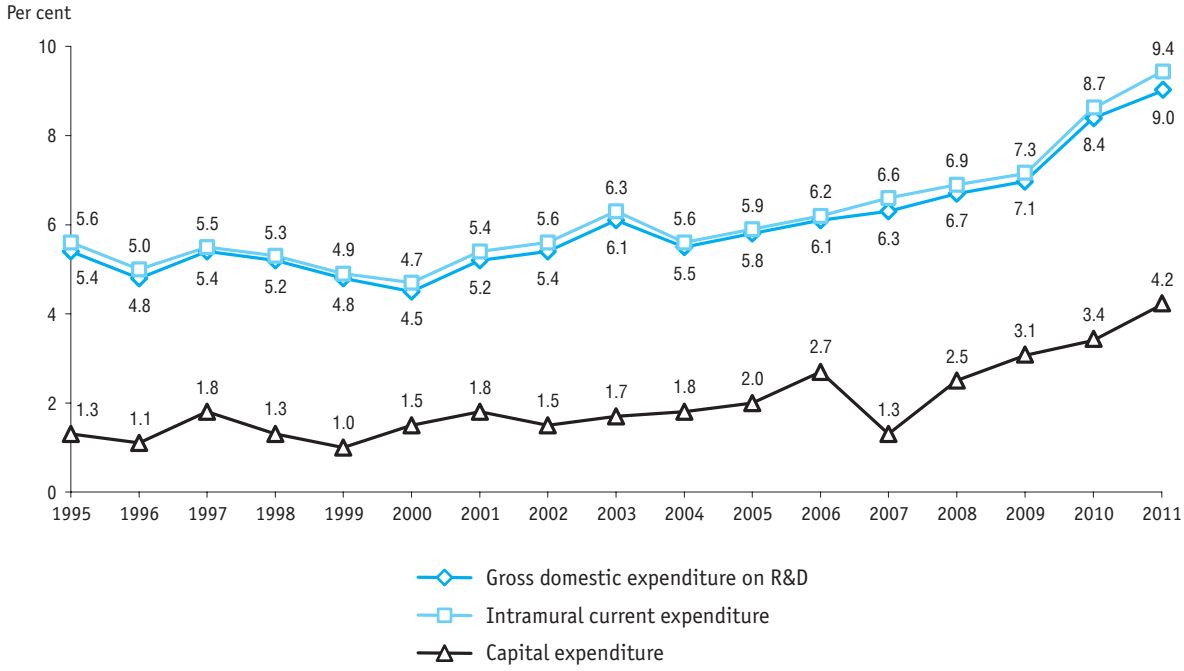
	Total	Government*	Business enterprise sector	Higher education sector	Private non-profit sector	Funds from abroad
			Per cent			
1995	100	67.0	27.5	4.2	0.2	1.1
1999	100	66.4	23.8	4.0	0.2	5.7
2000	100	63.6	27.3	5.1	0.2	3.8
2001	100	62.8	26.5	5.4	0.1	5.2
2002	100	60.9	27.2	5.2	0.2	6.6
2003	100	61.1	27.9	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

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



* Including federal budget appropriations, general university funds, and funds of government sector institutions.

5.4.23. SHARE OF THE HIGHER EDUCATION SECTOR IN GROSS DOMESTIC EXPENDITURE ON R&D BY TYPE OF COSTS



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

(thousand roubles)

	2005	2006	2007	2008	2009	2010	2011
Gross domestic expenditure on R&D	**13337987.1**	**17639173.8**	**23471870.9**	**28868566.7**	**34642216.7**	**43714007.3**	**55134893.9**
Intramural current expenditure	13144292.5	17345713.3	23227988.8	28355126.5	33871885.4	42552245.4	53389079.3
Salaries	6952057.5	9296006.7	13249264.6	16969730.8	20240278.6	25267352.4	31150804.4
Of which for R&D personnel*	3552276.8	4766471.0	6942335.9	9350228.8	11592673.2	14033490.5	16496816.3
Social security payments	1654258.7	2180714.5	2975482.7	3734321.1	4387314.1	5260709.4	7630274.5
Equipment	917350.6	1364145.6	1296943.4	1642182.0	2733966.8	2639343.7	2969583.7
Fixed assets	640478.5	991721.7	614052.6	940687.6	2321870.7	1713278.2	1510968.8
Other material costs	1501392.4	1911830.8	2330311.6	2284544.3	2358266.0	3344896.4	3695390.0
Other current costs	2119233.3	2593015.7	3375986.5	3724348.3	4152059.9	6039943.5	7943026.7
Capital expenditure	193694.6	293460.5	243882.1	513440.2	770331.3	1161761.9	1745814.6
Land and buildings	39711.4	151200.0	18409.5	1571.3	12677.4	14186.1	67000.0
Equipment	104359.6	103001.7	195759.4	480070.1	724609.8	1068873.2	1622614.3
Other capital expenditure	49623.6	39258.8	29713.2	31798.8	33044.1	78702.6	56200.3

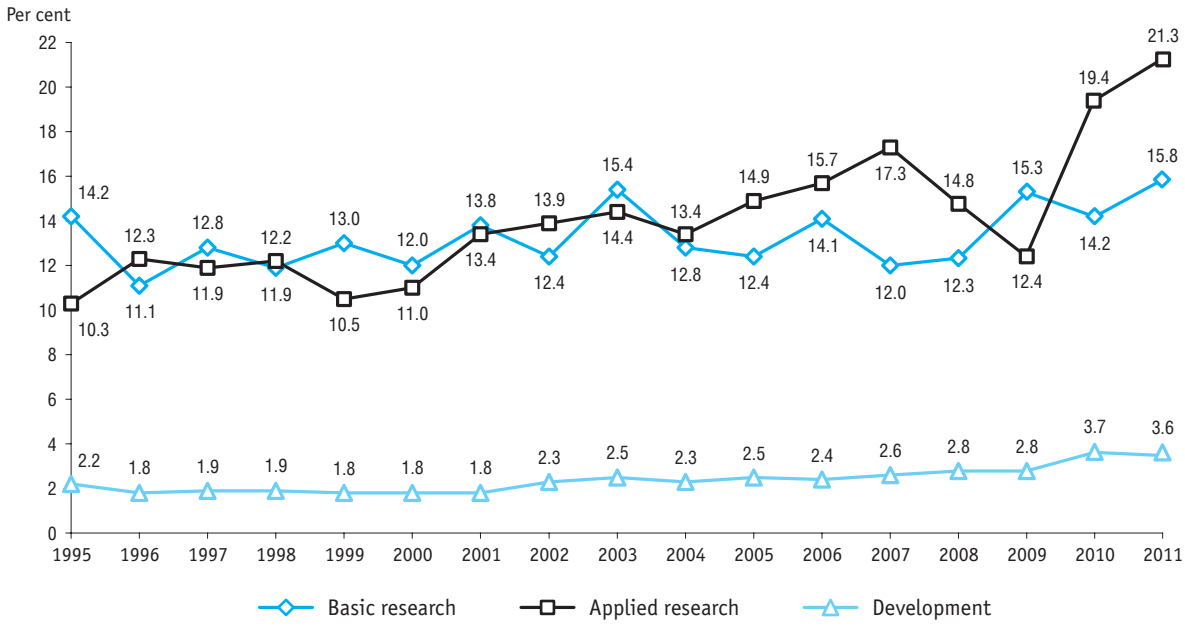
* Excluding those employed on a plural basis and on contracts.

5.4.25. INTRAMURAL CURRENT EXPENDITURE ON R&D IN THE HIGHER EDUCATION SECTOR BY TYPE OF ACTIVITY AND FIELD OF SCIENCE AND TECHNOLOGY

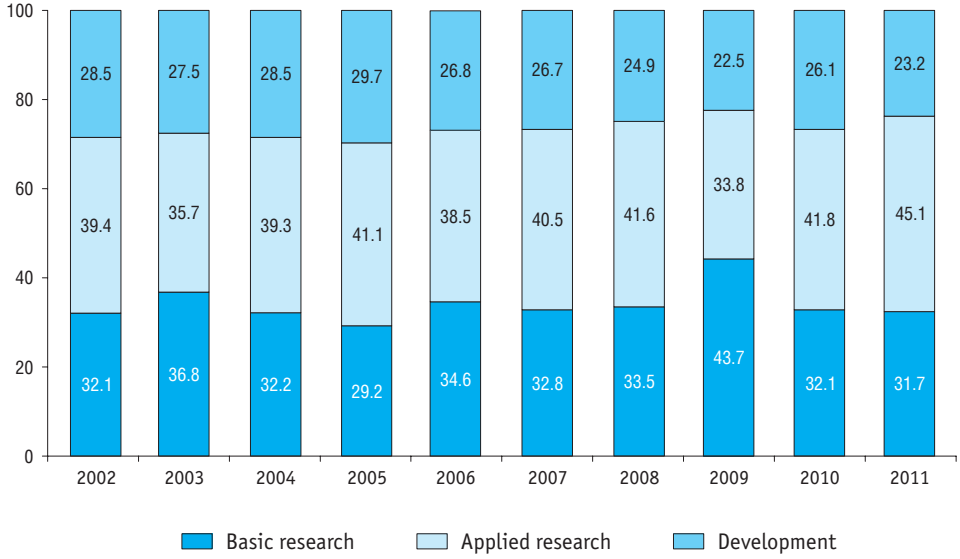
(thousand roubles)

	Total	Natural sciences	Engineering	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
Development	3897554.6	442080.8	3182868.7	68819.7	46474.3	128084.1	29227.0
			2008				
Intramural current expenditure on R&D	**28355126.5**	**8170293.8**	**13010907.6**	**1012345.0**	**732071.3**	**4306737.9**	**1122770.9**
Basic research	9500293.6	5009953.8	2094164.0	313919.6	157697.3	1194109.7	730449.2
Applied research	11789234.9	2482043.3	5381110.5	625888.9	405995.4	2573280.0	320916.8
Development	7065598.0	678296.7	5535633.1	72536.5	168378.6	539348.2	71404.9
			2009				
Intramural current expenditure on R&D	**33871885.4**	**11758520.0**	**14414524.6**	**1077983.7**	**718062.5**	**4653782.2**	**1249012.4**
Basic research	14799057.5	8818590.3	2761224.8	451826.3	205557.5	1721616.5	840242.1
Applied research	11450223.9	2142807.6	5490334.9	573316.0	394380.6	2533719.6	315665.2
Development	7622604.0	797122.1	6162964.9	52841.4	118124.4	398446.1	93105.1
			2010				
Intramural current expenditure on R&D	**42552245.4**	**12076614.1**	**20864675.6**	**1309942.7**	**730315.2**	**6137791.2**	**1432906.6**
Basic research	13647906.8	7585787.8	2819934.7	472436.1	145701.5	1919937.8	704108.9
Applied research	17804762.0	3177035.8	9056919.5	680400.6	486773.7	3723764.3	679868.1
Development	11099576.6	1313790.5	8987821.4	157106.0	97840.0	494089.1	48929.6
			2011				
Intramural current expenditure on R&D	**53389079.3**	**15437217.8**	**24872185.8**	**1998847.3**	**1205802.3**	**7979786.2**	**1895239.9**
Basic research	16943421.4	9245084.1	3405025.7	796436.8	179798.8	2145551.0	1171525.0
Applied research	24053848.5	4636085.0	11696505.8	982826.2	797822.7	5297493.2	643115.6
Development	12391809.4	1556048.7	9770654.3	219584.3	228180.8	536742.0	80599.3

5.4.26. SHARE OF THE HIGHER EDUCATION SECTOR IN INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY



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



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

	1995	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average monthly salary, *roubles, 1995 – thousand roubles*	**280.1**	**1400.3**	**3476.9**	**4749.1**	**5088.8**	**7042.0**	**8348.7**	**12233.1**	**16812.7**	**21191.5**	**23716.4**	**24963.9**
As a percentage of that:												
in the national economy (=100%)	59.3	63.0	79.7	86.4	75.5	82.3	78.5	90.0	97.2	113.7	113.2	106.8
in manufacturing (=100%)	61.1	59.2	78.3	84.8	74.3	83.6	81.9	95.0	104.8	127.8	124.3	114.6
in construction (=100%)	47.7	53.0	72.3	76.9	69.7	77.9	76.8	85.3	90.5	116.9	112.0	105.4

6. R&D Output

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

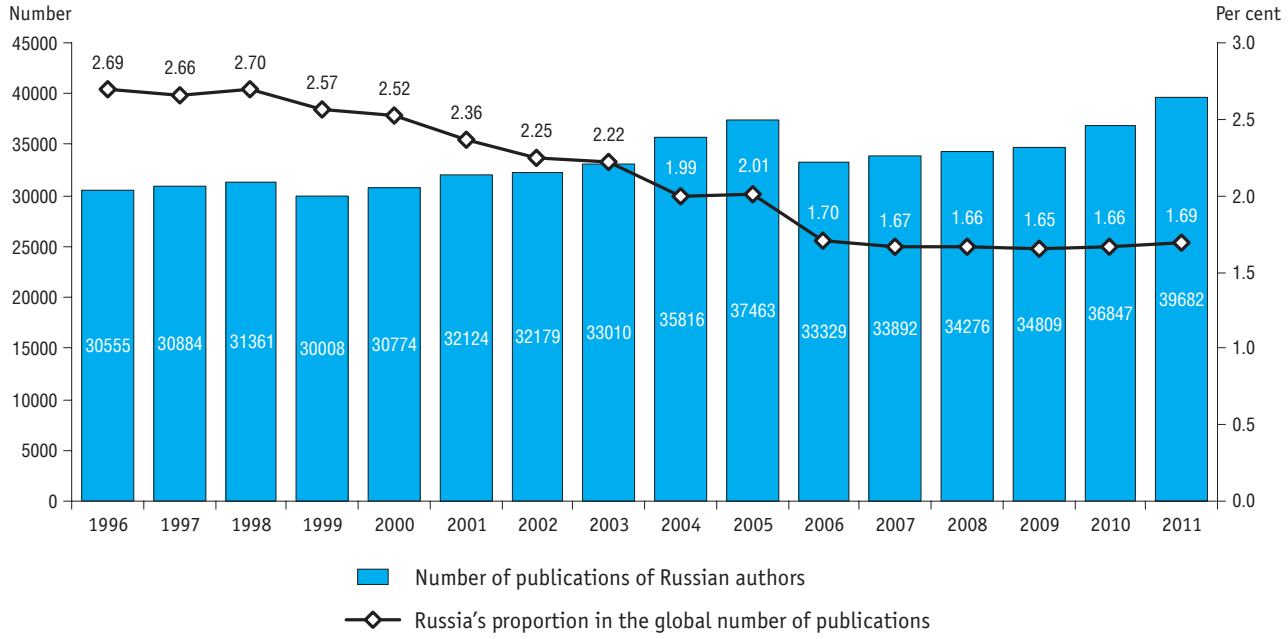
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Publications – total	**30008**	**30774**	**32124**	**32179**	**33010**	**35816**	**37463**	**33329**	**33892**	**34276**	**34809**	**36847**	**39682**
Articles	28242	27959	28522	26531	27097	28167	28847	26238	27640	28974	29492	30580	32301
Conference papers	1163	2020	2812	4566	4468	6206	6931	5736	5264	4194	4208	5005	4868
Reviews	522	641	563	778	1122	1147	1424	1035	692	658	595	739	1098
Other	81	154	227	304	323	296	261	320	296	450	514	523	1415

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

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Publications – total	**31919**	**32632**	**29786**	**31235**	**29808**	**30665**	**30499**	**29556**	**31115**	**33221**	**33292**	**31815**	**32624**
Articles	26957	26971	25157	25572	24891	24736	24371	23701	25031	26876	27507	26738	28138
Conference papers	6204	7286	6355	7097	6711	6792	6444	5790	5896	5048	4424	3106	2491
Reviews	599	632	590	613	672	711	678	749	766	865	865	750	702

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

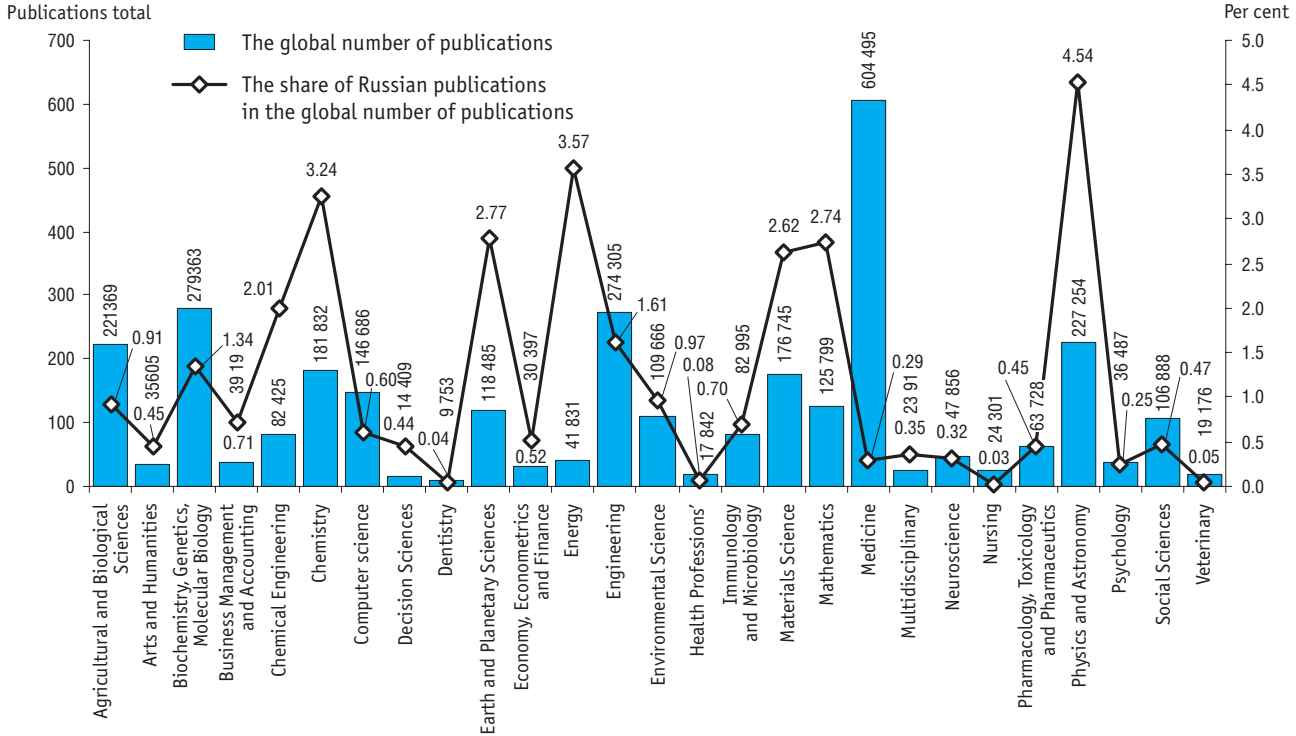
6.3. PUBLICATIONS OF RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS*



* Here and below in sections 6.4 and 6.5 the term 'publication' refers to all types of documents (articles, reviews, reports and others).

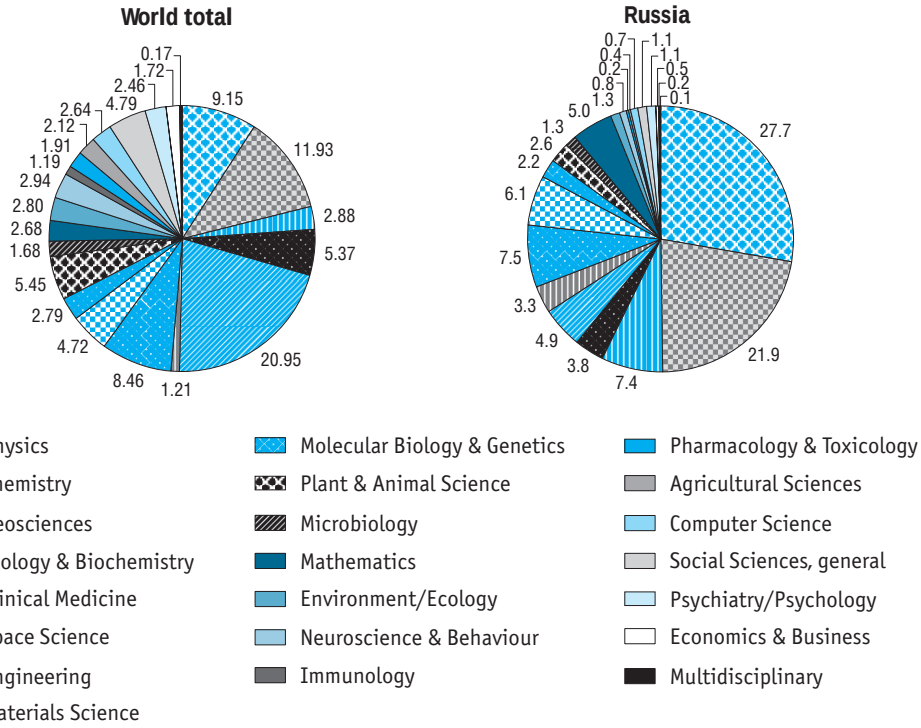
6.4. PUBLICATIONS OF RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE

6.5. SHARE OF PUBLICATIONS OF RUSSIAN AUTHORS IN THE GLOBAL NUMBER OF PUBLICATIONS INDEXED IN SCOPUS BY FIELD OF SCIENCE: 2011*



* According to 'SCImago Journal & Country Rank'.

6.6. PERCENTAGE DISTRIBUTION OF PUBLICATIONS OF RUSSIAN AUTHORS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE BY FIELD OF SCIENCE: 2007–2011*



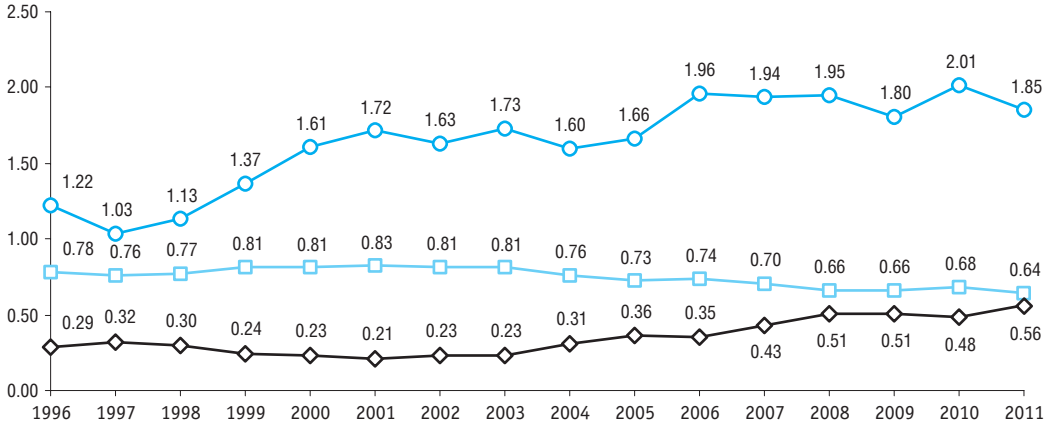
* Source: 'Essential Science Indicators' (ESI) by Thomson Reuters.

6.7. PATENT APPLICATIONS AND PATENTS GRANTED

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Patent applications filed in the Russian Federation	22202	28688	29989	29225	30651	30192	32254	37691	39439	41849	38564	42500	41414
By residents	17551	23377	24777	23712	24969	22985	23644	27884	27505	27712	25598	28722	26495
By non-residents	4651	5311	5212	5513	5682	7207	8610	9807	11934	14137	12966	13778	14919
Patents granted in the Russian Federation	31556*	17592	16292	18114	24726	23191	23390	23299	23028	28808	34824	30322	29999
To residents	20861	14444	13779	15140	20621	19123	19447	19138	18431	22260	26294	21627	20339
To non-residents	4772	3148	2513	2974	4105	4068	3943	4161	4597	6548	8530	8695	9660
Patents valid with the indication of the Russian Federation	76186	144325	149684	102568	106717	108721	123089	123882	129910	147067	170264	181904	168558

* With regard to patents granted in exchange for invention certificates.

6.8. INDICATORS OF PATENT ACTIVITY



Country inventiveness ratio – resident patent applications filed in the Russian Federation per 10 000 population

Country self-sufficiency ratio – the ratio of resident patent applications to total patent applications filed in the Russian Federation

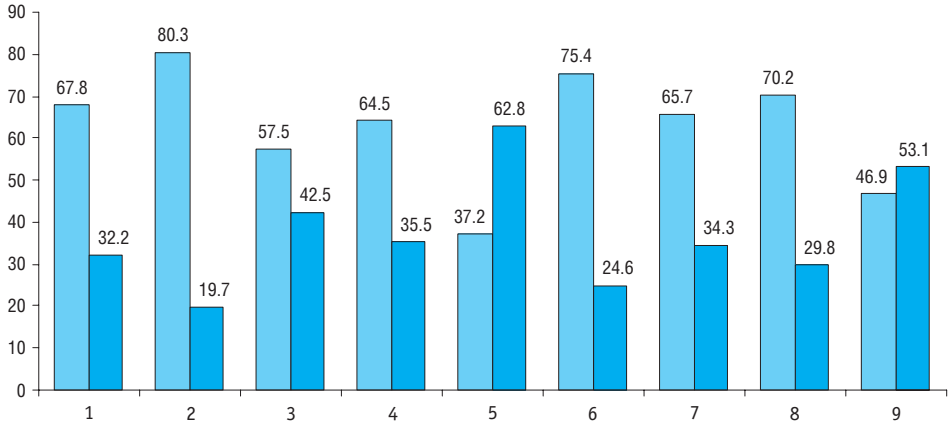
Country dependency ratio – the ratio of non-resident patent applications to resident patent applications filed in the Russian Federation

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

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**25633**	**17592**	**16292**	**18114**	**24726**	**23191**	**23390**	**23299**	**23028**	**28808**	**34824**	**30322**	**29999**
A. Human Necessities	4207	4348	3764	4419	7369	6190	6703	6738	6360	8025	11043	8468	8907
B. Performing Operations; Transporting	6129	2906	2923	2939	3902	3729	3669	3897	3584	4298	5427	4711	4412
C. Chemistry; Metallurgy	4529	3332	2929	3265	4221	4051	3645	3557	3702	5416	5508	5167	5512
D. Textiles; Paper	437	196	200	184	247	216	216	183	221	259	310	320	301
E. Fixed Constructions	2042	1156	1298	1442	1596	1656	1659	1626	1536	1689	2086	1977	1603
F. Mechanical Engineering; Lighting; Heating; Weapons	3033	2143	2172	2274	2934	2785	2634	2706	2679	2928	3537	3062	2761
G. Physics	3083	2172	1903	2279	2648	2825	3068	2911	3048	3632	4160	3734	3881
H. Electricity	2173	1339	1103	1312	1809	1739	1796	1681	1898	2561	2753	2883	2622

* Patents granted to residents and non-residents.

6.10. PERCENTAGE DISTRIBUTION OF PATENTS GRANTED IN THE RUSSIAN FEDERATION BY ASSIGNEE AND SECTION OF THE INTERNATIONAL PATENT CLASSIFICATION: 2011



1 – Total
2 – Human Necessities
3 – Performing Operations; Transporting
4 – Chemistry; Metallurgy
5 – Textiles; Paper
6 – Fixed Constructions
7 – Mechanical Engineering; Lighting; Heating; Weapons
8 – Physics
9 – Electricity

Patents granted to residents
Patents granted to non-residents

6.11. UTILITY MODEL PATENT APPLICATIONS AND PATENTS GRANTED

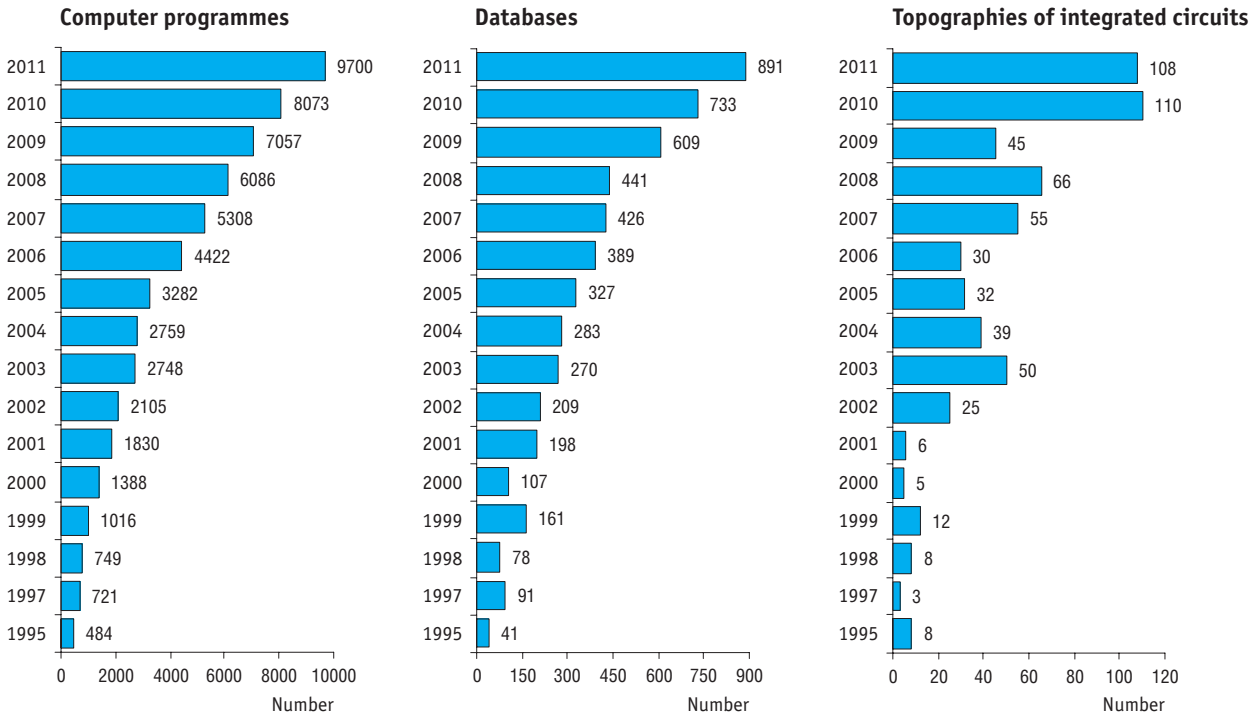
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Patent applications filed in the Russian Federation	2039	4631	6029	6696	7622	8948	9473	9699	10075	10995	11153	12262	13241
By residents	1997	4549	5863	6511	7400	8648	9082	9265	9588	10483	10728	11757	12584
By non-residents	42	82	166	185	222	300	391	434	487	512	425	505	657
Patents granted in the Russian Federation	1207	4098	4842	5611	8311	8503	7242	9568	9757	9673	10919	10581	11079
To residents	1195	4041	4738	5448	8053	8230	6958	9195	9311	9250	10500	10187	10571
To non-residents	12	57	104	163	258	273	284	373	446	423	419	394	508
Patents valid with the indication of the Russian Federation	2971	15498	20052	20073	24103	29191	28364	33033	35082	41092	48170	54848	46876

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

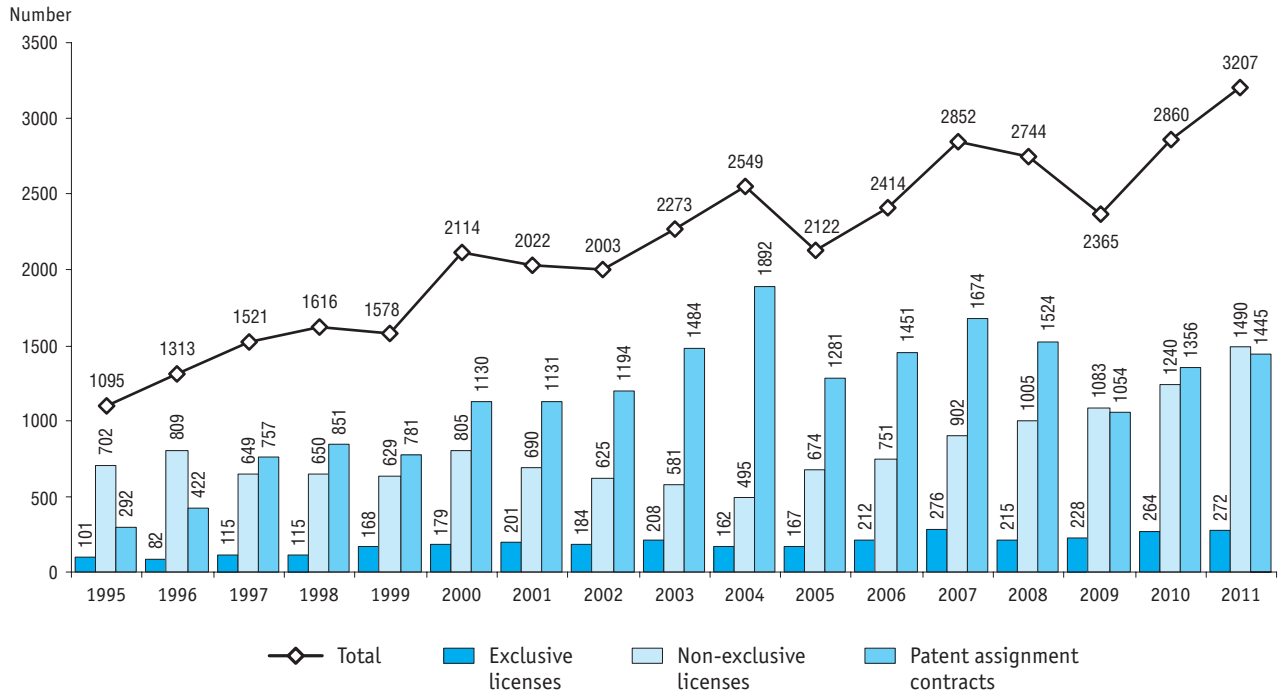
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**1207**	**4098**	**4842**	**5611**	**8311**	**8503**	**7242**	**9568**	**9757**	**9673**	**10919**	**10581**	**11079**
A. Human Necessities	190	835	967	1115	1531	1585	1344	1644	1642	1630	1803	1914	1833
B. Performing Operations; Transporting	311	1004	1206	1396	2078	2051	1741	2301	2353	2357	2631	2411	2518
C. Chemistry; Metallurgy	30	145	149	191	295	276	289	395	345	434	443	398	340
D. Textiles; Paper	37	73	87	58	90	71	73	63	61	55	59	57	68
E. Fixed Constructions	115	465	532	650	1107	1182	1022	1431	1501	1331	1517	1503	1459
F. Mechanical Engineering; Lighting; Heating; Weapons	235	679	759	878	1295	1331	1111	1394	1431	1458	1612	1701	1815
G. Physics	150	490	673	818	1087	1169	949	1424	1403	1450	1685	1580	1842
H. Electricity	139	407	469	505	828	838	713	916	1021	958	1169	1017	1204

* Patents granted to residents and non-residents.

6.13. REGISTRATION OF INTELLECTUAL PROPERTY IN THE FIELD OF INFORMATION TECHNOLOGY



6.14. REGISTRATION OF INTERNAL LICENSE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS*

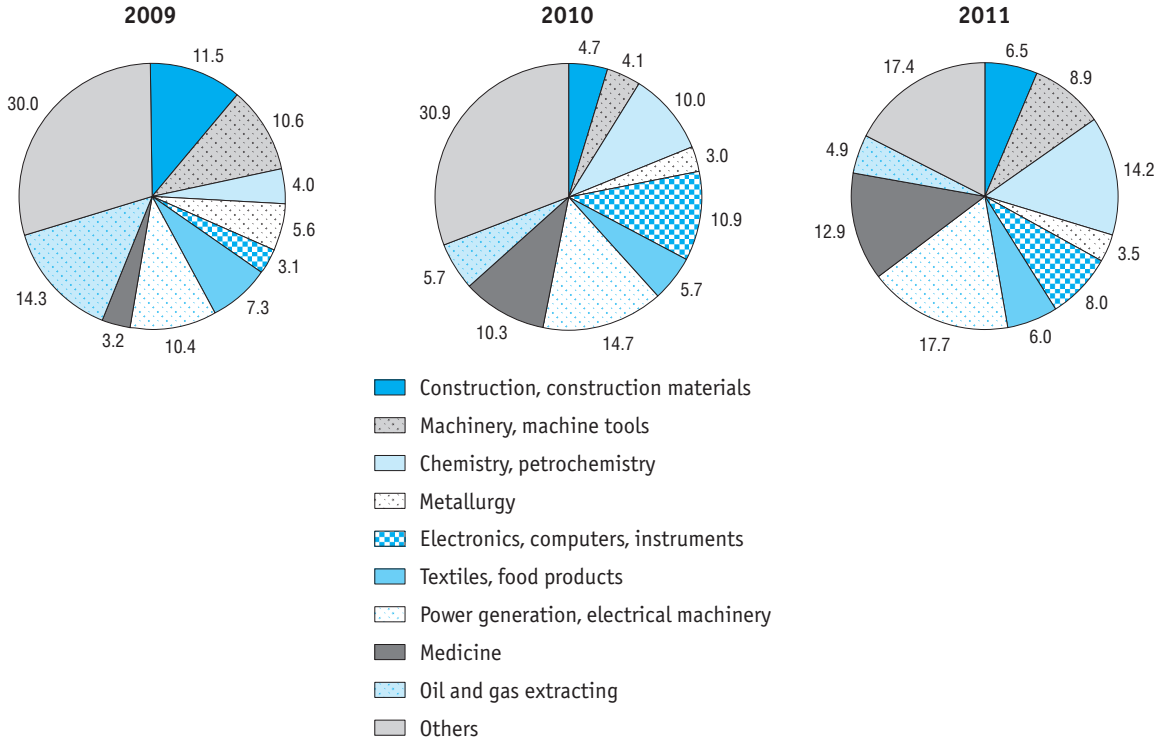


* Including patents on inventions, utility models, and industrial designs.

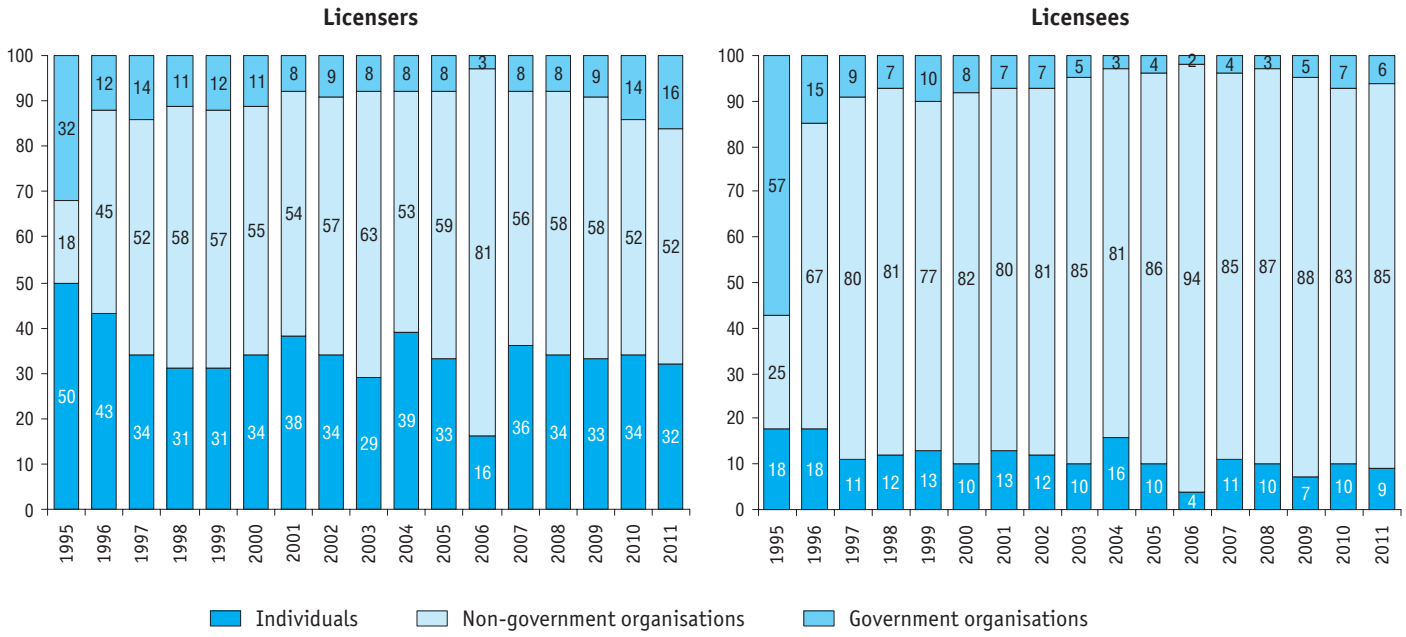
6.15. REGISTRATION OF INTERNAL LICENSE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY TECHNOLOGY FIELD

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**1095**	**2114**	**2022**	**2003**	**2273**	**2549**	**2122**	**2414**	**2852**	**2744**	**2365**	**2860**	**3207**
I. Construction, construction materials	104	89	116	81	125	104	108	160	423	266	272	135	207
II. Machinery, machine tools	102	345	312	323	438	410	417	414	366	373	250	118	285
III. Chemistry, petrochemistry	150	203	270	181	297	251	268	500	120	94	94	286	454
IV. Metallurgy	55	85	62	87	82	158	69	181	245	186	133	86	113
V. Electronics, computers, instruments	87	78	104	147	153	226	165	157	137	101	73	311	257
VI. Textiles, food products	166	323	268	266	362	459	105	160	211	186	173	163	194
VII. Power generation, electrical machinery	55	150	117	141	128	265	223	220	390	364	247	421	567
VIII. Medicine	230	264	288	289	373	276	249	295	120	140	76	294	414
IX. Oil and gas extracting	49	224	131	91	124	139	136	100	434	449	338	162	158
X. Others	97	353	354	397	191	261	382	227	406	585	709	884	558

6.16. PERCENTAGE DISTRIBUTION OF INTERNAL LICENSE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY TECHNOLOGY FIELD



6.17. PERCENTAGE DISTRIBUTION OF INTERNAL LICENSE AGREEMENTS AND PATENT ASSIGNMENT CONTRACTS BY CATEGORY OF PARTNERS



6.18. TECHNOLOGY BALANCE OF PAYMENTS BY CATEGORY OF CONTRACTS

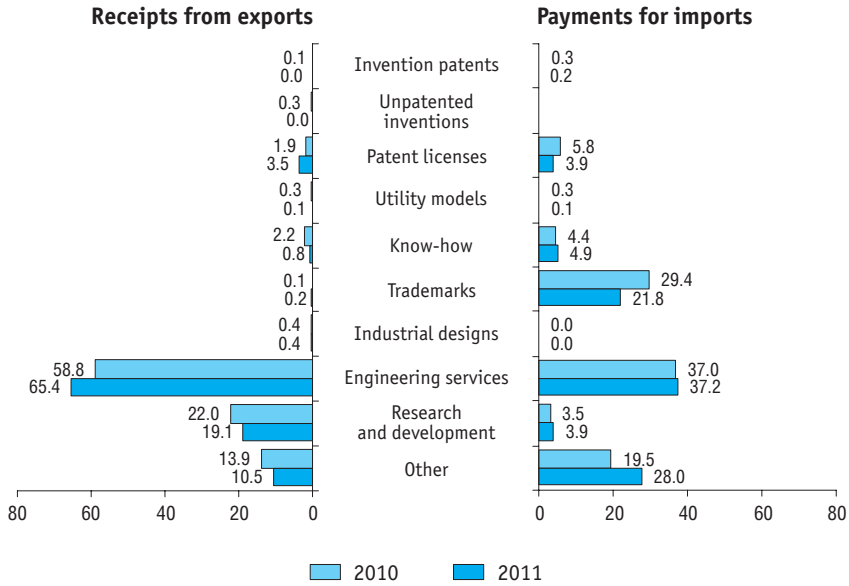
(thousand US dollars)

	Total	Invention patents	Unpatented inventions	Patent licenses	Utility models	Know-how	Trademarks	Industrial designs	Engineering services	Research and development	Other
Receipts from exports											
2000	203493.5	65.8	14.8	421.9	…	2333.5	11497.0	284.2	139307.1	23880.2	25689.0
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
Payments for imports											
2000	182908.0	255.5	792.0	2530.2	…	11122.0	31122.4	1044.2	110171.3	2268.3	23602.1
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
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

(continued)

	Total	Invention patents	Unpatented inventions	Patent licenses	Utility models	Know-how	Trademarks	Industrial designs	Engineering services	Research and development	Other
					Balance of payments						
2000	20585.5	-189.7	-777.2	-2108.3	…	-8788.5	-19625.4	-760.0	29135.8	21611.9	2086.9
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	8 020.6	-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

6.19. PERCENTAGE DISTRIBUTION OF TECHNOLOGY EXPORTS AND IMPORTS BY CATEGORY OF CONTRACTS



6.20. TECHNOLOGY BALANCE OF PAYMENTS BY COUNTRY*

(thousand US dollars)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Total	**618184.5**	**627887.5**	**584656.9**	**1619031.6**	**1425983.3**	**1862566.6**	**-1000847.1**	**-798095.8**	**-1277909.7**
CIS countries	**78007.3**	**103958.0**	**92601.3**	**33071.9**	**38536.8**	**47160.7**	**44935.4**	**65421.2**	**45440.6**
Armenia	179.5	391.6	748.7	1156.6	2170.6	2642.7	-977.1	-1779.0	-1894.0
Azerbaijan	1859.3	6919.3	4550.8	320.0	1278.8	46.2	1539.3	5640.5	4504.6
Belarus	20035.7	24344.9	24268.7	7332.5	7473.8	7749.3	12703.2	16871.1	16519.4
Kazakhstan	26760.7	41080.9	31330.0	4558.3	5966.9	5156.9	22202.4	35114.0	26173.1
Kyrgyzstan	4014.2	2778.0	2931.5	1.7	–	-	4012.5	2778.0	2931.5
Republic of Moldova	856.8	271.6	468.4	–	1.5	10.4	856.8	270.1	458.0
Tajikistan	5105.7	7484.8	3635.7	101.6	–	3.9	5004.1	7484.8	3631.8
Turkmenistan	50.0	50.0	14.3	3.0	–	43.4	47.0	50.0	-29.1
Ukraine	15351.3	15048.2	19104.2	19555.0	21405.7	31430.4	-4203.7	-6357.5	-12326.2
Uzbekistan	3794.1	5588.7	5549.0	43.2	239.5	77.5	3750.9	5349.2	5471.5
OECD countries	**264903.8**	**252625.9**	**222006.2**	**1251606.4**	**1227931.3**	**1657411.6**	**-986702.6**	**-975305.4**	**-1435405.4**
Australia	105.4	3.5	54.3	30.0	290.0	782.7	75.4	-286.5	-728.4
Austria	453.1	1118.1	795.5	115248.3	92593.8	46866.7	-114795.2	-91475.7	-46071.2
Belgium	2245.0	719.8	804.0	20263.8	23555.4	78698.9	-18018.8	-22835.6	-77894.9
Canada	1447.6	1360.2	2086.6	55888.4	68531.3	131427.2	-54440.8	-67171.1	-129340.6
Chile	–	417.0	–	215.5	215.5	9.2	-215.5	201.5	-9.2
Czech Republic	416.6	292.5	1905.7	18873.7	10089.7	18520.3	-18457.1	-9797.2	-16614.6
Denmark	3115.1	1053.7	801.2	37922.3	27228.7	29990.0	-34807.2	-26175.0	-29188.8
Estonia	3951.7	768.5	1723.5	593.0	533.5	33938.8	3358.7	235.0	-32215.3
Finland	4019.4	3203.7	7782.7	40773.3	33797.1	30225.2	-36753.9	-30593.4	-22442.5
France	25878.2	10347.8	7345.4	36947.7	50984.8	150322.8	-11069.5	-40637.0	-142977.4
Germany	43003.9	45020.5	30810.9	147471.4	187132.1	229712.4	-104467.5	-142111.6	-198901.5

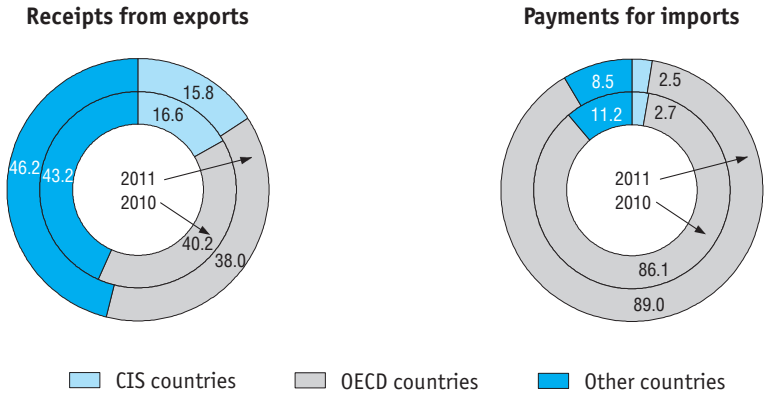
(continued)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Greece	916.9	185.1	61.4	275.1	197.7	7748.7	641.8	-12.6	-7687.3
Hungary	125.0	21.5	573.2	237.7	292.8	154.0	-112.7	-271.3	419.2
Iceland	–	4.9	–	–	–	–	–	4.9	–
Italy	6352.5	8133.4	7570.3	26921.8	49334.9	25062.6	-20569.3	-41201.5	-17492.3
Ireland	1716.6	1670.7	753.2	2521.0	1438.3	4706.3	-804.4	232.4	-3953.1
Israel	854.7	2743.5	100.1	239.8	556.6	221.5	614.9	2186.9	-121.4
Japan	4961.0	5952.4	5576.3	19342.4	18569.7	27133.4	-14381.4	-12617.3	-21557.1
Luxembourg	1.5	0.8	69.3	4183.7	6513.2	11739.3	-4182.2	-6512.4	-11670.0
Mexico	–	–	15.8	–	–	–	–	–	15.8
Netherlands	26483.7	23395.6	24141.8	112330.5	76208.1	118137.3	-85846.8	-52812.5	-93995.5
New Zealand	19.3	-	-	0.4	0.5	20.5	18.9	-0.5	-20.5
Norway	6542.5	11842.8	12688.7	11520.4	4543.8	6687.0	-4977.9	7299.0	6001.7
Poland	439.0	520.5	235.3	5717.8	32296.4	9953.1	-5278.8	-31775.9	-9717.8
Portugal	6.0	5.6	–	51.7	–	4.3	-45.7	5.6	-4.3
Republic of Korea	37388.9	19476.0	24978.9	3743.7	10056.2	15766.6	33645.2	9419.8	9212.3
Slovakia	281.7	13835.5	294.1	2765.3	1531.0	2699.6	-2483.6	12304.5	-2405.5
Slovenia	67.5	1644.6	867.9	213.4	1443.0	2821.8	-145.9	201.6	-1953.9
Spain	365.8	39.5	64.3	4489.7	18382.1	8289.6	-4123.9	-18342.6	-8225.3
Sweden	3259.9	768.5	364.4	6150.0	15598.5	57405.1	-2890.1	-14830.0	-57040.7
Switzerland	11808.4	6551.2	9947.0	225767.5	246627.1	126158.5	-213959.1	-240075.9	-116211.5
Turkey	6508.0	1582.6	427.4	5172.1	6826.4	4179.2	1335.9	-5243.8	-3751.8
United Kingdom	18343.7	30270.8	17303.4	89317.3	95187.1	110648.4	-70973.6	-64916.3	-93345.0
USA	53825.2	59675.1	61863.6	256417.7	147376.0	367380.6	-202592.5	-87700.9	-305517.0

(continued)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Other countries	**275273.4**	**271303.6**	**270049.4**	**334353.3**	**159515.2**	**157994.3**	**-59079.9**	**111788.4**	**112055.1**
Brazil	520.5	2577	879.9	6.5	3.9	–	514.0	2573.1	879.9
Bulgaria	124988.2	45326.4	28342.9	87025.4	28122.3	7347.2	37962.8	17204.1	20995.7
China	19429.2	22640.3	61736.2	2504.8	3009.8	970.9	16924.4	19630.5	60765.3
Cyprus	6998.0	8616.2	7094.2	113771.3	72323.1	65658.8	-106773.3	-63706.9	-58564.6
Georgia	877.5	1200.2	875.9	–	179.0	24.0	877.5	1021.2	851.9
Hong Kong	4793.7	4138.7	3997.4	879.0	912.4	–	3914.7	3226.3	3997.4
India	19034.4	34820.3	43475.8	379.4	588.5	229.3	18655.0	34231.8	43246.5
Iran	25308.7	67576.7	15232.8	279.0	201	666.0	25029.7	67375.7	14566.8
Romania	1060.0	245.9	514.6	–	69.8	136.3	1060.0	176.1	378.3
Singapore	11916.9	7660.6	10513.0	207.6	959.2	–	11709.3	6701.4	10513.0
South Africa	5918.2	30602.5	35932.7	859.5	12.8	20960.5	5058.7	30589.7	14972.2
Taiwan	38.9	4.1	–	–	2300.0	–	38.9	-2295.9	–
Other	54389.2	45894.7	61454.0	128440.8	50833.4	62001.3	-74051.6	-4938.7	-547.3

6.21. PERCENTAGE DISTRIBUTION OF TECHNOLOGY EXPORTS AND IMPORTS BY COUNTRY GROUPS



6.22. TECHNOLOGY BALANCE OF PAYMENTS BY SECTOR OF PERFORMANCE

(thousand US dollars)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Total	**618184.5**	**627887.5**	**584656.9**	**1619031.6**	**1425983.3**	**1862566.6**	**-1000847.1**	**-798095.8**	**-1277909.7**
Sectors of performance:									
government	144221.7	118457.6	154869.6	19006.9	29532.3	38154.5	125214.8	88925.3	116715.1
business enterprise	472436.7	508375.8	426003.6	1600019.4	1396436.3	1824146.3	-1127582.7	-888060.5	-1398142.7
higher education	1526.1	1054.1	1426.8	4.3	12.5	264.2	1521.8	1041.6	1162.6
private non-profit	–	–	2356.9	1.0	2.2	1.6	-1.0	-2.2	2355.3

6.23. TECHNOLOGY BALANCE OF PAYMENTS BY ECONOMIC ACTIVITY

(thousand US dollars)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Total	**618184.5**	**627887.5**	**584656.9**	**1619031.6**	**1425983.3**	**1862566.6**	**-1000847.1**	**-798095.8**	**-1277909.7**
Agriculture, hunting and forestry	–	–	–	1969.5	1351.4	1718.2	-1969.5	-1351.4	-1718.2
Fishing, aquaculture and service activities incidental to fishing	64.2	412.2	688.0	–	–	–	64.2	412.2	688.0
Mining and quarrying	14924.1	25547.3	18213.1	368077.1	73304.8	104635.6	-353153.0	-47757.5	-86422.5
Manufacturing	54997.7	92064.0	52826.6	986144.2	1054931.6	1383378.1	-931146.5	-962867.6	-1330551.5
Electricity, gas and water supply	1480.6	994.6	1163.7	5005.0	2954.7	2890.2	-3524.4	-1960.1	-1726.5
Construction	174177.5	148249.3	86965.7	108298.1	51983.0	103655.0	65879.4	96266.3	-16689.3
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	5037.9	5047.2	6397.3	6782.8	28536.1	1734.0	-1744.9	-23488.9	4663.3
Transport and communications	21424.3	19578.1	24394.9	53789.4	57552.4	120688.4	-32365.1	-37974.3	-96293.5
Real estate, renting and business activities	343460.9	332854.0	391502.1	33810.1	89930.8	67489.1	309650.8	242923.2	324013.0
Research and development	161699.4	178266.0	221063.2	7576.7	11329.9	10396.8	154122.7	166936.1	210666.4
Other business activities	121357.7	102306.7	119859.6	25088.4	77081.5	54572.1	96269.3	25225.2	65287.5
Public administration and defence; compulsory social security	–	–	24.1	–	15.0	63.3	–	-15.0	-39.2
Education	2588.3	3140.8	2481.4	95.8	108.5	473.9	2492.5	3032.3	2007.5
Health and social services	–	–	–	–	–	132.8	–	–	-132.8
Community, social and personal service activities	7.6	–	–	7.3	2174.0	1399.7	0.3	-2174.0	-1399.7
Recreational, cultural and sporting activities	7.6	–	–	7.3	2174.0	1399.7	0.3	-2174.0	-1399.7
Other	21.4	–	–	55052.3	63141.0	74308.3	-55030.9	-63141.0	-74308.3

6.24. TECHNOLOGY BALANCE OF PAYMENTS BY OWNERSHIP OF ORGANISATIONS

(thousand US dollars)

	Receipts from exports			Payments for imports			Balance of payments		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Total	**618184.5**	**627887.5**	**584656.9**	**1619031.6**	**1425983.3**	**1862566.6**	**-1000847.1**	**-798095.8**	**-1277909.7**
Russian ownership	476100.7	482111.1	435396.1	648401.5	369267.9	539140.6	-172300.8	112843.2	-103744.5
Public ownership	160090.3	163850.4	193071.2	26766.3	50672.8	51863.4	133324.0	113177.6	141207.8
Federal	158319.6	160022.2	190110.1	23971.7	47741.2	47525.7	134347.9	112281.0	142584.4
Provincial	1770.7	3828.2	2961.1	2794.6	2931.6	4337.7	-1023.9	896.6	-1376.6
Municipal ownership	–	–	–	4.4	–	–	-4.4	–	–
Private ownership	132187.5	301646.4	206561.3	501061.2	276779.6	402627.3	-368873.7	24866.8	-196066.0
Joint ownership	183822.9	16614.3	35763.6	120569.6	41815.5	84445.1	63253.3	-25201.2	-48681.5
Public corporations	–	–	–	–	–	204.8	–	–	-204.8
Foreign ownership	81438.5	98643.3	97528.3	620106.2	662391.4	858441.5	-538667.7	-563748.1	-760913.2
Joint ownership (with both Russian and foreign participation)	60645.3	47133.1	51732.5	350523.9	394324.0	464984.5	-289878.6	-347190.9	-413252.0

6.25. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGIES BY TYPE

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Advanced manufacturing technologies	**711**	**688**	**637**	**727**	**821**	**676**	**637**	**735**	**780**	**854**	**897**	**864**	**1138**
Design and engineering	162	165	158	155	148	111	138	148	177	173	196	216	316
Fabrication, processing, and assembling	316	281	245	333	390	342	291	362	365	369	328	383	405
Automated material handing	16	20	11	7	10	11	9	13	8	14	21	18	24
Automated inspection and/or testing equipment	82	76	71	63	87	90	91	97	110	99	102	116	128
Communications and control	80	90	102	113	116	49	57	56	67	68	67	70	154
Manufacturing information systems	18	18	16	14	18	23	21	24	14	23	26	20	51
Integrated management and control	37	38	34	42	52	50	30	35	39	41	49	41	60

6.26. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGIES BY DEGREE OF NOVELTY AND TYPE

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Technologies new to the country	**580**	**569**	**543**	**606**	**582**	**569**	**538**	**642**	**653**	**738**	**757**	**762**	**1028**
Design and engineering	126	136	142	129	125	102	125	138	140	150	169	191	272
Fabrication, processing, and assembling	256	231	210	271	251	271	239	308	314	316	283	336	371
Automated material handing	12	19	8	6	8	11	8	11	8	12	17	16	23
Automated inspection and/or testing equipment	65	66	62	55	48	71	72	79	91	87	92	98	117
Communications and control	75	74	87	99	99	46	52	52	52	65	61	67	147
Manufacturing information systems	18	14	11	13	7	20	20	24	13	20	22	17	41
Integrated management and control	28	29	23	33	44	48	22	30	35	37	40	37	57
Radically new technologies	**67**	**72**	**44**	**70**	**56**	**52**	**60**	**52**	**75**	**54**	**140**	**102**	**110**
Design and engineering	14	12	4	16	13	4	12	7	17	7	27	25	44
Fabrication, processing, and assembling	30	32	18	41	29	33	30	25	30	24	45	47	34
Automated material handing	3	1	1	–	1	–	–	1	–	1	4	2	1
Automated inspection and/or testing equipment	10	6	5	5	5	9	12	14	14	8	10	18	11
Communications and control	2	9	4	2	5	2	4	3	12	1	6	3	7
Manufacturing information systems	–	4	3	–	1	2	1	–	1	1	4	3	10
Integrated management and control	8	8	9	6	2	2	1	2	1	3	9	4	3

6.27. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGIES BY DEGREE OF NOVELTY AND ECONOMIC ACTIVITY

	Total			Of which technologies					
	2009	2010	2011	new to the country			radically new		
				2009	2010	2011	2009	2010	2011
Advanced manufacturing technologies	**897**	**864**	**1138**	**757**	**762**	**1028**	**140**	**102**	**110**
Mining and quarrying	7	5	10	6	5	7	1	–	3
Manufacturing	221	231	338	199	215	320	22	16	18
Electricity, gas and water supply	4	6	23	2	5	22	2	1	1
Transport and communications	–	–	3	–	–	3	–	–	–
Real estate, renting and business activities	482	470	566	408	410	502	74	60	64
Research and development	448	443	531	379	385	471	69	58	60
Other business activities	22	14	20	20	13	20	2	1	–
Education	183	152	198	142	127	174	41	25	24
Higher education	183	152	198	142	127	174	41	25	24

6.28. DEVELOPMENT OF ADVANCED MANUFACTURING TECHNOLOGIES BY DEGREE OF NOVELTY AND OWNERSHIP OF ORGANISATIONS

	Total			Of which technologies					
	2009	2010	2011	new to the country			radically new		
				2009	2010	2011	2009	2010	2011
Total	**897**	**864**	**1138**	**757**	**762**	**1028**	**140**	**102**	**110**
Russian ownership	855	810	1060	719	712	953	136	98	107
Public ownership	569	529	670	472	459	596	97	70	74
Federal	554	514	656	460	445	583	94	69	73
Provincial	15	15	14	12	14	13	3	1	1
Municipal ownership	2	1	6	1	–	6	1	1	-
Ownership of voluntary associations	–	4	2	–	1	1	–	3	1
Private ownership	200	190	278	175	174	259	25	16	19
Joint ownership	84	86	95	71	78	82	13	8	13
Public corporations	–	–	9	–	–	9	–	–	–
Foreign ownership	11	9	35	9	9	34	2	–	1
Joint ownership (with both Russian and foreign participation)	31	45	43	29	41	41	2	4	2

6.29. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY TYPE

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Advanced manufacturing technologies	**62390**	**70069**	**80012**	**93412**	**107015**	**119639**	**140983**	**168311**	**180324**	**184568**	**201850**	**203330**	**191650**
Design and engineering	10395	14385	18152	23135	29960	36826	43273	50653	54044	47116	54539	56130	41422
Fabrication, processing, and assembling	34857	35408	37056	39113	40757	44066	42976	50290	48956	47235	52460	55438	53563
Automated material handing	698	685	667	707	934	829	970	1270	1420	1469	1668	1853	1649
Automated inspection and/or testing equipment	2203	2409	2607	4335	4168	4071	4525	5941	6758	7531	8075	9106	9395
Communications and control	11441	13713	18721	22975	27766	29923	44135	53971	62102	74468	77457	72798	77662
Manufacturing information systems	1170	1823	1335	1563	1827	2085	3177	4092	4602	4175	4510	4848	4853
Integrated management and control	1626	1646	1474	1584	1603	1839	1927	2094	2442	2380	2877	3157	3106

6.30. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY TYPE AND DURATION

	Total		Of which technologies used during the period of					
			less than 1 year		1–5 years		6 years and over	
	2010	2011	2010	2011	2010	2011	2010	2011
Advanced manufacturing technologies	**203330**	**191650**	**19447**	**21606**	**95761**	**86890**	**88122**	**83154**
Design and engineering	56130	41422	5799	5421	26890	19646	23441	16355
Fabrication, processing, and assembling	55438	53563	4739	6378	20873	20086	29826	27099
Automated material handing	1853	1649	159	145	790	714	904	790
Automated inspection and/or testing equipment	9106	9395	1012	1070	4725	4859	3369	3466
Communications and control	72798	77662	6661	7827	38700	37783	27437	32052
Manufacturing information systems	4848	4853	714	474	2438	2485	1696	1894
Integrated management and control	3157	3106	363	291	1345	1317	1449	1498

6.31. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY ECONOMIC ACTIVITY AND DURATION

	Total		Of which technologies used during the period of					
			less than 1 year		1–5 years		6 years and over	
	2010	2011	2010	2011	2010	2011	2010	2011
Advanced manufacturing technologies	**203330**	**191650**	**19447**	**21606**	**95761**	**86890**	**88122**	**83154**
Mining and quarrying	7914	8474	1056	543	4654	5185	2204	2746
Manufacturing	135945	118021	11271	9883	60441	51451	64233	56687
Electricity, gas and water supply	16262	14649	2010	1700	9983	7791	4269	5158
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	313	385	27	32	136	242	150	111
Transport and communications	–	3208	–	269	–	883	–	2056
Real estate, renting and business activities	38342	42405	4592	8715	18355	19257	15395	14433
Research and development	25461	29873	3370	7051	11519	12063	10572	10759
Other business activities	10006	9659	1002	1255	5275	5504	3729	2900
Education	4460	4424	487	454	2143	2038	1830	1932
Higher education	4460	4424	487	454	2143	2038	1830	1932
Community, social and personal service activities	94	84	4	10	49	43	41	31
Recreational, cultural and sporting activities	94	84	4	10	49	43	41	31

6.32. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY OWNERSHIP OF ORGANISATIONS AND DURATION

	Total		Of which technologies used during the period of					
			less than 1 year		1–5 years		6 years and over	
	2010	2011	2010	2011	2010	2011	2010	2011
Total	**203330**	**191650**	**19447**	**21606**	**95761**	**86890**	**88122**	**83154**
Russian ownership	179914	168196	17301	19993	84842	75501	77771	72702
Public ownership	50479	41052	4251	7029	22959	16805	23269	17218
Federal	44045	36980	3785	6532	19873	14772	20387	15676
Provincial	6434	4072	466	497	3086	2033	2882	1542
Municipal ownership	5416	5010	551	510	3566	2952	1299	1548
Ownership of voluntary associations	378	400	48	40	184	188	146	172
Private ownership	86001	88789	8660	9299	41151	41435	36190	38055
Ownership of consumer cooperatives	137	116	9	15	80	69	48	32
Joint ownership	37360	31664	3774	3026	16815	13467	16771	15171
Public corporations	–	1165	–	74	–	585	–	506
Other	143	–	8	–	87	–	48	–
Foreign ownership	7510	10406	889	765	3661	5571	2960	4070
Joint ownership (with both Russian and foreign participation)	15906	13048	1257	848	7258	5818	7391	6382

6.33. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY TYPE AND SOURCE OF ACQUISITION: 2011

	Total	Of which technologies		
		created in the reporting entity	acquired	
			in Russia	abroad
Advanced manufacturing technologies	**191650**	**33409**	**117697**	**40544**
Design and engineering	41422	9725	26395	5302
Fabrication, processing, and assembling	53563	12649	26388	14526
Automated material handing	1649	263	878	508
Automated inspection and/or testing equipment	9395	1403	5983	2009
Communications and control	77662	7967	52933	16762
Manufacturing information systems	4853	925	3128	800
Integrated management and control	3106	477	1992	637

6.34. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY ECONOMIC ACTIVITY AND SOURCE OF ACQUISITION: 2011

	Total	Of which technologies		
		created in the reporting entity	acquired	
			in Russia	abroad
Advanced manufacturing technologies	**191650**	**33409**	**117697**	**40544**
Mining and quarrying	8474	523	6286	1665
Manufacturing	118021	18081	69051	30889
Electricity, gas and water supply	14649	2126	11241	1282
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	385	21	298	66
Transport and communications	3208	214	2068	926
Real estate, renting and business activities	42405	11283	26019	5103
Research and development	29873	10368	15461	4044
Other business activities	9659	616	8297	746
Education	4424	1137	2683	604
Higher education	4424	1137	2683	604
Other community, social and personal service activities	84	24	51	9
Recreational, cultural and sporting activities	84	24	51	9

6.35. USE OF ADVANCED MANUFACTURING TECHNOLOGIES BY OWNERSHIP AND SOURCE OF ACQUISITION: 2011

	Total	Of which technologies		
		created in the reporting entity	acquired	
			in Russia	abroad
Total	**191650**	**33409**	**117697**	**40544**
Russian ownership	168196	30596	108046	29554
Public ownership	41052	13775	20395	6882
Federal	36980	13138	17682	6160
Provincial	4072	637	2713	722
Municipal ownership	5010	618	4016	376
Ownership of voluntary associations	400	18	280	102
Private ownership	88789	10458	60531	17800
Ownership of consumer cooperatives	116	7	90	19
Joint ownership	31664	5411	22047	4206
Public corporations	1165	309	687	169
Foreign ownership	10406	1028	3464	5914
Joint ownership (with both Russian and foreign participation)	13048	1785	6187	5076

6.36. USE OF ADVANCED MANUFACTURING TECHNOLOGIES ON THE BASIS OF INVENTION PATENTS BY TYPE

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Advanced manufacturing technologies	**2985**	**2804**	**2881**	**2457**	**2638**	**3292**	**3072**	**2168**	**1373**	**2463**	**1344**	**1012**	**6566**
Design and engineering	1204	1115	1116	623	637	702	1055	814	499	223	244	274	1574
Fabrication, processing, and assembling	1438	1231	1327	1371	1597	1648	1411	914	442	506	415	337	2523
Automated material handing	21	45	25	22	17	14	16	5	4	13	24	18	76
Automated inspection and/or testing equipment	190	171	234	216	158	236	262	142	115	725	114	116	661
Communications and control	81	182	117	164	190	620	258	213	238	885	426	209	1418
Manufacturing information systems	5	9	16	16	11	27	44	53	51	52	47	31	193
Integrated management and control	46	51	46	45	28	45	26	27	24	25	42	27	121

* Data for 2011 is not comparable with data for 1999-2010 due to changes in the methodology.

7. Nanotechnology

7.1. NANOTECHNOLOGY R&D

	Total			As a percentage of the national total		
	2009	2010	2011	2009	2010	2011
Institutions engaged in nanotechnology R&D	465	480	485	13.2	13.7	13.2
Researchers engaged in nanotechnology R&D, *head-count*	14500	17928	21166	3.9	4.9	5.6
Gross domestic expenditure on nanotechnology R&D, *million roubles*	15113.1	21283.7	26086.0	3.1	4.1	4.3

7.2. NANOTECHNOLOGY R&D IN INSTITUTIONS BY SIZE OF EMPLOYMENT

	Number of researchers engaged in nanotechnology R&D, *head-count*			Gross domestic expenditure on nanotechnology R&D, *million roubles*		
	2009	2010	2011	2009	2010	2011
Total	**14500**	**17928**	**21166**	**15113.1**	**21283.7**	**26086.0**
Size of employment, *head-count:*						
below 100	1288	1568	1554	1159.6	2337.7	2553.5
101–500	7044	7774	8734	6242.9	6171.4	7881.7
501–1000	3327	3821	3186	2780.5	5084.4	6338.0
1001–5000	2142	3746	4634	4183.4	6919.8	8493.7
5001 and more	699	1019	3058	746.8	770.4	819.2

7.3. NANOTECHNOLOGY R&D BY TYPE OF INSTITUTIONS

	Number of researchers engaged in nanotechnology R&D, *head-count*			Gross domestic expenditure on nanotechnology R&D, *million roubles*		
	2009	2010	2011	2009	2010	2011
Total	**14500**	**17928**	**21166**	**15113.1**	**21283.7**	**26086.0**
Research institutes	10104	10453	11862	7660.2	8470.6	10207.1
Design organisations	402	547	426	152.0	890.9	945.2
Construction project and exploration organisations	261	–	7	101.6	–	2.8
Experimental enterprises	32	35	7	5.7	6.3	2.7
Higher education institutions	3027	4497	6159	3468.3	4819.0	5821.1
Industrial enterprises	432	459	635	1281.3	744.4	1814.2
Others	242	1937	2070	2444.0	6352.5	7292.9

7.4. NANOTECHNOLOGY R&D BY OWNERSHIP OF INSTITUTIONS

	Number of researchers engaged in nanotechnology R&D, *head-count*			Gross domestic expenditure on nanotechnology R&D, *million roubles*		
	2009	2010	2011	2009	2010	2011
Total	**14500**	**17928**	**21166**	**15113.1**	**21283.7**	**26086.0**
Russian ownership	14447	17865	21057	14545.2	19330.3	23469.0
Public ownership	13504	17026	19482	13979.8	18444.7	21411.0
Federal	13471	16950	19408	13974.6	18437.3	21410.3
Provincial	33	76	74	5.2	7.4	0.7
Ownership of voluntary associations	–	–	14	–	–	6.6
Private ownership	472	486	719	314.4	411.6	1278.2
Joint ownership	471	353	789	251.1	473.9	725.1
Joint ownership with a part of public ownership	–	221	289	–	394.3	209.2
Public corporations	–	–	53	–	–	48.2
Joint ownership (with both Russian and foreign participation)	53	63	109	567.9	1953.4	2617.0

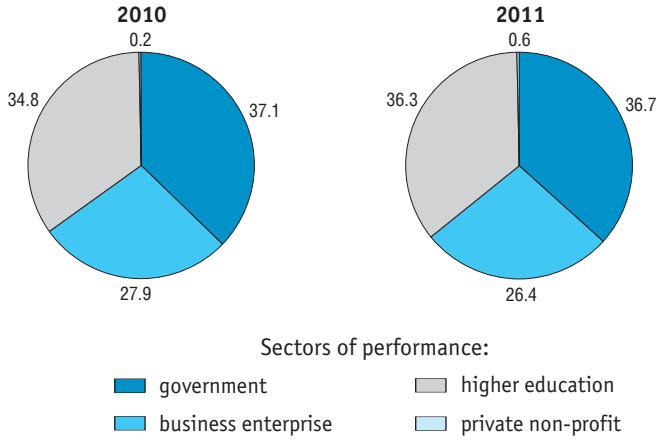
7.5. NANOTECHNOLOGY R&D BY ECONOMIC ACTIVITY

	Number of researchers engaged in nanotechnology R&D, *head-count*			Gross domestic expenditure on nanotechnology R&D, *million roubles*		
	2009	2010	2011	2009	2010	2011
Total	**14500**	**17928**	**21166**	**15113.1**	**21283.7**	**26086.0**
Manufacturing	468	574	720	454.9	527.8	1296.9
Real estate, renting and business activities	10858	12669	14111	11120.3	15547.6	18761.8
Research and development	10773	12610	14026	11050.6	15517.8	18644.2
Education	3171	4665	6331	3537.4	5197.3	6024.4
Higher education	3171	4665	6331	3537.4	5197.3	6024.4
Community, social and personal service activities	3	20	4	0.6	10.9	3.0

7.6. NANOTECHNOLOGY R&D BY SECTOR OF PERFORMANCE

	Number of researchers engaged in nanotechnology R&D, *head-count*			Gross domestic expenditure on nanotechnology R&D, *million roubles*		
	2009	2010	2011	2009	2010	2011
Total	**14500**	**17928**	**21166**	**15113.1**	**21283.7**	**26086.0**
Sectors of performance:						
government	6554	7267	7711	4492.1	5283.9	6993.0
business enterprise	4330	5608	6668	6926.6	10659.5	12877.2
higher education	3581	5022	6719	3689.3	5334.4	6205.8
private non-profit	35	31	68	5.2	5.9	10.0

7.7. PERCENTAGE DISTRIBUTION OF R&D INSTITUTIONS ENGAGED IN NANOTECHNOLOGY R&D BY SECTOR OF PERFORMANCE



7.8. DEVELOPMENT AND USE OF NANOTECHNOLOGY BY ECONOMIC ACTIVITY: 2011

	Number of nanotechnologies developed	Number of nanotechnologies used
Total	**258**	**526**
Mining and quarrying	–	1
Manufacturing	28	146
Electricity, gas and water supply	1	14
Real estate, renting and business activities	128	279
Research and development	127	206
Education	101	78
Higher education	101	78

7.9. INNOVATIVE NANOTECHNOLOGY-RELATED GOODS AND SERVICES: 2011

(million roubles)

	Innovative nanotechnology-related goods and services			Of which exports					
				total			to CIS countries		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Manufacturing	**1074.0**	**53402.6**	**63752.1**	**83.4**	**23867.2**	**12360.3**	**33.4**	**245.9**	**1184.2**
High tech	414.3	2578.1	3399.5	11.9	77.9	125.8	0.3	21.1	17.5
Medium high tech	210.8	1491.6	15879.4	65.2	260.1	1465.6	29.5	133.4	1139.5
Medium low tech	180.3	48213.5	43334.7	6.3	23521.3	10768.2	3.6	89.1	27.3
Low tech	268.6	1119.4	1138.4	–	7.9	0.6	–	2.3	–

7.10. SALES OF NANOTECHNOLOGY-RELATED GOODS AND SERVICES BY ECONOMIC ACTIVITY

	Sales of nanotechnology-related goods and services: January–December 2011			Nanotechnology-related goods and services as a percentage of the total sales of enterprises: January–December 2011
	Million roubles	As a percentage of the total	As a percentage of the respective period of the previous year	
Total	**154804.8**	**100**	**131.3**	**29.5**
Mining and quarrying	18.3	0.01	–	6.9
Manufacturing	148904.8	96.2	129.3	35.8
Manufacture of coke, refined petroleum products	117584.6	76.0	121.3	45.9
Manufacture of chemicals and chemical products	14510.5	9.4	171.1	50.3
Manufacture of transport vehicles and equipment	2169.1	1.4	148.8	31.7
Manufacture of electrical, electronic and optical equipment	6278.4	4.1	216.0	17.0
Electricity, gas and water supply	3.0	0.002	124.7	2.4
Wholesale and retail trade; repair of motor vehicles, motorcycles, household goods and articles of personal use	34.0	0.02	95.3	60.1
Transport and communications	21.0	0.01	151.7	27.7
Real estate, renting and business activities	5599.3	3.6	214.4	6.5
Research and development	5393.7	3.5	220.7	6.3
Education	224.3	0.1	273.3	1.0
Higher education	224.3	0.1	273.3	1.0

7.11. SALES OF NANOTECHNOLOGY-RELATED GOODS AND SERVICES BY TYPE

	Sales of nanotechnology-related goods and services: January–December 2011		
	Million roubles	As a percentage of the total	As a percentage of the respective period of the previous year
Total	**154804.8**	**100**	**131.3**
Elementary nanoproducts	11171.9	7.2	154.3
Conventional goods and services, manufactured with the use of nano-enabled processes	122645.2	79.2	123.0
Conventional goods, containing nanocomponents	19827.0	12.8	198.6
Machinery and equipment for nanotechnology	1142.7	0.7	116.8

8. Innovative Activity of Enterprises

8.1. INNOVATIVE ACTIVITY OF ENTERPRISES BY TYPE OF INNOVATION AND ECONOMIC ACTIVITY

	Total, *per cent*		Enterprises engaged in innovation of selected types as a percentage of all enterprises					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	**10.8**	**11.1**	**9.3**	**9.6**	**3.4**	**3.5**	**2.5**	**2.5**
Mining and quarrying	7.8	8.4	6.6	6.8	2.9	3.9	0.4	0.7
Mining and quarrying of energy producing materials	9.7	11.3	8.0	9.0	3.9	5.8	0.6	1.1
Mining and quarrying, except energy producing materials	5.3	4.5	4.8	3.9	1.7	1.2	0.2	0.2
Manufacturing	13.0	13.3	11.3	11.6	4.0	4.1	3.4	3.4
High tech	29.1	30.1	27.1	28.0	8.4	9.3	6.6	6.7
Manufacture of pharmaceuticals	25.5	24.7	24.2	22.4	5.7	4.7	10.8	8.8
Manufacture of office machinery and computers	26.8	27.5	26.8	25.0	7.3	10.0	4.9	7.5
Manufacture of radio, television and communication equipment and apparatus	32.3	36.1	31.3	33.5	8.2	9.7	5.6	5.2
Manufacture of medical, precision and optical instruments, watches and clocks	27.1	27.2	24.5	25.5	7.7	8.6	6.2	6.4
Manufacture of aircrafts, including spacecrafts	34.5	35.6	31.7	33.6	14.8	16.4	6.3	8.9
Medium high tech	19.7	19.7	17.7	17.6	6.6	6.3	4.6	4.6
Manufacture of chemicals and chemical products	25.3	23.2	23.0	21.1	8.2	6.8	6.0	4.1
Manufacture of machinery and equipment, n.e.c.	17.1	17.7	14.8	15.3	6.0	5.8	4.1	4.3

(continued)

	Total, *per cent*		Enterprises engaged in innovation of selected types as a percentage of all enterprises					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	21.8	21.2	20.4	20.1	7.0	6.6	5.6	7.1
Manufacture of motor vehicles, trailers and semitrailers	23.1	24.4	21.0	22.2	7.2	7.9	4.0	3.3
Manufacture of other transport vehicles	14.5	13.9	12.8	12.0	5.1	5.6	2.6	3.0
Medium low tech	12.5	13.1	10.7	11.5	4.2	3.9	2.9	2.4
Manufacture of coke, refined petroleum products	32.1	31.7	30.2	31.7	14.2	11.5	6.6	5.8
Manufacture of rubber and plastic products	11.3	12.1	9.6	10.3	3.2	3.6	3.2	3.0
Manufacture of other non-metallic mineral products	8.9	9.7	7.2	8.4	2.8	2.8	2.4	1.9
Manufacture of basic metals	24.3	24.9	22.4	22.8	8.3	8.3	2.8	2.9
Manufacture of fabricated metal products	11.3	11.8	9.7	9.7	3.7	3.2	3.0	2.5
Construction and repair of vessels	16.3	14.4	12.8	14.4	7.6	3.6	4.1	1.2
Low tech	7.8	7.7	6.3	6.3	2.0	2.2	2.6	2.6
Manufacture of food products and beverages	11.4	11.7	9.4	9.4	2.5	3.1	4.4	4.7
Manufacture of tobacco products	36.8	36.8	31.6	31.6	5.3	5.3	15.8	15.8
Manufacture of textiles	12.2	11.6	11.3	11.0	2.1	2.3	1.5	1.6
Manufacture of wearing apparel, dressing and dyeing of fur	6.2	5.3	4.4	3.9	2.1	2.2	2.6	0.8
Manufacture of leather, leather products and footwear	11.1	8.0	8.1	5.8	4.4	3.6	2.2	2.2
Manufacture of wood and of products of wood and cork, except furniture	4.9	5.5	4.1	3.8	2.0	2.7	1.3	1.7

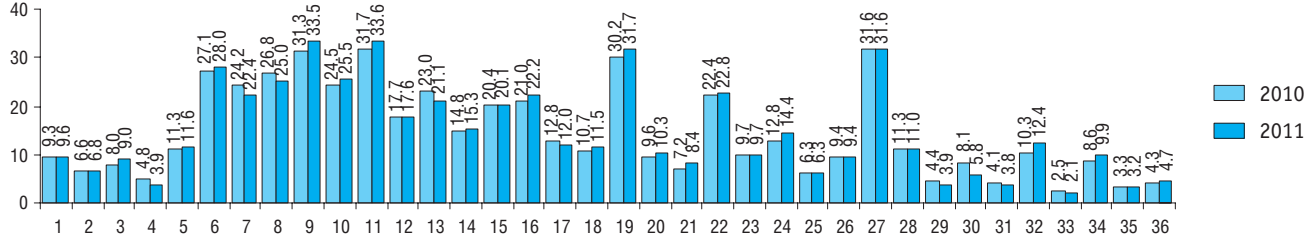
(continued)

	Total, *per cent*		Enterprises engaged in innovation of selected types as a percentage of all enterprises					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	12.6	13.3	10.3	12.4	4.5	4.4	3.6	4.0
Publishing and printing, reproduction of recorded media	3.2	2.7	2.5	2.1	1.0	0.7	0.8	0.6
Manufacture of furniture, manufacturing n.e.c.	11.0	12.2	8.6	9.9	2.9	2.8	2.9	3.3
Recycling	4.9	4.2	3.3	3.2	1.6	1.4	0.5	1.4
Electricity, gas and water supply	5.4	5.6	4.3	4.7	1.9	1.6	0.4	0.4
Communications, computer and related activities, research and development, other business activities								
Total	**6.7**	**9.2**	**5.1**	**7.8**	**2.8**	**3.0**	**1.6**	**1.9**
Communications	15.6	13.8	11.9	11.1	6.1	4.6	6.5	5.5
Computer and related activities	10.0	9.2	8.7	7.9	3.3	2.8	1.5	1.2
Research and development*	…	29.8	…	28.8	…	8.5	…	4.6
Other business activities	4.9	4.9	3.5	3.6	2.1	1.9	0.8	0.9

* Statistical monitoring of organisations rendering R&D services has been carried out since 2011.

8.2. ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION AS A PERCENTAGE OF ALL ENTERPRISES BY ECONOMIC ACTIVITY

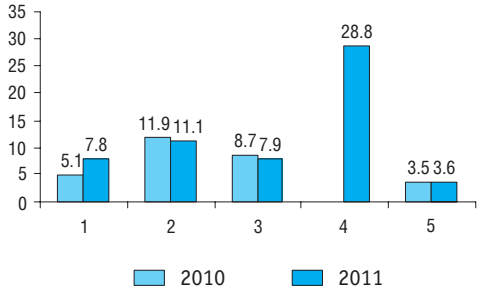
Mining and quarrying, manufacturing, electricity, gas and water supply



1– Total
2 – Mining and quarrying
3 – Mining and quarrying of energy producing materials
4 – Mining and quarrying, except energy producing materials
5 – Manufacturing
6 – High tech
7 – Manufacture of pharmaceuticals
8 – Manufacture of office machinery and computers
9 – Manufacture of radio, television and communication equipment and apparatus
10 – Manufacture of medical, precision and optical instruments, watches and clocks
11 – Manufacture of aircrafts, including spacecrafts
12 – Medium high tech
13 – Manufacture of chemicals and chemical products
14 – Manufacture of machinery and equipment, n.e.c.
15 – Manufacture of electrical machinery and apparatus
16 – Manufacture of motor vehicles, trailers and semi-trailers
17 – Manufacture of other transport vehicles
18 – Medium low tech
19 – Manufacture of coke, refined petroleum products
20 – Manufacture of rubber and plastic products
21 – Manufacture of other non-metallic mineral products
22 – Manufacture of basic metals
23 – Manufacture of fabricated metal products
24 – Construction and repair of vessels
25 – Low tech
26 – Manufacture of food products and beverages
27 – Manufacture of tobacco products
28 – Manufacture of textiles
29 – Manufacture of wearing apparel, dressing and dyeing of fur
30 – Manufacture of leather, leather products and footwear
31 – Manufacture of wood and of products of wood and cork, except furniture
32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
33 – Publishing and printing, reproduction of recorded media
34 – Manufacture of furniture; manufacturing n.e.c.
35 – Recycling
36 – Electricity, gas and water supply

(continued)

Communications, computer and related activities, research and development, other business activities



1 – Total
2 – Communications
3 – Computer and related activities
4 – Research and development
5 – Other business activities

8.3. PERCENTAGE DISTRIBUTION OF ENTERPRISES ENGAGED IN TECHNOLOGICAL INNOVATION BY INNOVATIVE AND ECONOMIC ACTIVITY

	Enterprises engaged in									
	R&D	industrial design	acquisition of machinery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of preproduction	personnel training	market research	other activities
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	**35.7**	**26.4**	**63.6**	**11.8**	**8.0**	**27.8**	**15.7**	**16.9**	**8.2**	**10.6**
Mining and quarrying	38.7	18.3	54.8	9.7	3.2	22.6	11.8	10.8	2.2	12.9
Mining and quarrying of energy producing materials	39.1	15.6	45.3	14.1	4.7	20.3	10.9	10.9	1.6	12.5
Mining and quarrying, except energy producing materials	37.9	24.1	75.9	–	–	27.6	13.8	10.3	3.4	13.8
Manufacturing	38.9	28.3	64.0	12.7	9.2	27.2	17.0	18.3	9.6	9.9
High tech	56.4	30.6	64.4	12.8	9.8	39.5	19.3	27.6	12.2	8.9
Manufacture of pharmaceuticals	78.9	15.8	50.0	10.5	10.5	15.8	18.4	21.1	21.1	13.2
Manufacture of office machinery and computers	54.5	45.5	54.5	18.2	9.1	36.4	9.1	36.4	9.1	9.1
Manufacture of radio, television and communication equipment and apparatus	58.0	30.0	72.0	8.0	7.0	38.0	21.0	24.0	11.0	9.0
Manufacture of medical, precision and optical instruments, watches and clocks	55.2	30.8	58.7	15.4	11.9	42.0	18.2	24.5	11.9	8.4
Manufacture of aircrafts, including spacecrafts	37.8	40.0	80.0	15.6	8.9	55.6	22.2	48.9	8.9	6.7

(continued)

	Enterprises engaged in									
	R&D	industrial design	acquisition of machinery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of preproduction	personnel training	market research	other activities
Medium high tech	45.8	34.1	60.0	14.2	10.2	25.5	18.4	17.7	11.1	12.1
Manufacture of chemicals and chemical products	52.7	44.6	63.4	15.2	7.1	15.2	24.1	16.1	10.7	19.6
Manufacture of machinery and equipment, n.e.c.	41.8	29.3	53.8	14.7	11.1	28.9	16.4	19.1	12.0	7.1
Manufacture of electrical machinery and apparatus	47.3	32.1	68.7	13.0	12.2	26.7	16.0	20.6	8.4	13.0
Manufacture of motor vehicles, trailers and semi-trailers	44.3	38.0	60.8	11.4	7.6	26.6	22.8	11.4	17.7	11.4
Manufacture of other transport vehicles	46.7	30.0	53.3	20.0	13.3	30.0	10.0	16.7	–	20.0
Medium low tech	31.9	25.2	70.6	13.5	10.1	24.2	16.9	17.4	4.9	11.4
Manufacture of coke, refined petroleum products	50.0	46.9	53.1	15.6	15.6	40.6	18.8	12.5	–	25.0
Manufacture of rubber and plastic products	38.6	26.3	77.2	12.3	10.5	17.5	21.1	15.8	5.3	8.8
Manufacture of other non-metallic mineral products	20.6	16.7	75.5	11.8	8.8	11.8	19.6	13.7	2.9	12.7
Manufacture of basic metals	46.9	29.6	69.1	19.8	13.6	28.4	13.6	18.5	3.7	21.0
Manufacture of fabricated metal products	24.2	24.2	68.1	9.9	6.6	25.3	14.3	20.9	9.9	1.1
Construction and repair of vessels	18.2	18.2	72.7	13.6	9.1	54.5	13.6	27.3	4.5	–
Low tech	22.3	21.2	62.2	10.2	6.4	21.8	12.8	11.3	8.8	6.0
Manufacture of food products and beverages	25.1	24.4	62.1	11.6	7.1	17.0	11.6	11.3	11.3	8.0

(continued)

	Enterprises engaged in									
	R&D	industrial design	acquisition of machinery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of preproduction	personnel training	market research	other activities
Manufacture of tobacco products	33.3	–	50.0	–	–	16.7	50.0	–	–	–
Manufacture of textiles	29.7	13.5	59.5	8.1	2.7	21.6	16.2	18.9	13.5	–
Manufacture of wearing apparel, dressing and dyeing of fur	23.5	29.4	70.6	–	–	23.5	11.8	11.8	17.6	5.9
Manufacture of leather, leather products and footwear	18.2	9.1	81.8	18.2	18.2	18.2	27.3	18.2	18.2	–
Manufacture of wood and of products of wood and cork, except furniture	13.0	13.0	65.2	8.7	4.3	30.4	17.4	17.4	4.3	17.4
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13.0	8.7	78.3	4.3	4.3	26.1	13.0	13.0	–	–
Publishing and printing, reproduction of recorded media	12.0	13.3	60.0	8.0	2.7	41.3	9.3	4.0	2.7	4.0
Manufacture of furniture, manufacturing n.e.c.	21.1	34.2	47.4	15.8	15.8	18.4	13.2	15.8	–	–
Recycling	33.3	16.7	83.3	–	–	–	16.7	–	–	–
Electricity, gas and water supply	12.0	15.4	63.5	5.6	1.1	33.8	8.3	9.4	–	15.0
Communications, computer and related activities, research and development, other business activities										
Total	**12.1**	**13.4**	**59.2**	**11.6**	**7.1**	**53.9**	**9.6**	**27.4**	**5.5**	**8.3**
Communications	6.6	19.4	78.1	7.7	4.6	33.2	14.3	27.0	9.7	15.3
Computer and related activities	23.1	20.5	52.6	10.3	2.6	55.1	7.7	33.3	3.8	2.6
Research and development	…	…	…	…	…	…	…	…	…	…
Other business activities	12.7	8.2	49.5	14.2	9.7	65.9	7.3	26.3	3.3	5.4

(continued)

	Enterprises engaged in									
	R&D	industrial design	acquisition of machinery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of preproduction	personnel training	market research	other activities
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	**36.1**	**25.2**	**62.8**	**10.7**	**7.1**	**29.1**	**14.3**	**17.6**	**8.0**	**10.3**
Mining and quarrying	44.1	17.6	52.0	9.8	5.9	26.5	8.8	6.9	2.0	9.8
Mining and quarrying of energy producing materials	48.1	14.3	46.8	7.8	3.9	24.7	7.8	9.1	1.3	7.8
Mining and quarrying, except energy producing materials	32.0	28.0	68.0	16.0	12.0	32.0	12.0	–	4.0	16.0
Manufacturing	39.1	27.5	63.2	11.3	8.1	28.5	15.6	19.5	9.4	9.5
High tech	57.6	30.9	65.0	13.8	11.2	37.5	16.6	28.9	11.7	7.4
Manufacture of pharmaceuticals	76.3	18.4	47.4	26.3	23.7	23.7	13.2	15.8	18.4	5.3
Manufacture of office machinery and computers	60.0	40.0	60.0	10.0	10.0	50.0	20.0	20.0	10.0	10.0
Manufacture of radio, television and communication equipment and apparatus	62.5	33.7	68.3	3.8	2.9	33.7	20.2	27.9	9.6	7.7
Manufacture of medical, precision and optical instruments, watches and clocks	54.7	27.7	59.5	18.2	15.5	38.5	15.5	25.7	12.2	8.1
Manufacture of aircrafts, including spacecrafts	40.8	42.9	89.8	12.2	6.1	51.0	14.3	53.1	10.2	6.1

(continued)

	Enterprises engaged in									
	R&D	industrial design	acquisition of machi-nery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of prepro-duction	personnel training	market research	other activities
Medium high tech	45.4	32.0	60.3	12.4	8.9	28.2	17.7	19.4	10.0	12.0
Manufacture of chemicals and chemical products	49.1	43.5	63.0	9.3	6.5	20.4	20.4	14.8	10.2	21.3
Manufacture of machinery and equipment, n.e.c.	40.0	24.8	53.0	12.2	7.8	29.1	15.7	19.6	11.3	7.0
Manufacture of electrical machinery and apparatus	56.9	32.3	71.5	16.9	13.8	31.5	19.2	24.6	10.8	9.2
Manufacture of motor vehicles, trailers and semi-trailers	37.8	35.4	59.8	8.5	7.3	26.8	19.5	17.1	8.5	18.3
Manufacture of other transport vehicles	43.8	34.4	59.4	15.6	9.4	37.5	12.5	18.8	–	12.5
Medium low tech	33.0	25.1	67.2	12.7	7.7	24.2	15.8	16.5	5.0	11.7
Manufacture of coke, refined petroleum products	54.5	51.5	54.5	30.3	18.2	30.3	21.2	12.1	–	24.2
Manufacture of rubber and plastic products	33.3	23.8	63.5	14.3	11.1	25.4	20.6	14.3	4.8	9.5
Manufacture of other non-metallic mineral products	18.8	23.1	75.2	7.7	2.6	13.7	16.2	17.1	6.8	10.3
Manufacture of basic metals	49.4	23.5	64.7	16.5	11.8	29.4	10.6	15.3	2.4	21.2
Manufacture of fabricated metal products	26.0	18.8	65.6	8.3	4.2	21.9	15.6	16.7	7.3	4.2
Construction and repair of vessels	41.7	33.3	70.8	12.5	8.3	54.2	12.5	29.2	4.2	4.2
Low tech	21.4	19.7	62.4	6.8	4.9	24.2	11.1	13.5	9.6	6.2
Manufacture of food products and beverages	25.6	22.0	63.8	6.8	4.9	16.8	11.0	11.7	10.7	7.4

(continued)

	Enterprises engaged in									
	R&D	industrial design	acquisition of machinery and equipment	acquisition of technology	of which acquisition of patent rights and patent licenses	acquisition of software	other types of preproduction	personnel training	market research	other activities
Manufacture of tobacco products	16.7	–	50.0	–	–	16.7	50.0	–	–	–
Manufacture of textiles	20.6	14.7	58.8	8.8	5.9	26.5	11.8	17.6	14.7	8.8
Manufacture of wearing apparel, dressing and dyeing of fur	28.6	28.6	64.3	–	–	35.7	7.1	14.3	28.6	–
Manufacture of leather, leather products and footwear	12.5	25.0	62.5	25.0	25.0	25.0	–	37.5	25.0	12.5
Manufacture of wood and of products of wood and cork, except furniture	10.0	25.0	75.0	10.0	10.0	35.0	15.0	15.0	5.0	5.0
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	14.3	14.3	71.4	–	–	25.0	17.9	21.4	7.1	3.6
Publishing and printing, reproduction of recorded media	9.4	10.9	43.8	4.7	1.6	56.3	7.8	12.5	1.6	3.1
Manufacture of furniture, manufacturing n.e.c.	21.4	21.4	66.7	11.9	9.5	21.4	9.5	14.3	7.1	4.8
Recycling	14.3	14.3	100	–	–	14.3	–	28.6	–	–
Electricity, gas and water supply	12.3	12.3	63.5	7.4	1.1	34.0	7.4	7.7	0.4	15.8
Communications, computer and related activities, research and development, other business activities										
Total	**42.4**	**12.7**	**50.2**	**8.0**	**5.1**	**46.6**	**10.7**	**22.4**	**5.0**	**10.5**
Communications	7.0	22.7	78.9	8.1	3.8	33.0	13.5	19.5	8.1	23.2
Computer and related activities	24.1	16.5	48.1	13.9	10.1	45.6	13.9	21.5	3.8	5.1
Research and development	80.7	12.8	44.4	6.9	4.1	33.9	13.4	22.9	6.1	8.9
Other business activities	12.4	6.6	43.9	8.3	6.1	71.0	5.0	23.5	2.2	7.5

8.4. SALES OF INNOVATIVE GOODS AND SERVICES BY ECONOMIC ACTIVITY

	2010		2011	
	Million roubles	As a percentage of total sales	Million roubles	As a percentage of total sales
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	**1165747.6**	**4.9**	**1847370.4**	**6.1**
Mining and quarrying	151581.1	2.7	516779.7	6.7
Mining and quarrying of energy producing materials	143117.4	3.0	506198.0	7.5
Mining and quarrying, except energy producing materials	8463.7	1.2	10581.7	1.1
Manufacturing	990624.4	6.7	1309228.6	6.8
High tech	97267.0	11.2	128342.9	12.1
Manufacture of pharmaceuticals	10188.3	8.0	22813.0	14.8
Manufacture of office machinery and computers	1986.5	5.9	1136.6	3.3
Manufacture of radio, television and communication equipment and apparatus	19647.1	10.3	20837.9	9.8
Manufacture of medical, precision and optical instruments, watches and clocks	29032.5	15.3	38587.0	13.7
Manufacture of aircrafts, including spacecrafts	36412.7	11.0	44968.4	12.1
Medium high tech	386437.8	12.5	559925.7	12.8
Manufacture of chemicals and chemical products	115994.0	11.9	133944.3	9.7
Manufacture of machinery and equipment, n.e.c.	47272.7	6.5	58384.1	5.9
Manufacture of electrical machinery and apparatus	24226.4	7.3	27099.9	6.2
Manufacture of motor vehicles, trailers and semi-trailers	161065.3	19.5	288502.9	23.7
Manufacture of other transport vehicles	37879.5	16.6	51994.5	15.4
Medium low tech	317483.1	4.5	392457.2	4.3
Manufacture of coke, refined petroleum products	112621.7	3.9	93082.1	2.3
Manufacture of rubber and plastic products	20050.7	6.5	31746.0	7.8

(continued)

	2010		2011	
	Million roubles	As a percentage of total sales	Million roubles	As a percentage of total sales
Manufacture of other non-metallic mineral products	16781.4	2.6	21659.1	2.6
Manufacture of basic metals	139110.8	5.2	225270.9	7.2
Manufacture of fabricated metal products	7357.9	2.1	7670.0	1.2
Construction and repair of vessels	21560.6	18.7	13029.2	7.5
Low tech	149583.2	4.5	166260.9	4.1
Manufacture of food products and beverages	112266.4	5.1	109552.6	4.1
Manufacture of tobacco products	5521.9	3.1	6640.5	3.8
Manufacture of textiles	2246.3	2.9	2062.8	2.5
Manufacture of wearing apparel, dressing and dyeing of fur	1541.6	4.3	933.3	2.0
Manufacture of leather, leather products and footwear	686.4	2.3	531.5	1.4
Manufacture of wood and of products of wood and cork, except furniture	2670.0	1.7	2546.8	1.3
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	13345.4	4.6	12028.9	3.5
Publishing and printing, reproduction of recorded media	6466.6	4.1	19223.5	10.1
Manufacture of furniture, manufacturing n.e.c.	2413.4	1.7	7958.1	4.5
Recycling	2425.2	2.9	4783.0	3.9
Manufacturing of other materials and substances, n.e.c.	39853.2	10.1	62242.0	12.7
Electricity, gas and water supply	23542.1	0.7	21362.1	0.6
Communications, computer and related activities, research and development, other business activities				
Total	**77964.9**	**4.0**	**259370.3**	**8.3**
Communications	42849.6	3.6	49486.6	3.6
Computer and related activities	19786.9	14.3	24951.2	12.9
Research and development	…	…	159410.0	23.4
Other business activities	15328.4	2.4	25522.6	2.9

8.5. SALES OF GOODS AND SERVICES PRODUCED WITH THE USE OF MARKETING INNOVATION BY ECONOMIC ACTIVITY

	2010		2011	
	Million roubles	As a percentage of total sales	Million roubles	As a percentage of total sales
Mining and quarrying, manufacturing, electricity, gas and water supply				
Total	**428653.0**	**1.8**	**561396.9**	**1.9**
Mining and quarrying	357702.6	6.4	450996.3	5.9
Mining and quarrying of energy producing materials	356827.7	7.4	449811.8	6.7
Mining and quarrying, except energy producing materials	874.9	0.1	1184.5	0.1
Manufacturing	51816.4	0.4	76395.9	0.4
High tech	9043.1	1.0	15310.2	1.4
Manufacture of pharmaceuticals	687.5	0.5	24.9	0.02
Manufacture of office machinery and computers	–	–	30.0	0.1
Manufacture of radio, television and communication equipment and apparatus	–	–	737.7	0.3
Manufacture of medical, precision and optical instruments, watches and clocks	8113.2	4.3	13092.7	4.6
Manufacture of aircrafts, including spacecrafts	242.4	0.1	1425.0	0.4
Medium high tech	17654.7	0.6	38871.7	0.9
Manufacture of chemicals and chemical products	12000.7	1.2	29958.6	2.2
Manufacture of machinery and equipment, n.e.c.	3226.9	0.4	3457.0	0.3
Manufacture of electrical machinery and apparatus	2145.5	0.6	3278.3	0.8
Manufacture of motor vehicles, trailers and semi-trailers	281.6	0.03	1783.3	0.1
Manufacture of other transport vehicles	–	–	394.5	0.1
Medium low tech	7379.6	0.1	5612.1	0.1
Manufacture of coke, refined petroleum products	–	–	–	–
Manufacture of rubber and plastic products	402.7	0.1	2110.5	0.5

(continued)

	2010		2011	
	Million roubles	As a percentage of total sales	Million roubles	As a percentage of total sales
Manufacture of other non-metallic mineral products	1078.9	0.2	511.4	0.1
Manufacture of basic metals	2378.0	0.1	1506.1	0.05
Manufacture of fabricated metal products	1075.4	0.3	1482.6	0.2
Construction and repair of vessels	2444.5	2.1	1.4	0.001
Low tech	17693.5	0.5	16005.3	0.4
Manufacture of food products and beverages	11590.6	0.5	10597.4	0.4
Manufacture of tobacco products	2273.7	1.3	256.5	0.1
Manufacture of textiles	–	–	0.7	0.001
Manufacture of wearing apparel, dressing and dyeing of fur	1077.2	3.0	1111.1	2.3
Manufacture of leather, leather products and footwear	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	1447.4	0.9	1602.7	0.8
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	911.2	0.3	1083.8	0.3
Publishing and printing, reproduction of recorded media	376.5	0.2	697.1	0.4
Manufacture of furniture, manufacturing n.e.c.	17.0	0.01	656.1	0.4
Recycling	–	–	–	–
Manufacturing of other materials and substances, n.e.c.	45.6	0.01	596.7	0.1
Electricity, gas and water supply	19134.0	0.5	34004.6	1.0
Communications, computer and related activities, research and development, other business activities				
Total	**15137.1**	**0.8**	**19522.4**	**0.6**
Communications	12019.2	1.0	7507.0	0.5
Computer and related activities	581.5	0.4	492.1	0.3
Research and development	…	…	5392.6	0.8
Other business activities	2536.4	0.4	6130.8	0.7

8.6. EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

	Expenditure on technological, organisational and marketing innovation, *million roubles*		Of which					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	**356163.5**	**474587.1**	**349763.3**	**469442.2**	**2388.8**	**3483.9**	**4011.4**	**1661.0**
Mining and quarrying	54042.7	70585.0	53541.7	70239.3	501.1	328.5	–	17.2
Mining and quarrying of energy producing materials	49564.7	66170.9	49250.9	65836.2	313.8	317.5	–	17.2
Mining and quarrying, except energy producing materials	4478.0	4414.1	4290.8	4403.1	187.2	11.0	–	–
Manufacturing	266439.3	374362.3	260835.2	370006.0	1693.3	2721.7	3910.8	1634.6
High tech	38568.3	39054.0	36816.2	38460.7	271.9	450.5	1480.2	142.7
Manufacture of pharmaceuticals	1027.9	2381.2	999.4	2331.6	2.8	2.1	25.8	47.6
Manufacture of office machinery and computers	419.4	754.0	416.8	748.4	1.9	3.4	0.7	2.2
Manufacture of radio, television and communication equipment and apparatus	7674.6	7736.5	7637.7	7697.1	33.2	32.2	3.7	7.2
Manufacture of medical, precision and optical instruments, watches and clocks	10348.6	12009.9	10089.1	11906.5	122.4	74.9	137.1	28.5
Manufacture of aircrafts, including spacecrafts	19097.9	16172.5	17673.3	15777.2	111.7	338.0	1313.0	57.3
Medium high tech	51299.6	67152.6	50374.9	66501.1	394.6	510.6	530.2	140.9
Manufacture of chemicals and chemical products	23413.0	28583.8	23107.1	28407.1	225.2	132.5	80.7	44.2
Manufacture of machinery and equipment, n.e.c.	10808.5	11852.9	10639.5	11740.9	128.0	93.3	41.1	18.7

(continued)

	Expenditure on technological, organisational and marketing innovation, *million roubles*		Of which					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	5366.7	7016.5	5012.0	6941.6	14.4	56.6	340.3	18.3
Manufacture of motor vehicles, trailers and semitrailers	8434.2	15633.7	8348.1	15411.1	25.0	165.3	61.1	57.2
Manufacture of other transport vehicles	3277.2	4065.7	3268.2	4000.2	2.0	63.0	7.0	2.5
Medium low tech	137474.2	213912.7	137057.8	213314.3	326.3	381.2	90.2	217.2
Manufacture of coke, refined petroleum products	44444.8	86139.0	44261.9	85891.6	170.7	111.0	12.2	136.3
Manufacture of rubber and plastic products	8222.7	7807.1	8203.4	7793.0	7.2	6.0	12.0	8.1
Manufacture of other non-metallic mineral products	3468.6	20635.7	3404.1	20582.3	41.8	17.5	22.7	35.9
Manufacture of basic metals	75411.7	89920.6	75337.4	89766.5	66.5	121.5	7.8	32.6
Manufacture of fabricated metal products	2733.1	3290.9	2667.1	3176.1	32.6	111.2	33.4	3.6
Construction and repair of vessels	3193.3	6119.4	3183.9	6104.8	7.4	13.9	2.1	0.7
Low tech	20112.1	28324.4	17940.7	26347.8	375.1	883.6	1796.3	1093.0
Manufacture of food products and beverages	9877.7	12884.8	7954.6	11830.8	228.3	506.9	1694.7	547.0
Manufacture of tobacco products	874.7	735.1	806.3	732.0	2.6	3.1	65.8	–
Manufacture of textiles	706.4	635.4	706.3	614.4	0.1	20.4	0.03	0.6
Manufacture of wearing apparel, dressing and dyeing of fur	264.4	131.8	259.0	117.0	2.1	12.9	3.4	2.0
Manufacture of leather, leather products and footwear	103.4	56.8	99.1	38.1	1.4	1.1	2.9	17.6
Manufacture of wood and of products of wood and cork, except furniture	646.4	2293.3	619.7	1962.2	18.5	329.3	8.2	1.8

(continued)

	Expenditure on technological, organisational and marketing innovation, *million roubles*		Of which					
			Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	3637.0	7602.7	3539.4	7457.3	96.3	3.9	1.3	141.5
Publishing and printing, reproduction of recorded media	866.0	1058.5	835.5	1036.1	22.7	1.7	7.9	20.7
Manufacture of furniture; manufacturing n.e.c.	276.9	1213.3	261.8	847.7	3.1	3.9	12.0	361.7
Recycling	2859.2	1712.6	2859.2	1712.1	0.04	0.4	–	0.1
Manufacturing of other materials and substances, n.e.c.	18985.0	25918.5	18645.6	25382.1	325.4	495.7	13.9	40.7
Electricity, gas and water supply	35681.4	29639.8	35386.4	29196.9	194.4	433.6	100.6	9.2
Communications, computer and related activities, research and development, other business activities								
Total	**54845.3**	**273953.0**	**51040.6**	**264373.7**	**2313.5**	**1282.2**	**1491.3**	**8297.0**
Communications	35224.9	138826.1	33710.4	130211.3	249.5	416.5	1265.0	8198.3
Computer and related activities	4998.2	7593.3	4973.6	7542.7	16.1	41.6	8.5	9.1
Research and development	…	117157.6	…	116525.5	…	557.6	…	74.4
Other business activities	14622.3	10376.0	12356.5	10094.3	2047.9	266.4	217.9	15.3

8.7. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL, ORGANISATIONAL AND MARKETING INNOVATION BY ECONOMIC ACTIVITY

	Expenditure on innovation					
	Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011
Mining and quarrying, manufacturing, electricity, gas and water supply						
Total	**98.2**	**98.9**	**0.7**	**0.7**	**1.1**	**0.3**
Mining and quarrying	99.1	99.5	0.9	0.5	–	0.02
Mining and quarrying of energy producing materials	99.4	99.5	0.6	0.5	–	0.03
Mining and quarrying, except energy producing materials	95.8	99.8	4.2	0.2	–	–
Manufacturing	97.9	98.8	0.6	0.7	1.5	0.4
High tech	95.5	98.5	0.7	1.2	3.8	0.4
Manufacture of pharmaceuticals	97.2	97.9	0.3	0.1	2.5	2.0
Manufacture of office machinery and computers	99.4	99.3	0.4	0.4	0.2	0.3
Manufacture of radio, television and communication equipment and apparatus	99.5	99.5	0.4	0.4	0.05	0.1
Manufacture of medical, precision and optical instruments, watches and clocks	97.5	99.1	1.2	0.6	1.3	0.2
Manufacture of aircrafts, including spacecrafts	92.5	97.6	0.6	2.1	6.9	0.4
Medium high tech	98.2	99.0	0.8	0.8	1.0	0.2
Manufacture of chemicals and chemical products	98.7	99.4	1.0	0.5	0.3	0.2
Manufacture of machinery and equipment, n.e.c.	98.4	99.1	1.2	0.8	0.4	0.2

(continued)

	Expenditure on innovation					
	Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011
Manufacture of electrical machinery and apparatus	93.4	98.9	0.3	0.8	6.3	0.3
Manufacture of motor vehicles, trailers and semitrailers	99.0	98.6	0.3	1.1	0.7	0.4
Manufacture of other transport vehicles	99.7	98.4	0.1	1.5	0.2	0.1
Medium low tech	99.7	99.7	0.2	0.2	0.1	0.1
Manufacture of coke, refined petroleum products	99.6	99.7	0.4	0.1	0.03	0.2
Manufacture of rubber and plastic products	99.8	99.8	0.1	0.1	0.1	0.1
Manufacture of other non-metallic mineral products	98.1	99.7	1.2	0.1	0.7	0.2
Manufacture of basic metals	99.9	99.8	0.1	0.1	0.01	0.04
Manufacture of fabricated metal products	97.6	96.5	1.2	3.4	1.2	0.1
Construction and repair of vessels	99.7	99.8	0.2	0.2	0.1	0.01
Low tech	89.2	93.0	1.9	3.1	8.9	3.9
Manufacture of food products and beverages	80.5	91.8	2.3	3.9	17.2	4.2
Manufacture of tobacco products	92.2	99.6	0.3	0.4	7.5	–
Manufacture of textiles	100	96.7	0.01	3.2	0.005	0.1
Manufacture of wearing apparel, dressing and dyeing of fur	97.9	88.7	0.8	9.8	1.3	1.5
Manufacture of leather, leather products and footwear	95.8	67.1	1.4	2.0	2.8	31.0
Manufacture of wood and of products of wood and cork, except furniture	95.9	85.6	2.9	14.4	1.3	0.1

(continued)

	Expenditure on innovation					
	Technological		Organisational		Marketing	
	2010	2011	2010	2011	2010	2011
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	97.3	98.1	2.6	0.1	0.04	1.9
Publishing and printing, reproduction of recorded media	96.5	97.9	2.6	0.2	0.9	2.0
Manufacture of furniture; manufacturing n.e.c.	94.6	69.9	1.1	0.3	4.3	29.8
Recycling	100	99.97	0.001	0.02	–	0.01
Electricity, gas and water supply	99.2	98.5	0.5	1.5	0.3	0.03
Communications, computer and related activities, research and development, other business activities						
Total	**93.1**	**96.5**	**4.2**	**0.5**	**2.7**	**3.0**
Communications	95.7	93.8	0.7	0.3	3.6	5.9
Computer and related activities	99.5	99.3	0.3	0.5	0.2	0.1
Research and development	…	99.5	…	0.5	…	0.1
Other business activities	84.5	97.3	14.0	2.6	1.5	0.1

8.8. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY INNOVATIVE AND ECONOMIC ACTIVITY

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
2010										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	**20.6**	**7.4**	**54.5**	**1.3**	**0.5**	**1.2**	**7.3**	**0.2**	**0.6**	**7.0**
Mining and quarrying	43.6	1.8	33.1	0.2	0.04	1.9	2.8	0.8	1.7	14.3
Mining and quarrying of energy producing materials	46.2	1.4	31.9	0.2	0.04	2.0	0.8	0.9	1.8	14.9
Mining and quarrying, except energy producing materials	13.6	6.0	46.8	–	–	0.7	25.3	0.1	0.0003	7.4
Manufacturing	15.5	8.6	60.2	0.9	0.6	1.0	8.5	0.1	0.4	4.7
High tech	40.5	11.3	39.2	0.6	0.5	1.4	2.6	0.3	0.1	3.9
Manufacture of pharmaceuticals	27.1	1.0	60.0	2.6	2.6	1.8	3.7	0.4	1.6	1.7
Manufacture of office machinery and computers	21.5	4.3	29.0	2.8	2.8	0.4	0.5	0.3	0.1	41.1
Manufacture of radio, television and communication equipment and apparatus	34.1	5.3	45.3	1.4	1.4	0.7	1.8	0.4	0.04	11.0
Manufacture of medical, precision and optical instruments, watches and clocks	57.4	12.0	22.8	0.2	0.1	1.0	2.9	0.4	0.1	3.2
Manufacture of aircrafts, including spacecrafts	34.9	14.2	45.0	0.3	0.1	1.9	2.8	0.3	0.1	0.4

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	19.7	11.9	46.8	2.5	1.7	1.1	10.8	0.2	1.6	5.4
Manufacture of chemicals and chemical products	5.0	11.1	59.1	4.7	3.2	0.2	10.8	0.1	0.2	8.8
Manufacture of machinery and equipment, n.e.c.	32.4	7.8	40.9	0.9	0.7	3.4	11.3	0.4	2.3	0.7
Manufacture of electrical machinery and apparatus	29.6	28.6	28.9	1.3	0.7	1.2	6.7	0.6	0.1	3.1
Manufacture of motor vehicles, trailers and semitrailers	31.1	10.6	33.4	0.1	0.05	0.5	15.3	0.1	6.4	2.4
Manufacture of other transport vehicles	37.9	8.9	40.4	0.4	0.01	1.1	3.7	0.2	–	7.3
Medium low tech	6.3	5.8	73.8	0.6	0.3	0.8	8.9	0.1	0.01	3.7
Manufacture of coke, refined petroleum products	9.0	10.0	53.7	0.3	0.2	1.6	20.6	0.03	–	4.7
Manufacture of rubber and plastic products	5.3	1.5	66.7	2.3	2.3	0.1	23.5	0.2	0.01	0.3
Manufacture of other non-metallic mineral products	11.3	14.6	58.8	2.4	1.0	0.5	7.7	0.1	0.03	4.6
Manufacture of basic metals	1.5	3.4	89.6	0.4	0.2	0.3	1.0	0.03	0.004	3.7
Manufacture of fabricated metal products	22.8	2.4	70.4	1.5	0.2	0.8	1.4	0.5	0.2	0.03
Construction and repair of vessels	66.5	10.8	16.4	0.2	0.1	2.9	2.6	0.6	0.0004	-
Low tech	5.9	12.8	68.9	0.7	0.3	1.8	7.3	0.2	0.8	1.6
Manufacture of food products and beverages	8.6	7.3	68.9	0.7	0.2	3.3	7.5	0.1	1.7	1.8
Manufacture of tobacco products	6.8	–	32.7	–	–	0.1	60.3	–	–	–
Manufacture of textiles	3.0	0.4	92.7	0.1	0.004	0.1	3.2	0.2	0.3	–
Manufacture of wearing apparel, dressing and dyeing of fur	55.3	23.2	20.2	–	–	0.4	0.03	0.4	0.5	0.02

(continued)

	R&D	Industrial design	Acquisition of machi-nery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of prepro-duction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	4.1	0.2	43.0	5.3	5.3	0.7	46.2	0.5	0.2	–
Manufacture of wood and of products of wood and cork, except furniture	0.4	3.1	65.8	4.0	0.01	1.1	0.9	0.2	0.5	23.9
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.1	1.0	96.0	0.1	0.1	0.9	1.4	0.5	–	–
Publishing and printing, reproduction of recorded media	16.0	4.1	74.1	0.3	0.003	2.2	2.9	0.01	0.4	0.1
Manufacture of furniture, manufacturing n.e.c.	2.9	4.1	78.3	13.3	13.3	0.5	0.5	0.4	–	–
Recycling	0.1	54.1	43.2	–	–	–	2.6	–	–	–
Electricity, gas and water supply	23.1	6.7	44.8	6.1	0.05	1.6	5.1	0.1	–	12.5
Communications, computer and related activities, research and development, other business activities										
Total	**22.1**	**3.4**	**51.1**	**2.2**	**0.7**	**11.1**	**4.3**	**0.1**	**0.3**	**5.4**
Communications	0.6	1.3	71.5	0.9	0.1	13.5	4.4	0.1	0.2	7.4
Computer and related activities	49.7	4.5	19.1	8.5	0.4	3.0	13.6	0.3	1.2	0.04
Research and development	…	…	…	…	…	…	…	…	…	…
Other business activities	69.5	8.8	8.2	3.3	2.6	7.7	0.1	0.2	0.03	2.2

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
2011										
Mining and quarrying, manufacturing, electricity, gas and water supply										
Total	**14.9**	**5.5**	**60.9**	**0.7**	**0.2**	**0.9**	**8.5**	**0.4**	**0.3**	**8.0**
Mining and quarrying	15.5	1.7	76.4	0.3	0.1	0.5	0.6	0.1	0.05	4.8
Mining and quarrying of energy producing materials	13.0	1.8	79.3	0.2	0.1	0.5	0.6	0.1	0.00002	4.6
Mining and quarrying, except energy producing materials	54.0	1.5	33.0	1.4	0.6	0.3	1.3	–	0.7	7.7
Manufacturing	14.5	6.3	59.3	0.5	0.3	0.8	10.3	0.3	0.3	7.6
High tech	39.0	12.1	41.2	0.2	0.1	1.4	3.5	0.5	0.2	1.9
Manufacture of pharmaceuticals	42.5	0.7	52.5	0.7	0.6	1.3	1.3	0.2	0.5	0.2
Manufacture of office machinery and computers	50.7	3.6	36.7	1.7	1.7	0.1	2.5	0.04	0.01	4.7
Manufacture of radio, television and communication equipment and apparatus	45.9	10.6	36.9	0.02	0.01	0.8	1.2	0.3	0.1	4.0
Manufacture of medical, precision and optical instruments, watches and clocks	61.4	7.3	24.0	0.2	0.2	0.9	3.4	0.3	0.3	2.2
Manufacture of aircrafts, including spacecrafts	17.7	18.4	54.8	0.1	0.03	2.1	5.2	0.8	0.2	0.7

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Medium high tech	20.0	7.3	44.6	1.0	0.5	1.1	18.5	0.2	0.8	6.5
Manufacture of chemicals and chemical products	4.8	9.1	46.0	1.0	0.9	0.7	27.6	0.03	0.2	10.6
Manufacture of machinery and equipment, n.e.c.	37.5	3.5	43.2	0.7	0.3	2.0	5.8	0.4	0.2	6.6
Manufacture of electrical machinery and apparatus	35.0	7.6	39.6	3.0	0.9	1.6	5.0	0.8	6.5	0.9
Manufacture of motor vehicles, trailers and semi-trailers	27.3	6.2	41.5	0.4	0.1	0.4	21.2	0.3	0.2	2.6
Manufacture of other transport vehicles	22.0	9.1	60.2	0.5	0.02	2.6	3.7	0.05	–	1.9
Medium low tech	5.8	4.4	70.4	0.5	0.2	0.6	8.9	0.3	0.01	9.1
Manufacture of coke, refined petroleum products	4.7	6.4	58.0	0.7	0.4	0.9	19.0	0.7	–	9.6
Manufacture of rubber and plastic products	3.0	0.6	77.2	0.4	0.3	1.2	9.9	0.02	0.001	7.7
Manufacture of other non-metallic mineral products	4.4	5.1	50.9	1.0	0.1	0.3	1.7	0.04	0.02	36.6
Manufacture of basic metals	1.9	2.7	90.2	0.1	0.1	0.2	1.4	0.05	0.0002	3.4
Manufacture of fabricated metal products	22.3	3.0	64.7	2.2	0.2	1.0	5.8	0.6	0.2	0.4
Construction and repair of vessels	79.3	2.5	15.0	0.04	0.004	1.4	0.9	0.6	0.01	0.3
Low tech	8.7	9.4	61.4	0.3	0.1	0.6	12.4	0.5	1.1	5.6
Manufacture of food products and beverages	14.3	7.2	60.4	0.4	0.04	0.6	8.8	1.1	2.1	5.1
Manufacture of tobacco products	0.1	–	74.9	–	–	0.04	25.0	–	–	–
Manufacture of textiles	8.4	15.8	42.0	0.1	0.1	0.3	9.0	0.2	0.4	23.6
Manufacture of wearing apparel, dressing and dyeing of fur	23.3	35.6	36.6	–	–	1.9	0.03	1.1	1.4	–

(continued)

	R&D	Industrial design	Acquisition of machinery and equipment	Acquisition of technology	Of which acquisition of patent rights and patent licenses	Acquisition of software	Other types of preproduction	Personnel training	Market research	Other
Manufacture of leather, leather products and footwear	11.4	4.1	73.6	1.1	0.3	6.2	–	1.3	2.0	0.4
Manufacture of wood and of products of wood and cork, except furniture	0.01	1.5	57.2	0.03	0.02	0.3	4.2	0.1	0.001	36.7
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	0.2	0.6	75.1	–	–	0.1	23.8	0.1	0.1	0.1
Publishing and printing, reproduction of recorded media	10.3	14.4	58.9	0.03	0.03	4.3	11.9	0.1	0.04	0.01
Manufacture of furniture, manufacturing n.e.c.	45.3	4.2	39.2	3.3	3.0	3.5	0.1	0.3	3.7	0.3
Recycling	0.7	70.8	28.5	–	–	0.005	–	0.01	–	–
Electricity, gas and water supply	17.5	3.3	43.4	4.1	0.02	2.8	4.0	1.9	1.7	21.4
Communications, computer and related activities, research and development, other business activities										
Total	**39.0**	**2.3**	**16.2**	**1.8**	**0.2**	**1.5**	**37.3**	**0.1**	**0.1**	**1.8**
Communications	2.9	1.6	18.8	2.0	0.1	1.5	71.3	0.02	0.1	1.9
Computer and related activities	40.8	4.5	32.5	0.6	0.3	1.6	18.8	0.1	0.2	0.9
Research and development	78.4	2.0	12.5	1.6	0.3	1.2	2.3	0.2	0.04	1.8
Other business activities	47.9	12.9	13.2	1.6	0.2	6.3	17.1	0.5	0.3	0.2

8.9. PERCENTAGE DISTRIBUTION OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY SOURCE OF FUNDS AND ECONOMIC ACTIVITY

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2010								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	**69.1**	**4.7**	**0.3**	**0.01**	**2.7**	**0.1**	**0.001**	**23.2**
Mining and quarrying	58.9	–	–	–	–	–	–	41.1
Mining and quarrying of energy producing materials	56.6	–	–	–	–	–	–	43.4
Mining and quarrying, except energy producing materials	85.0	–	–	–	–	–	–	15.0
Manufacturing	74.5	5.9	0.1	0.01	0.5	0.2	0.001	18.9
High tech	71.2	16.2	0.1	0.05	0.1	0.1	–	12.4
Manufacture of pharmaceuticals	98.1	–	–	–	–	–	–	1.9
Manufacture of office machinery and computers	83.3	16.7	–	–	–	–	–	–
Manufacture of radio, television and communication equipment and apparatus	64.0	16.0	0.5	0.02	0.01	–	–	19.4
Manufacture of medical, precision and optical instruments, watches and clocks	70.4	21.0	0.1	–	0.3	0.2	–	8.2
Manufacture of aircrafts, including spacecrafts	72.9	14.3	–	0.1	–	–	–	12.7

(continued)

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	78.6	2.2	0.2	0.003	0.2	0.2	0.004	18.7
Manufacture of chemicals and chemical product	82.7	0.7	0.02	–	0.4	0.4	0.01	16.1
Manufacture of machinery and equipment, n.e.c.	74.6	3.8	–	–	–	–	–	21.5
Manufacture of electrical machinery and apparatus	89.3	5.7	2.1	0.03	–	–	–	2.9
Manufacture of motor vehicles, trailers and semi-trailers	75.7	0.6	–	–	–	–	–	23.7
Manufacture of other transport vehicles	53.7	6.7	–	–	–	–	–	39.6
Medium low tech	77.1	0.9	0.1	–	0.9	0.2	–	21.0
Manufacture of coke, refined petroleum products	97.8	–	–	–	2.0	–	–	0.2
Manufacture of rubber and plastic products	67.0	0.3	0.5	–	1.3	1.1	–	31.0
Manufacture of other non-metallic mineral products	89.8	–	0.4	–	–	–	–	9.7
Manufacture of basic metals	67.4	0.2	–	–	0.3	0.3	–	32.2
Manufacture of fabricated metal products	87.3	2.7	1.7	–	–	–	–	8.3
Construction and repair of vessels	23.9	32.0	–	–	–	–	–	44.1
Low tech	67.3	0.2	0.3	0.01	0.1	0.02	–	32.0
Manufacture of food products and beverages	85.1	0.4	0.6	–	0.1	–	–	13.7
Manufacture of tobacco products	100	–	–	–	–	–	–	–
Manufacture of textiles	63.3	1.4	–	–	–	–	–	35.3
Manufacture of wearing apparel, dressing and dyeing of fur	40.0	–	–	–	–	–	–	60.0

(continued)

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	54.5	–	0.05	–	–	–	–	45.4
Manufacture of wood and of products of wood and cork, except furniture	75.2	–	0.1	0.1	–	–	–	24.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	67.0	0.02	–	–	–	–	–	32.9
Publishing and printing, reproduction of recorded media	90.7	0.1	0.4	–	0.4	0.4	–	8.5
Manufacture of furniture, manufacturing n.e.c.	98.1	–	–	–	0.3	0.3	–	1.6
Recycling	1.6	–	–	–	–	–	–	98.4
Electricity, gas and water supply	44.7	2.7	2.0	–	22.9	0.2	–	27.8
Communications, computer and related activities, research and development, other business activities								
Total	**77.9**	**2.0**	**1.1**	**0.1**	**0.1**	**-**	**-**	**18.8**
Communications	93.6	1.9	0.02	0.003	–	–	–	4.4
Computer and related activities	93.2	0.4	4.4	0.002	–	–	–	2.0
Research and development	…	…	…	…	…	…	…	…
Other business activities	28.6	2.7	2.8	0.6	0.5	–	–	64.8

(continued)

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
2011								
Mining and quarrying, manufacturing, electricity, gas and water supply								
Total	**69.6**	**4.7**	**0.2**	**0.1**	**1.1**	**0.7**	**-**	**24.3**
Mining and quarrying	82.3	0.04	–	–	–	–	–	17.7
Mining and quarrying of energy producing materials	85.1	0.04	–	–	–	–	–	14.9
Mining and quarrying, except energy producing materials	41.2	–	–	–	–	–	–	58.8
Manufacturing	67.1	5.9	0.2	0.1	1.3	0.9	–	25.4
High tech	67.2	18.9	0.1	0.8	2.3	–	–	10.7
Manufacture of pharmaceuticals	72.2	22.0	–	–	–	–	–	5.8
Manufacture of office machinery and computers	55.3	44.7	–	–	–	–	–	0.01
Manufacture of radio, television and communication equipment and apparatus	59.9	26.9	0.4	–	0.1	–	–	12.7
Manufacture of medical, precision and optical instruments, watches and clocks	63.9	21.9	0.1	–	6.6	–	–	7.5
Manufacture of aircrafts, including spacecrafts	72.9	11.1	–	2.1	0.5	–	–	13.3

(continued)

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Medium high tech	83.4	2.6	0.4	0.01	0.03	0.03	–	13.6
Manufacture of chemicals and chemical products	86.1	0.7	–	–	0.1	0.1	–	13.1
Manufacture of machinery and equipment, n.e.c.	78.5	7.9	0.2	0.04	–	–	–	13.4
Manufacture of electrical machinery and apparatus	86.0	6.7	1.0	–	–	–	–	6.3
Manufacture of motor vehicles, trailers and semi-trailers	84.7	0.1	–	–	–	–	–	15.2
Manufacture of other transport vehicles	69.0	2.6	4.1	0.01	–	–	–	24.3
Medium low tech	64.3	0.7	0.1	–	0.2	0.1	–	34.7
Manufacture of coke, refined petroleum products	63.9	–	–	–	0.2	–	–	35.9
Manufacture of rubber and plastic products	56.4	0.3	3.0	–	–	–	–	40.3
Manufacture of other non-metallic mineral products	66.4	–	0.1	–	–	–	–	33.5
Manufacture of basic metals	67.7	0.1	–	–	0.3	0.3	–	31.9
Manufacture of fabricated metal products	66.1	4.5	0.4	–	–	–	–	28.9
Construction and repair of vessels	22.0	21.5	0.005	–	–	–	–	56.5
Low tech	71.3	0.1	0.04	0.01	12.7	–	–	15.9
Manufacture of food products and beverages	83.4	0.04	0.05	–	2.3	0.4	–	14.3
Manufacture of tobacco products	76.5	–	–	–	–	–	–	23.5
Manufacture of textiles	62.5	0.02	–	–	–	–	–	37.5
Manufacture of wearing apparel, dressing and dyeing of fur	91.4	7.2	–	–	–	–	–	1.5

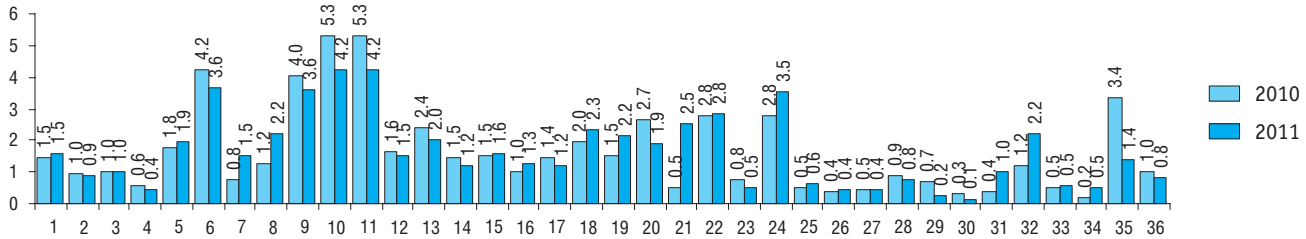
(continued)

	Own funds of enterprises	Federal budget	Provincial and municipal budgets	Nonbudgetary funds	Funds from abroad	Of which from EU Member States, Iceland, Liechtenstein, Norway, and Switzerland	Venture funds	Other
Manufacture of leather, leather products and footwear	100	–	–	–	–	–	–	–
Manufacture of wood and of products of wood and cork, except furniture	27.6	–	0.1	0.1	6.7	–	–	65.5
Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products	53.3	0.01	0.03	–	39.5	39.5	–	7.2
Publishing and printing, reproduction of recorded media	89.0	0.1	0.04	–	–	–	–	10.9
Manufacture of furniture, manufacturing n.e.c.	96.0	1.0	–	–	–	–	–	3.0
Recycling	92.4	–	–	–	–	–	–	7.6
Electricity, gas and water supply	70.1	1.3	1.2	0.001	1.4	–	–	26.1
Communications, computer and related activities, research and development, other business activities								
Total	**64.2**	**22.7**	**0.2**	**0.3**	**0.5**	**0.05**	**0.0004**	**12.2**
Communications	98.5	0.5	0.1	0.002	–	–	–	0.9
Computer and related activities	96.4	0.8	0.6	0.1	1.1	0.9	–	1.0
Research and development	25.3	50.4	0.3	0.6	0.8	0.05	0.001	22.6
Other business activities	45.9	4.7	0.5	0.02	1.6	–	–	47.2

8.10. INTENSITY OF EXPENDITURE ON TECHNOLOGICAL INNOVATION BY ECONOMIC ACTIVITY

(expenditure on technological innovation as a percentage of total sales)

Mining and quarrying, manufacturing, electricity, gas and water supply



1– Total
2 – Mining and quarrying
3 – Mining and quarrying of energy producing materials
4 – Mining and quarrying, except energy producing materials
5 – Manufacturing
6 – High tech
7 – Manufacture of pharmaceuticals
8 – Manufacture of office machinery and computers
9 – Manufacture of radio, television and communication equipment and apparatus
10 – Manufacture of medical, precision and optical instruments, watches and clocks
11 – Manufacture of aircrafts, including spacecrafts
12 – Medium high tech
13 – Manufacture of chemicals and chemical products
14 – Manufacture of machinery and equipment, n.e.c.
15 – Manufacture of electrical machinery and apparatus
16 – Manufacture of motor vehicles, trailers and semi-trailers
17 – Manufacture of other transport vehicles
18 – Medium low tech
19 – Manufacture of coke, refined petroleum products
20 – Manufacture of rubber and plastic products
21 – Manufacture of other non-metallic mineral products
22 – Manufacture of basic metals
23 – Manufacture of fabricated metal products
24 – Construction and repair of vessels
25 – Low tech
26 – Manufacture of food products and beverages
27 – Manufacture of tobacco products
28 – Manufacture of textiles
29 – Manufacture of wearing apparel, dressing and dyeing of fur
30 – Manufacture of leather, leather products and footwear
31 – Manufacture of wood and of products of wood and cork, except furniture
32 – Manufacture of cellulose, wood pulp, paper and cardboard and appropriate paper products
33 – Publishing and printing, reproduction of recorded media
34 – Manufacture of furniture; manufacturing n.e.c.
35 – Recycling
36 – Electricity, gas and water supply

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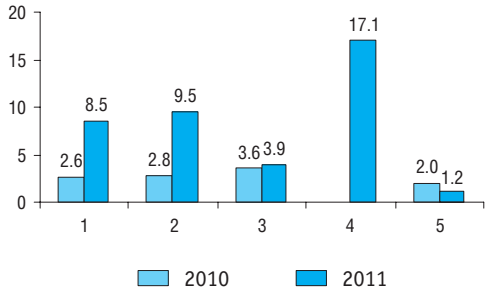
Communications, computer and related activities, research and development, other business activities



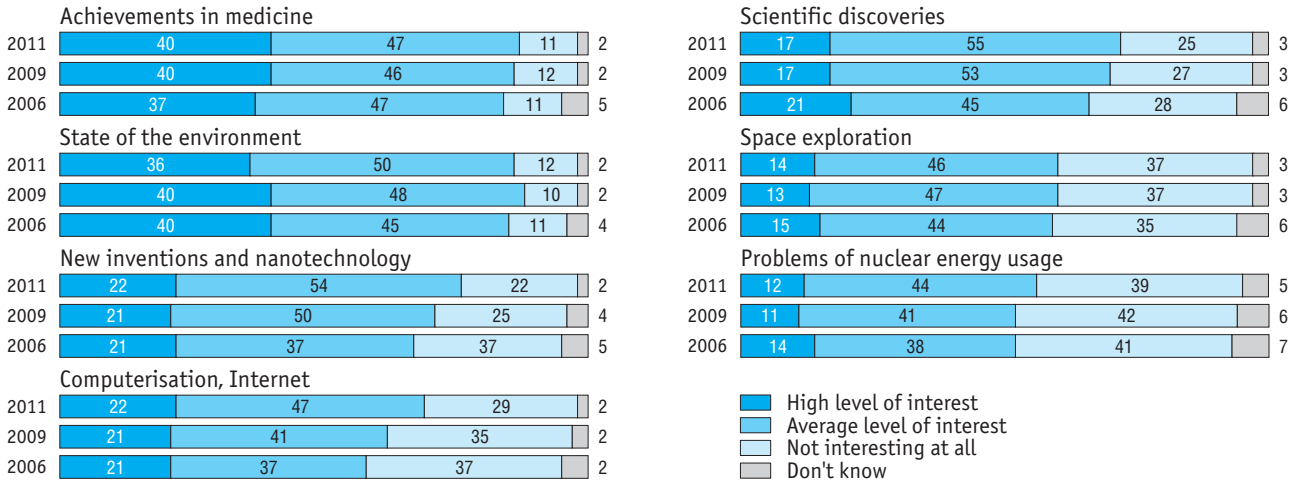
1 – Total
2 – Communications
3 – Computer and related activities
4 – Research and development
5 – Other business activities

9. Public Attitudes towards Science and Technology

9.1. PUBLIC INTEREST IN SCIENCE ISSUES*

(as a percentage of the total number of respondents)

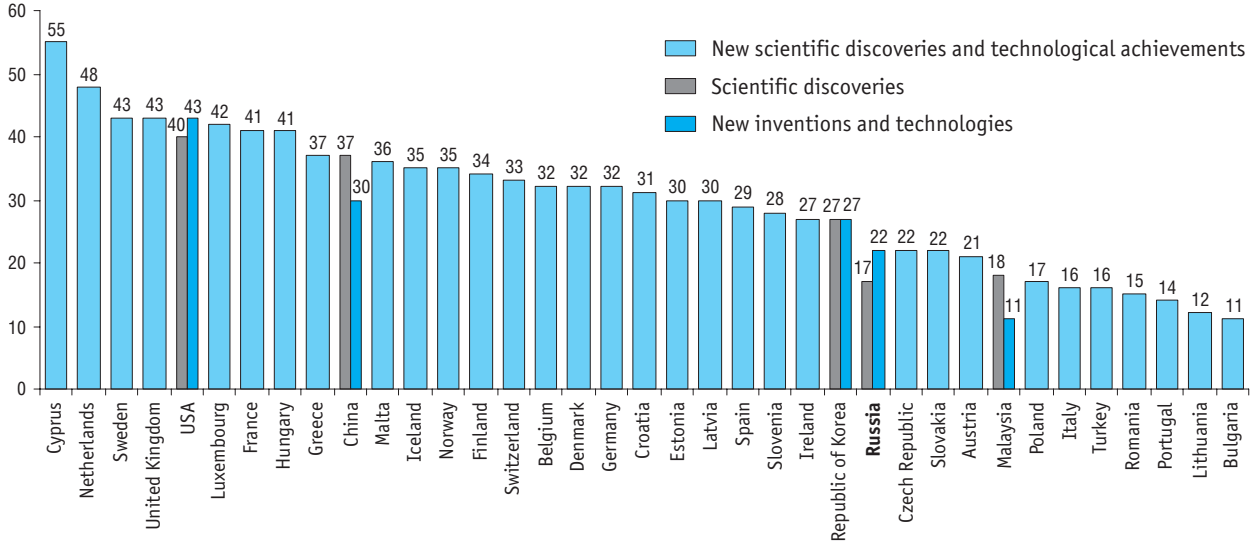
Russia: to what extent are you interested in the following topics?



* In this section the data for Russia is based on the results of representative surveys of the adult population (aged 18 and older), organised by HSE Institute for Statistical Studies and Economics of Knowledge and conducted within HSE Basic Research Programme. The data sources for the European countries are: *Science and Technology, Eurobarometer 340*, Luxembourg, 2010; *Europeans, Science and Technology, Eurobarometer 224*, Luxembourg, 2005; for the United States and other countries the following data sources were used: *National Science Board. Science and Engineering Indicators* - 2010. Arlington, VA: National Science Foundation.

(continued)

High level of public interest in new scientific discoveries and technological achievements*



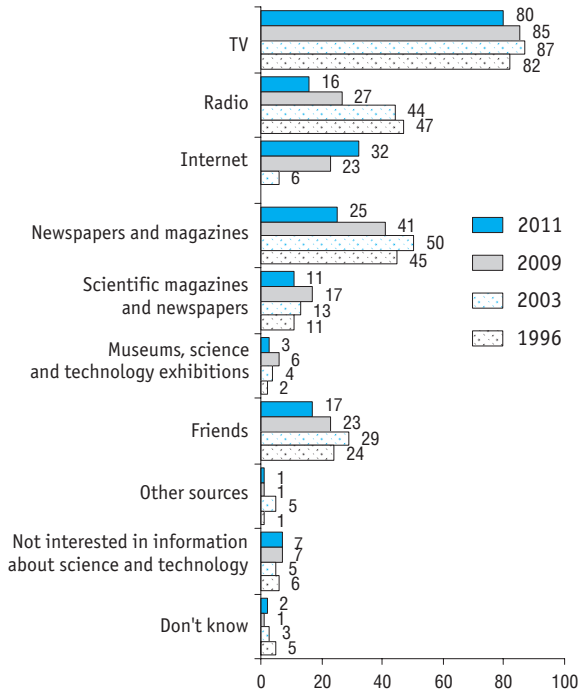
* In some countries, the question concerned scientific discoveries, new inventions and technologies viewed separately. The data refers to the following years: Russia – 2011, the United States – 2008, European countries – 2010, the Republic of Korea – 2004, China – 2001, Malaysia – 2004.

9.2. SOURCES OF INFORMATION ABOUT SCIENCE AND TECHNOLOGY

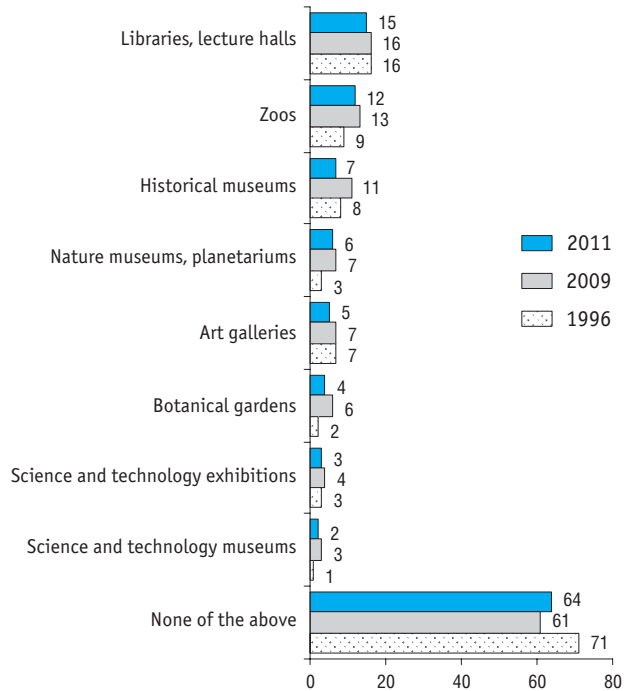
(as a percentage of the total number of respondents)

Russia

Main sources of information about science and technology



Visited over the past 12 months



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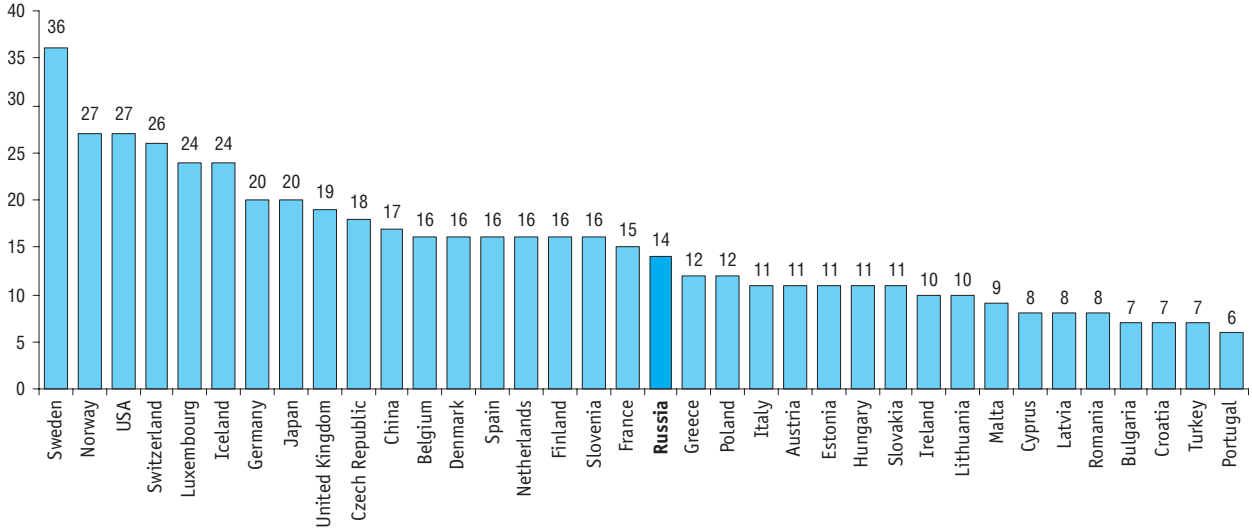
Visited science museums in the last 12 months*

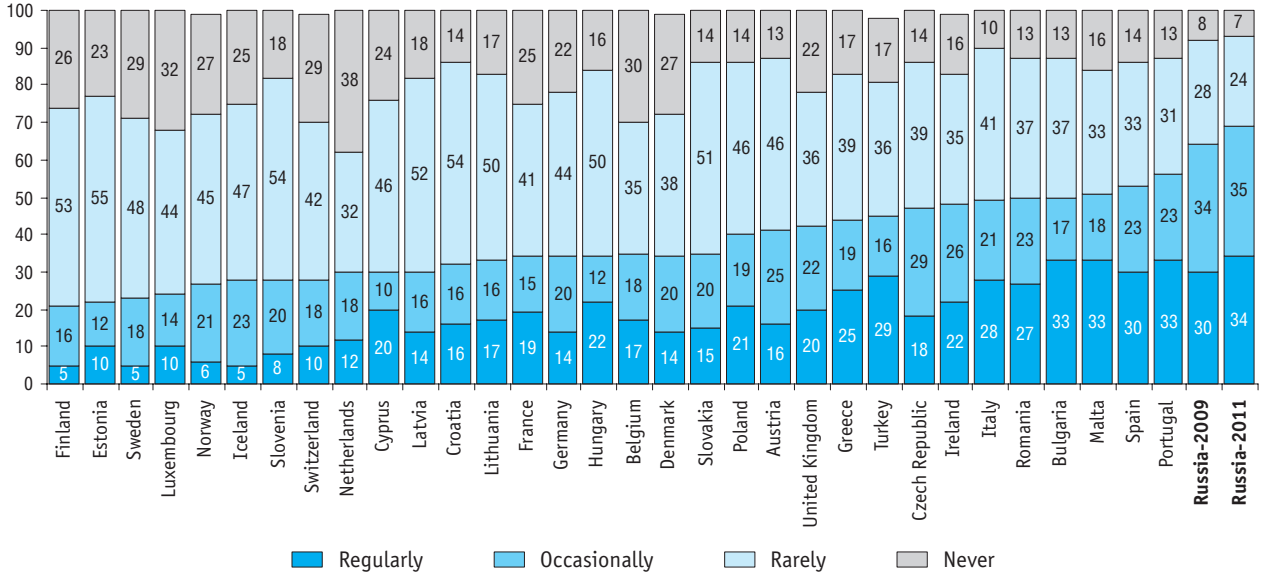


* The data refers to the following years: Russia – 2011, the United States – 2008, China – in 2007, European countries – 2005, Japan – 2001.

9.3. INVOLVEMENT OF THE POPULATION IN SCIENCE AND TECHNOLOGY ISSUES*

*(as a percentage of the total number of respondents**)*

Read articles about science in newspapers, magazines, on the Internet



* The data on the European countries refers to 2005.

** The percentage of respondents who gave the answer 'don't know' isn't presented.

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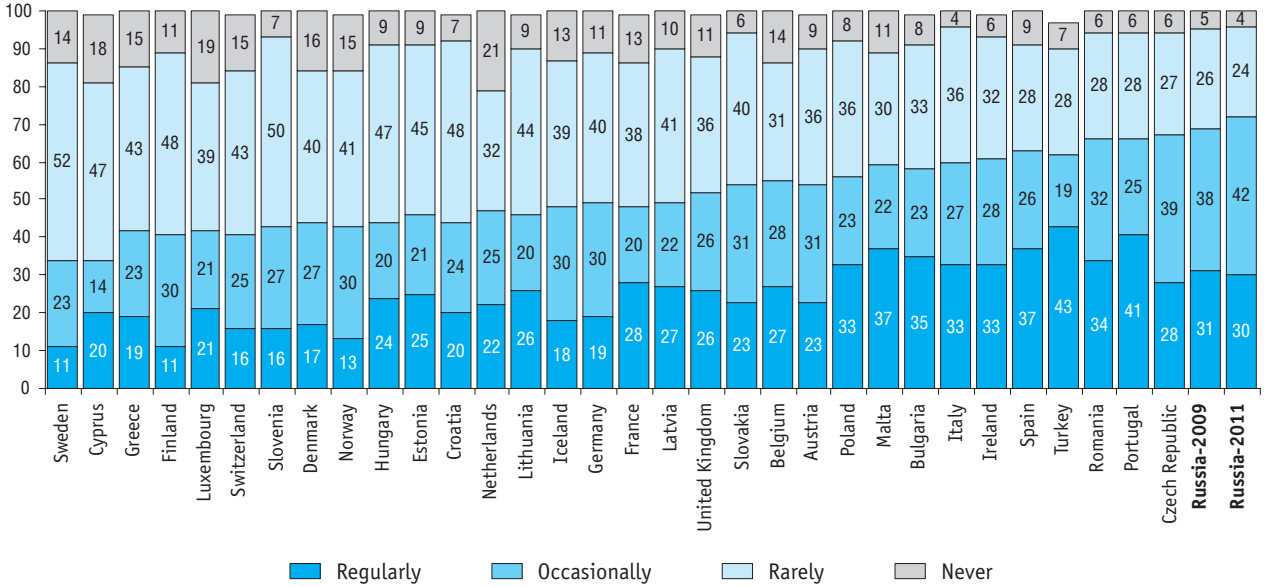
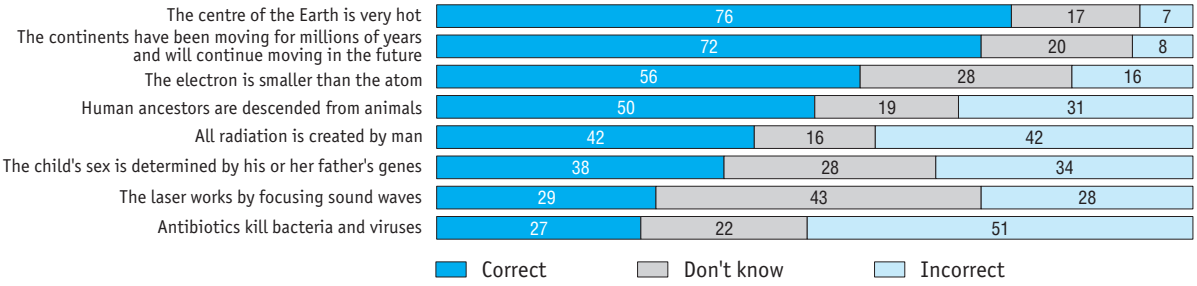
Talk with friends about science and technology



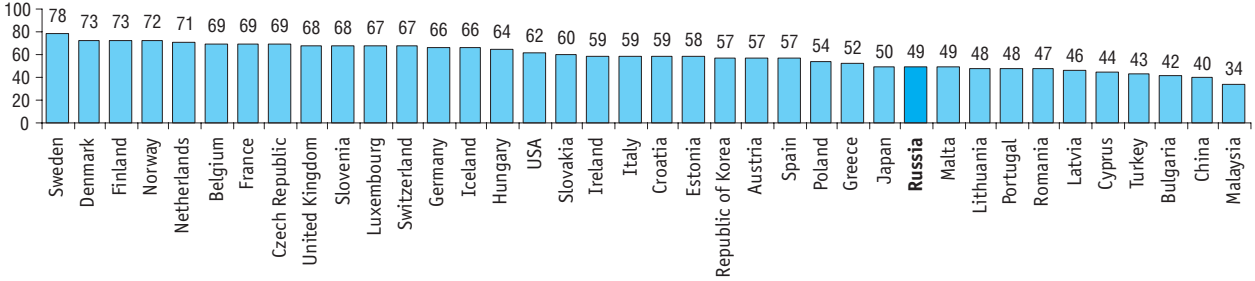
9.4. POPULATION'S SCIENTIFIC LITERACY*

*(as a percentage of the total number of respondents**)*

Russia: is the following statement true or false?



The level of scientific literacy of the population**



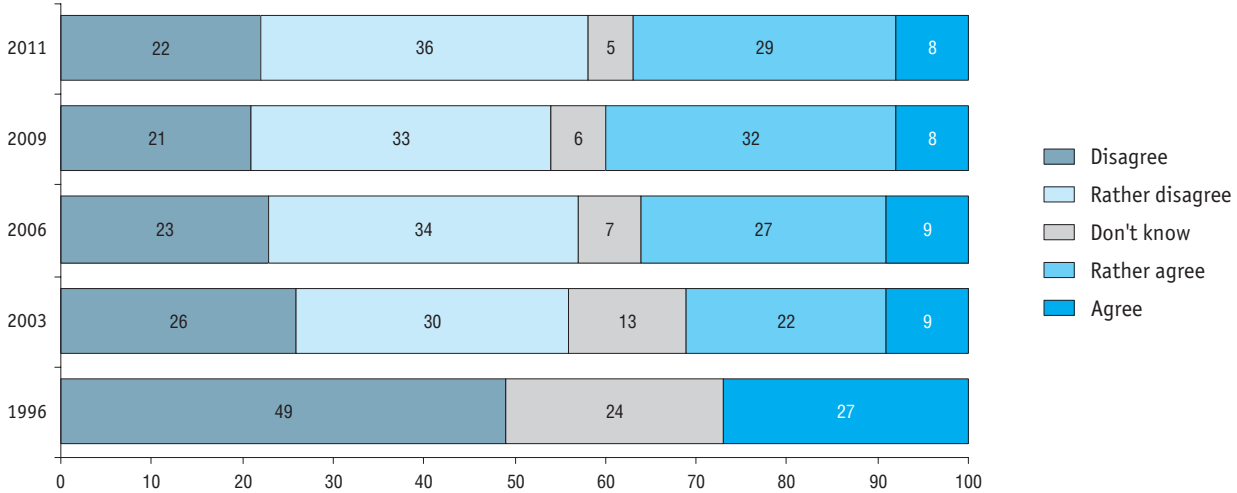
* The data refers to the following years: Russia – 2011, the USA – 2008, European countries – 2005, the Republic of Korea and Malaysia – 2004, Japan – 2001.

** The level of scientific literacy was estimated on the basis of the average number of right answers in each country.

9.5. PUBLIC OPINION ON SCIENTIFIC KNOWLEDGE

(as a percentage of the total number respondents)

Russia: Do you agree with the statement 'Scientific knowledge is unnecessary in daily life'?



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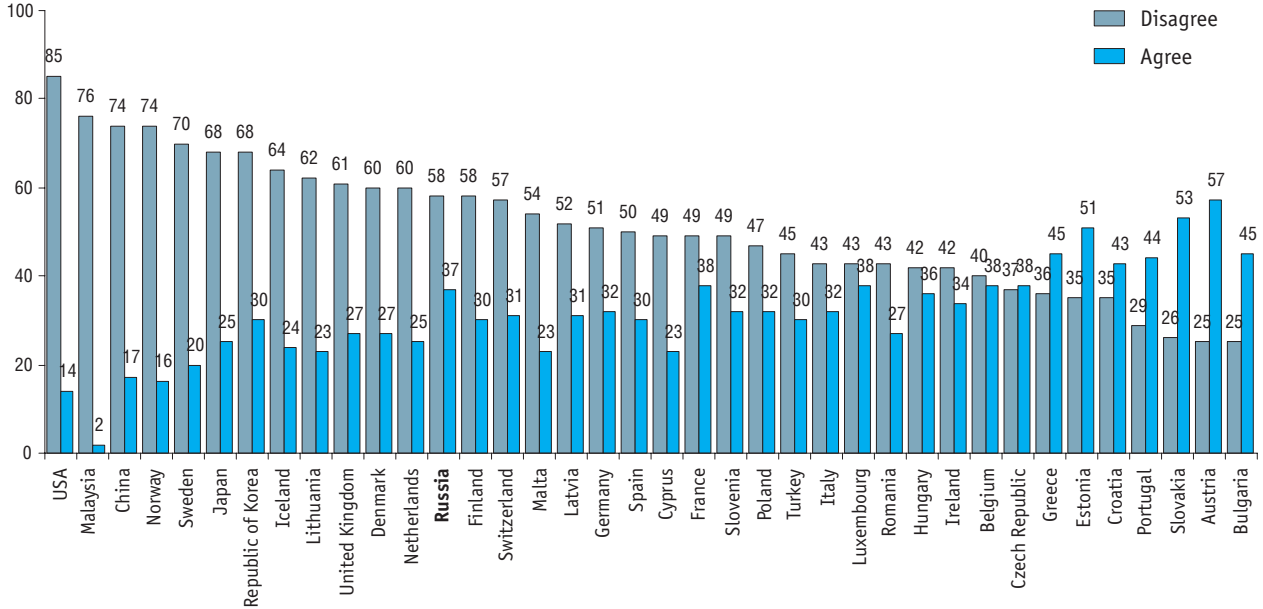
Scientific knowledge is unnecessary in daily life*



* The data refers to the following years: Russia – 2011, European countries – 2010, the Republic of Korea – 2008, the United States and Malaysia – 2004, Japan – 2001.

10. International Comparisons

10.1. GROSS DOMESTIC EXPENDITURE ON R&D

(million current PPP $)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Russia	**8122.3**	**10726.9**	**12852.3**	**14563.6**	**16317.2**	**16487.8**	**18115.0**	**22866.6**	**26562.7**	**30060.9**	**33575.3**	**32793.1**	**33725.2**
CIS countries													
Armenia	…	11.6	19.6	20.4	22.5	22.6	27.0	31.5	33.0	39.1	44.3	…	…
Azerbaijan	…	59.7	67.9	67.7	82.8	86.2	83.0	89.9	114.7	126.4	212.3	…	…
Belarus	…	372.1	391.1	365.8	393.9	463.3	566.5	626.5	1020.3	885.8	782.7	…	…
Kazakhstan	…	129.1	182.2	235.6	260.4	288.7	373.7	365.7	352.6	385.9	421.0	…	…
Kyrgyzstan	…	10.2	12.1	14.2	17.4	17.2	17.7	21.8	24.4	22.2	19.5	…	…
Republic of Moldova	…	…	…	…	22.4	26.7	33.9	37.3	53.2	57.4	54.0	…	…
Tajikistan	…	…	5.3	4.7	5.1	5.7	9.3	11.4	8.0	9.0	12.2	…	…
Turkmenistan	…	…	…	…	…	…	…	…	…	…	…	…	…
Ukraine	…	1550.2	1841.2	1920.2	2390.2	2680.3	3074.4	2765.5	2761.4	2863.6	2513.6	…	…
Uzbekistan	…	…	…	…	…	…	…	…	…	…	…	…	…
OECD countries													
Australia	…	7942.2	…	9885.3	…	11694.9	…	15449.4	…	19028.9	…	…	…
Austria	2892.9	4475.7	4787.3	5229.8	5697.6	6003.4	6802.5	7378.6	7921.0	8854.1	8839.3	9254.2	9752.6
Belgium	3803.5	5572.3	6065.3	6010.9	5891.1	6027.2	6171.1	6713.0	7171.7	7799.3	8031.4	8154.2	…
Canada	11307.0	16689.7	18995.1	19145.3	20134.1	21675.8	23090.0	24075.7	24794.8	24722.3	24568.4	24066.9	24345.9
Chile	…	…	…	…	…	…	…	…	753.9	963.5	…	…	…
Czech Republic	1263.2	1863.9	1991.7	2063.9	2296.8	2454.9	2947.6	3555.5	3894.8	3793.9	3977.9	4151.7	…
Denmark	2189.1	…	3763.8	4147.2	4224.2	4335.1	4418.9	4855.8	5314.1	6235.8	6478.6	6816.0	…
Estonia	…	81.4	102.3	116.6	139.0	170.2	207.2	290.3	313.1	379.1	378.3	444.4	…
Finland	2173.9	4446.0	4564.4	4814.7	4951.1	5386.6	5601.2	6065.7	6640.1	7487.9	7496.3	7588.7	…
France	27486.5	32967.0	35791.2	38152.9	36847.6	37971.9	39235.7	41995.9	44035.4	46547.8	49143.5	49990.8	…

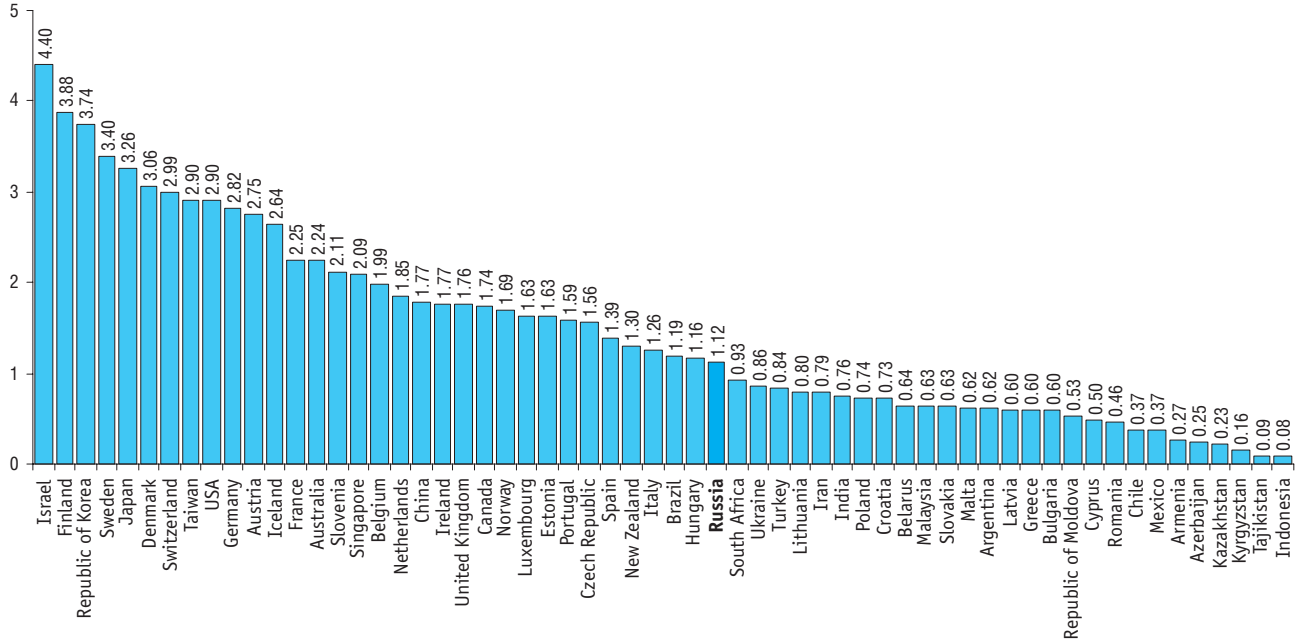
(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Germany	40241.5	52357.7	54406.0	56657.0	59420.8	61307.6	64298.8	70200.4	74056.0	81970.7	83297.2	86299.4	...
Greece	677.9	...	1268.7	...	1419.2	1468.6	1615.5	1748.9	1867.8	...	...	...	...
Hungary	668.4	977.0	1270.2	1492.6	1457.9	1437.2	1615.7	1852.2	1871.7	2058.2	2358.5	2382.8	...
Iceland	95.2	216.5	256.1	263.8	251.0	...	287.1	326.3	310.8	333.6	...	...	...
Ireland	815.5	1222.7	1292.9	1430.2	1613.4	1829.4	2009.4	2252.9	2541.0	2749.8	3138.5	3197.6	...
Israel	2666.9	6313.6	6871.9	7051.7	6377.0	6883.3	7145.9	7896.3	9214.3	9614.7	9156.8	9589.2	...
Italy	11698.2	15251.2	16797.3	17268.9	17290.7	17476.3	17999.0	20199.0	22327.2	24075.9	24534.5	24269.2	...
Japan	82348.3	98896.4	103992.9	108166.2	112269.5	117420.5	128694.6	138497.6	147585.1	148719.2	137314.2	140832.8	...
Luxembourg	...	387.3	...	...	451.9	485.2	495.3	616.4	640.2	682.8	684.5	713.1	...
Mexico	1939.0	3359.7	3631.1	4171.3	4391.9	4748.2	5346.2	5576.2	5682.1	...	...	...	...
Netherlands	6562.4	9065.1	9546.4	9698.0	9865.4	10416.1	10904.4	11722.7	12067.5	12467.8	12374.1	12968.7	...
New Zealand	609.7	...	962.6	...	1108.0	...	1189.3	...	1438.1	...	1646.4	...	...
Norway	1735.5	...	2661.9	2792.2	2985.6	3063.3	3315.9	3711.9	4192.0	4630.5	4693.5	4741.6	...
Poland	1813.1	2605.4	2609.8	2472.2	2474.9	2769.7	2982.4	3196.0	3622.3	4150.9	4871.1	5587.8	...
Portugal	709.1	1324.5	1471.1	1453.2	1443.6	1550.5	1755.2	2398.2	2991.2	3981.9	4349.2	4304.6	...
Republic of Korea	13304.9	18558.5	21258.8	22506.8	24007.4	27871.1	30618.3	35293.2	40722.5	43906.4	47168.5	53184.9	...
Slovakia	412.0	384.4	411.3	398.3	419.5	403.8	440.1	482.2	518.2	594.1	590.3	799.6	...
Slovenia	393.5	482.2	549.0	577.6	519.6	619.8	674.9	796.0	795.7	972.6	1031.2	1162.0	...
Spain	5004.0	7791.8	8414.6	9808.5	10905.7	11783.1	13330.8	16063.8	18324.7	20414.9	20546.6	20386.1	...
Sweden	6301.0	...	10370.4	...	10362.4	10448.1	10509.9	11944.4	11958.0	13496.1	12488.7	12535.5	...
Switzerland	...	5766.8	...	...	...	7468.8	...	...	...	10525.2	...	...	...
Turkey	1205.4	2823.8	3016.5	3008.9	2840.0	3567.7	4617.5	5193.4	7051.9	7744.5	8815.7	9582.5	...
United Kingdom	21914.9	27863.3	29168.4	30635.7	31037.9	32012.3	34080.7	37030.7	38752.2	39396.9	39537.8	39137.8	...
USA	184077.0	268121.0	278239.0	277066.0	289736.0	300293.0	325936.0	350923.0	377594.0	403668.0	401576.0	...	...

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU countries which are not OECD members													
Bulgaria	…	258.6	247.8	284.5	310.3	336.2	347.4	390.5	429.2	498.9	549.8	625.6	…
Cyprus	…	33.2	36.2	45.1	56.2	65.5	76.6	89.6	103.6	107.1	120.4	123.8	…
Latvia	…	84.1	81.7	88.1	80.0	95.4	133.7	198.0	242.3	284.7	166.9	221.2	…
Lithuania	…	190.0	238.4	244.9	256.8	311.2	336.9	387.6	495.6	561.1	476.2	482.2	…
Malta	…	…	…	20.0	20.0	42.7	48.0	55.8	57.5	58.1	56.6	68.1	…
Romania	976.6	468.3	558.6	579.8	643.9	732.2	831.8	1092.7	1440.3	1866.6	1480.2	1463.1	…
Other countries													
Argentina	…	1477.1	1397.1	1158.6	1358.7	1625.2	1930.8	2321.3	2666.2	2999.3	3499.1	3995.3	…
Brazil	…	12451.2	13212.6	13015.2	13082.5	13354.7	15372.6	17123.6	20317.4	22216.8	23933.2	26016.5	…
China	10515.4	27207.3	31724.9	39594.1	47126.7	57782.3	71054.9	86669.5	102436.3	120806.6	154147.4	178980.7	…
Croatia	…	503.1	463.3	519.7	564.2	663.6	602.3	568.8	668.7	784.6	739.8	630.5	…
India	…	12275.6	12816.4	13321.6	14593.2	16575.8	19617.9	21790.0	24324.7	…	…	…	…
Indonesia	…	335.9	250.1	…	…	…	…	…	…	…	808.5	…	…
Iran	…	…	2542.8	2756.2	3715.3	3496.4	4726.8	4701.0	…	6434.4	…	…	…
Malaysia	…	993.7	…	1522.2	…	1660.6	…	2090.5	…	…	…	…	…
Singapore	1027.5	2470.9	2777.2	2997.1	3124.5	3669.3	4246.7	4699.5	5768.1	6712.0	5668.7	6150.7	…
South Africa	…	…	2280.2	…	2726.5	3153.9	3654.2	4135.3	4441.7	4708.2	…	…	…
Taiwan	5531.4	8768.4	9382.7	10480.9	11690.0	13109.1	14527.0	16568.0	18494.6	20657.5	21655.8	23918.1	…

10.2. GROSS DOMESTIC EXPENDITURE ON R&D AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT: 2011*



* Or the nearest years for which data is available.

10.3. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SECTOR OF PERFORMANCE: 2011*

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Russia	**100**	**29.8**	**61.0**	**9.0**	**0.2**
CIS countries					
Armenia	100	88.8	...	11.2	...
Azerbaijan	100	71.7	22.0	6.3	–
Belarus	100	26.5	52.0	7.3	14.2
Kazakhstan	100	38.5	32.7	15.2	13.5
Kyrgyzstan	100	64.6	23.3	12.1	–
Republic of Moldova	100	77.1	11.3	11.6	–
Tajikistan	100	86.2	...	13.8	...
Turkmenistan	...	...	...	...	...
Ukraine	100	38.7	54.8	6.5	–
Uzbekistan	...	...	...	...	...
OECD countries					
Australia	100	12.2	61.3	23.9	2.6
Austria	100	5.3	68.1	26.1	0.5
Belgium	100	9.4	66.3	23.3	1.0
Canada	100	9.8	52.3	37.6	0.4
Chile	100	9.7	40.4	40.8	9.1
Czech Republic	100	19.4	62.0	18.0	0.5
Denmark	100	2.1	68.1	29.4	0.4
Estonia	100	10.6	50.2	38.0	1.2
Finland	100	9.2	69.6	20.4	0.7
France	100	16.4	61.2	21.3	1.2

* Or the nearest years for which data is available.

(continued)

	Gross domestic expenditure on R&D	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
Germany	100	14.8	67.2	18.0	...
Greece	100	20.9	28.6	49.2	1.3
Hungary	100	18.5	59.8	19.9	...
Iceland	100	17.8	54.6	25.1	2.5
Ireland	100	4.4	66.6	29.0	...
Israel	100	3.9	79.8	13.2	3.1
Italy	100	14.3	53.6	29.0	3.2
Japan	100	9.0	76.5	12.9	1.6
Luxembourg	100	17.7	70.9	11.4	...
Mexico	100	25.2	47.4	26.1	1.3
Netherlands	100	11.7	47.9	40.4	...
New Zealand	100	25.7	41.4	32.8	...
Norway	100	16.4	51.2	32.3	...
Poland	100	35.9	26.6	37.2	0.3
Portugal	100	7.2	45.5	37.0	10.4
Republic of Korea	100	12.7	74.8	10.8	1.7
Slovakia	100	30.0	42.1	27.6	0.3
Slovenia	100	18.2	67.8	13.9	0.1
Spain	100	20.1	51.5	28.3	0.2
Sweden	100	4.9	68.7	26.3	0.0
Switzerland	100	0.7	73.5	24.2	1.6
Turkey	100	11.4	42.5	46.0	...
United Kingdom	100	9.4	60.9	27.2	2.4
USA	100	11.7	70.3	13.5	4.4

(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	37.4	50.1	11.8	0.7
Cyprus	100	19.5	17.5	49.6	13.4
Latvia	100	23.0	37.0	40.0	–
Lithuania	100	17.6	29.2	53.2	–
Malta	100	3.7	59.3	37.0	0.0
Romania	100	36.8	38.3	24.5	0.4
Other countries					
Argentina	100	44.3	23.2	30.9	1.6
Brazil	100	21.3	40.2	38.4	0.1
China	100	18.1	73.4	8.5	...
Croatia	100	27.5	44.1	28.2	0.1
India	100	61.7	33.9	4.4	–
Indonesia	100	…	…	37.9	…
Iran	100	56.1	10.6	33.3	...
Malaysia	100	5.2	84.9	9.9	–
Singapore	100	10.4	60.8	28.8	...
South Africa	100	20.3	58.6	19.9	1.1
Taiwan	100	16.0	71.5	12.1	0.4

10.4. PERCENTAGE DISTRIBUTION OF GROSS DOMESTIC EXPENDITURE ON R&D BY SOURCE OF FUNDS: 2011*

	Gross domestic expenditure on R&D	Government	Business enterprise sector	Other funds from national sources	Funds from abroad
Russia	**100**	**67.1****	**27.7**	**1.0**	**4.3**
		CIS countries			
Armenia	100	59.9	...	...	4.2
Azerbaijan	100	74.3	24.8	0.8	0.1
Belarus	100	62.5	28.8	0.2	8.5
Kazakhstan	100	31.4	50.7	16.9	1.0
Kyrgyzstan	100	63.6	36.4	–	–
Republic of Moldova	100	...	...	...	6.5
Tajikistan	100	82.1	1.1	0.6	...
Turkmenistan	...	...	...	...	...
Ukraine	100	49.8	25.9	0.4	22.3
Uzbekistan	...	...	...	...	...
		OECD countries			
Australia	100	34.5	62.0	1.9	1.6
Austria	100	38.7	44.6	0.4	16.2
Belgium	100	25.3	58.6	4.0	12.1
Canada	100	34.3	46.5	11.9	7.3
Chile	100	33.8	43.7	19.2	3.3
Czech Republic	100	39.9	48.9	0.8	10.4
Denmark	100	27.7	60.3	3.2	8.8
Estonia	100	44.1	43.6	0.8	11.4
Finland	100	25.7	66.1	1.3	6.9
France	100	39.7	51.0	2.0	7.3

* Or the nearest years for which data is available.
** Including federal budget appropriations, general university funds and funds of government sector institutions (e.g. own funds of R&D-performing institutions).

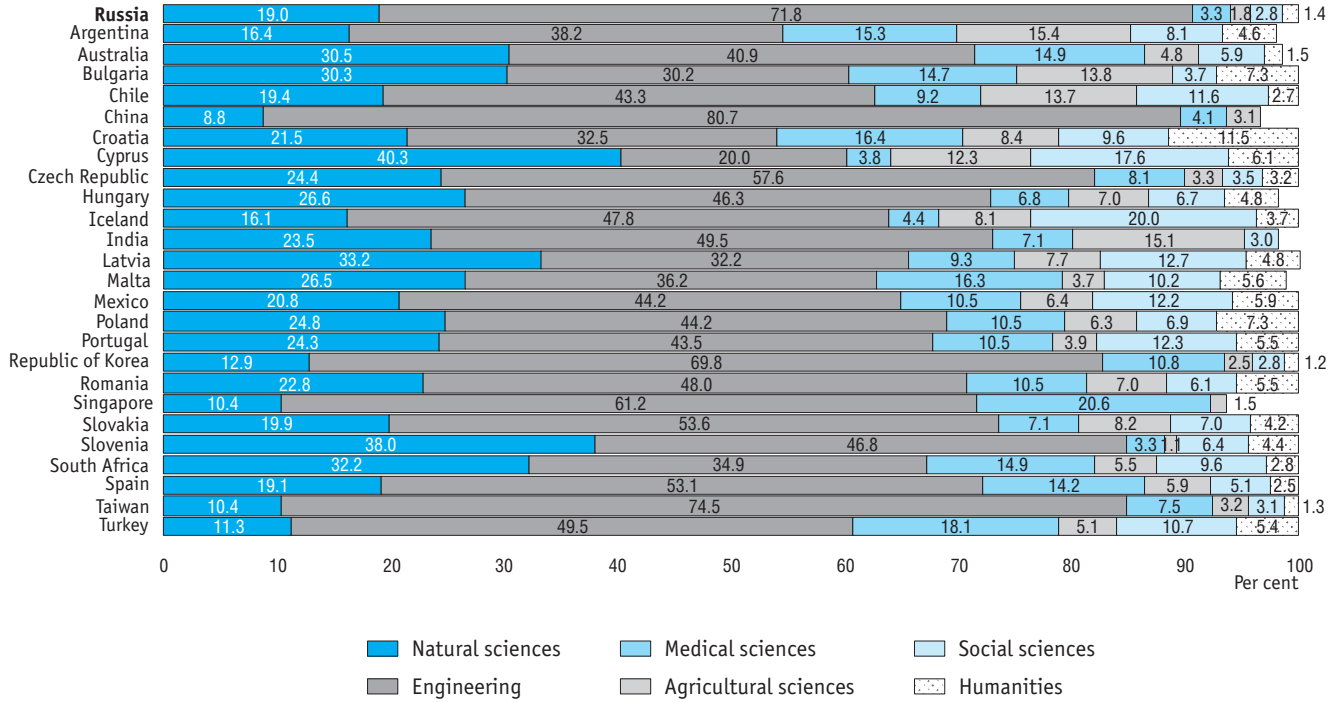
(continued)

	Gross domestic expenditure on R&D	Government	Business enterprise sector	Other funds from national sources	Funds from abroad
Germany	100	29.7	66.1	0.3	3.8
Greece	100	46.8	31.1	3.1	19.0
Hungary	100	39.3	47.4	0.9	12.4
Iceland	100	38.8	50.3	0.8	10.0
Ireland	100	31.6	51.0	1.8	15.6
Israel	100	14.0	51.6	4.8	29.6
Italy	100	42.1	44.2	4.3	9.4
Japan	100	17.2	75.9	6.4	0.4
Luxembourg	100	29.7	65.9	0.2	4.3
Mexico	100	50.2	45.1	3.3	1.4
Netherlands	100	40.9	45.1	3.1	10.8
New Zealand	100	45.7	38.5	10.5	5.4
Norway	100	46.8	43.6	1.4	8.2
Poland	100	60.9	24.4	2.8	11.8
Portugal	100	45.3	44.0	6.6	4.1
Republic of Korea	100	26.7	71.8	1.2	0.2
Slovakia	100	49.6	35.1	0.7	14.7
Slovenia	100	35.3	58.4	0.3	6.0
Spain	100	47.1	43.4	4.1	5.5
Sweden	100	27.5	58.8	3.2	10.4
Switzerland	100	22.8	68.2	3.0	6.0
Turkey	100	30.8	45.1	23.2	0.8
United Kingdom	100	32.1	45.1	6.3	16.4
USA	100	31.3	61.6	7.1	...

(continued)

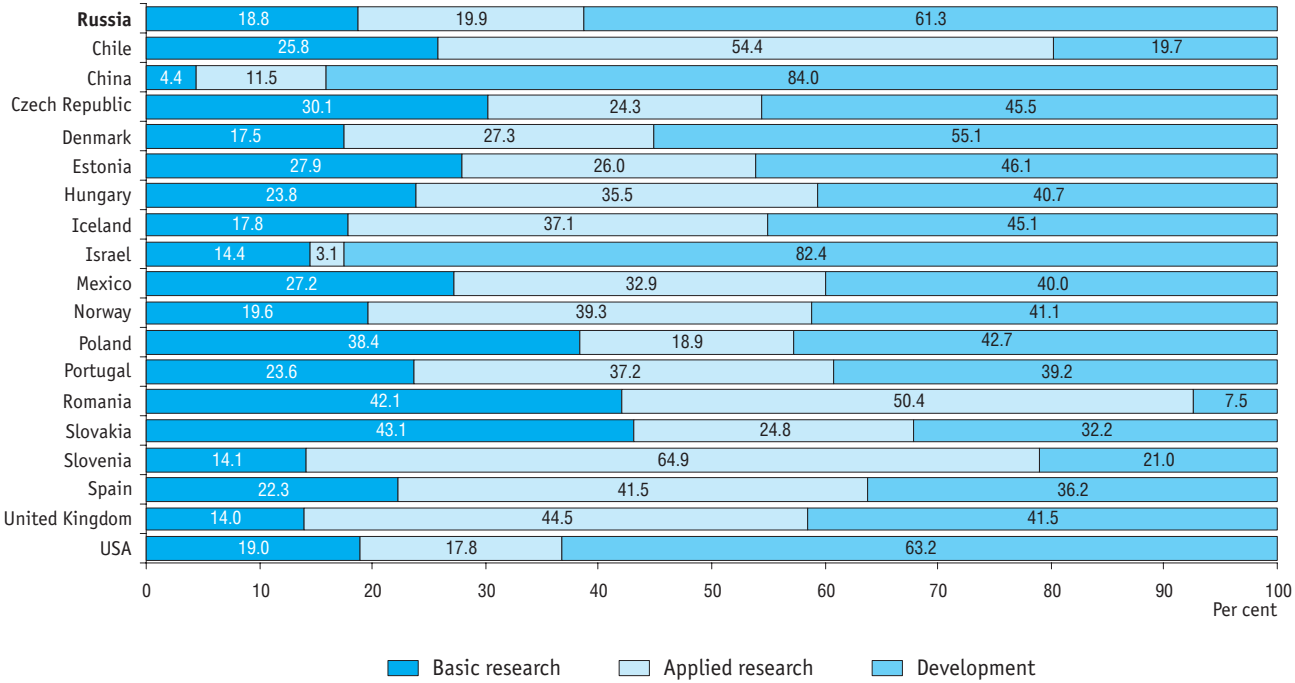
	Gross domestic expenditure on R&D	Government	Business enterprise sector	Other funds from national sources	Funds from abroad
EU countries which are not OECD members					
Bulgaria	100	60.5	30.2	0.9	8.4
Cyprus	100	69.0	15.7	3.3	12.1
Latvia	100	26.4	38.8	1.4	33.4
Lithuania	100	47.5	24.1	8.4	20.0
Malta	100	51.5	30.5	0.0	18.0
Romania	100	54.4	32.3	2.2	11.1
Other countries					
Argentina	100	74.7	22.3	2.4	0.6
Brazil	100	52.7	45.4	1.9	–
China	100	24.0	71.7	...	1.3
Croatia	100	49.2	38.8	2.2	9.9
India	100	66.1	33.9	–	–
Indonesia	100	84.5	14.7	0.2	...
Iran	100	61.6	30.9	7.4	...
Malaysia	100	2.4	84.5	6.6	0.2
Singapore	100	40.2	53.1	1.8	4.9
South Africa	100	45.1	42.6	0.8	11.4
Taiwan	100	27.5	71.2	1.2	0.0

10.5. GROSS DOMESTIC EXPENDITURE ON R&D BY FIELD OF SCIENCE AND TECHNOLOGY: 2011*



* Or the nearest years for which data is available.

10.6. INTRAMURAL CURRENT EXPENDITURE ON R&D BY TYPE OF ACTIVITY: 2011*



* Or the nearest years for which data is available.

10.7. GOVERNMENT BUDGET APPROPRIATIONS ON R&D

(million current PPP $)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Russia	**5977.1**	**4784.6**	**6004.7**	**7169.6**	**9087.9**	**9047.1**	**13254.0**	**15356.7**	**18515.6**	**20829.0**	**26968.0**	**25848.0**	**27088.6**
OECD countries													
Australia	2297.6	2851.4	3194.8	3269.9	3684.1	3299.9	3714.6	3955.3	3803.3	3926.9	4572.1	4860.2	4860.2
Austria	1231.9	1430.2	1535.2	1637.5	1640.9	1758.7	1827.3	1982.3	2041.6	2330.5	2540.7	2662.2	2662.2
Belgium	1166.3	1597.6	1710.1	1856.0	1915.2	1911.1	1987.2	2203.9	2284.4	2684.0	2663.1	2748.0	2748.0
Canada	3812.8	4574.3	5352.1	5567.2	5901.4	6185.3	6777.1	6886.8	7550.2	7884.9	8268.8	...	...
Chile	...	...	...	...	...	...	...	...	...	...	...	...	...
Czech Republic	...	...	...	852.9	956.1	990.1	1148.4	1304.5	1469.1	1436.7	1653.3	1589.6	1589.6
Denmark	793.3	1171.1	1179.2	1206.6	1204.8	1244.6	1285.4	1419.7	1630.0	1852.5	2077.1	2161.9	2161.9
Estonia	...	44.9	45.0	62.9	67.6	73.6	90.1	129.3	139.8	189.6	184.7	196.2	196.2
Finland	931.0	1302.8	1336.4	1384.2	1437.1	1574.1	1651.7	1783.9	1850.3	1976.6	2130.1	2248.2	2248.2
France	13281.4	14742.5	16148.8	17125.4	16845.7	16921.6	18084.5	16177.7	15807.1	19214.2	20162.8	18744.1	18744.1
Germany	16089.4	16811.3	17221.0	17769.8	18631.4	18897.7	19865.0	21028.9	22525.9	24261.3	25894.2	28422.4	28422.4
Greece	401.1	619.8	620.4	616.5	662.4	797.4	889.5	980.3	919.0	985.3	...	...	...
Hungary	...	...	...	...	...	...	708.7	675.8	748.1	881.2	942.7	739.1	739.1
Iceland	45.0	76.2	82.0	90.3	96.5	87.3	91.0	93.1	95.5	111.2	123.6	...	...
Ireland	204.3	331.2	380.9	428.1	510.6	631.7	736.7	815.8	988.9	1008.2	1040.9	960.0	960.0
Israel	884.6	1293.5	1332.8	1278.1	1256.8	1197.5	1115.0	1132.7	1143.6	1261.0	1278.3	1300.1	1300.1
Italy	6739.5	9371.7	10456.0	...	...	...	11050.6	10919.4	12171.8	12602.6	12489.4	11859.2	11859.2
Japan	14285.8	21223.1	23206.9	24652.7	25751.7	26845.5	27617.8	28658.8	29184.6	30559.9	30938.6	32201.5	32201.5
Luxembourg	...	30.1	39.0	47.3	60.4	71.6	83.7	121.5	149.0	194.8	215.7	251.3	251.3
Mexico	1261.7	2117.1	2144.4	2223.6	2706.0	2368.8	2599.5	2675.7	...	...	...	...	...
Netherlands	2834.4	3793.0	3942.9	4232.0	4235.6	4435.0	4529.7	4997.6	5197.8	5562.0	5889.5	6087.0	6087.0
New Zealand	308.9	...	453.4	...	479.1	...	...	572.3	629.9	684.9	717.4	743.7	743.7
Norway	824.2	1057.4	1150.6	1272.7	1347.4	1462.7	1554.6	1806.2	1980.9	2113.8	2296.7	2394.3	2394.3

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Poland	1142.5	1539.8	1619.0	...	...	1553.6	1547.5	1812.3	2012.5	2079.3	2444.3	...	...
Portugal	561.0	1019.7	1101.9	1272.1	1199.3	1278.4	1581.1	1686.0	1928.8	2283.9	2441.1	2765.9	2765.9
Republic of Korea	...	5024.7	5918.6	6701.1	7021.2	7662.7	8539.3	9329.1	10589.5	11895.0	13219.7	14501.6	14501.6
Slovakia	171.9	213.0	218.0	219.8	217.2	236.6	244.1	267.8	238.6	348.2	370.9	373.6	373.6
Slovenia	...	174.0	185.6	207.9	222.8	262.1	272.7	285.2	286.5	298.9	384.5	339.4	339.4
Spain	3015.0	5175.5	6097.9	7323.4	7624.4	5931.3	6479.5	9160.0	10969.6	11684.6	12258.7	11610.0	11610.0
Sweden	2090.1	1731.4	2046.2	2278.6	2489.7	2531.3	2535.0	2727.2	2781.6	2917.3	3159.7	3267.3	3267.3
Switzerland	...	1458.6	...	1671.3	...	1927.1	...	2116.6	...	2686.2	...	3059.3	3059.3
Turkey	...	...	...	...	...	...	...	...	...	...	...	...	...
United Kingdom	8810.6	10360.7	10805.4	12872.8	13123.6	13165.2	13228.0	14081.3	14247.9	14400.7	14867.4	14081.3	14081.3
USA	68791.0	83612.5	91505.1	103056.7	114866.1	126270.5	131259.0	136019.0	141890.3	144391.0	164292.0	148448.0	148448.0
Other countries													
Argentina	...	833.1	757.2	664.7	762.3	840.6	1035.0	1225.3	1527.6	1753.0	2192.4	2351.0	2351.0
China	...	...	...	...	...	...	...	...	...	...	...	...	...
Romania	555.7	178.0	226.3	217.1	266.0	322.2	441.7	796.1	1019.8	1283.5	959.7	902.0	902.0
Singapore	...	...	...	...	...	...	...	...	...	...	...	...	...
Taiwan	...	2833.1	3476.5	3691.7	4096.4	4504.3	4639.9	5637.8	5641.9	6015.8	6385.9	6737.9	6737.9
South Africa	...	...	...	...	...	...	...	...	...	...	...	...	...

10.8. R&D PERSONNEL: 2011*

(person-year; in full-time equivalent)

	R&D personnel	Researchers
Russia	**839183**	**447579**
CIS countries		
Armenia	6926	5542
Azerbaijan	17401	11041
Belarus	33516	20571
Kazakhstan	15793	10095
Kyrgyzstan	3533	2290
Republic of Moldova	4573	2861
Tajikistan	2791	1722
Turkmenistan	...	...
Ukraine	118747	61858
Uzbekistan	...	...
OECD countries		
Australia	137138	92379
Austria	58519	35942
Belgium	59851	38168
Canada	234660	146324
Chile	12571	5959
Czech Republic	52290	29228
Denmark	53191	35326
Estonia	5277	4077

* Or the nearest years for which data is available. For CIS countries (except Russia, the Republic of Moldova and Ukraine), Iran and Indonesia the calculation is based on head-count data. The data for Indonesia refers to different years.

(continued)

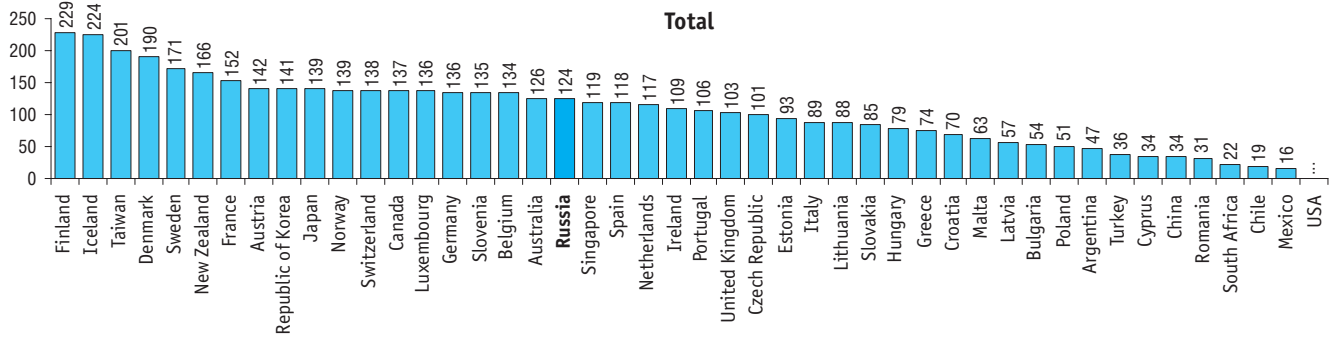
	R&D personnel	Researchers
Finland	55897	41425
France	390374	234201
Germany	549042	327198
Greece	35531	21013
Hungary	31480	21342
Iceland	3753	2861
Ireland	20253	14463
Israel	…	…
Italy	218837	105846
Japan	878018	656032
Luxembourg	4889	2536
Mexico	70293	37930
Netherlands	100544	53703
New Zealand	28600	21400
Norway	36123	26453
Poland	81842	64511
Portugal	52378	45916
Republic of Korea	335228	264118
Slovakia	18188	15183
Slovenia	12940	7703
Spain	222022	134653
Sweden	77418	49312
Switzerland	62066	25142
Turkey	81792	64341
United Kingdom	319487	235373
USA	…	1412639

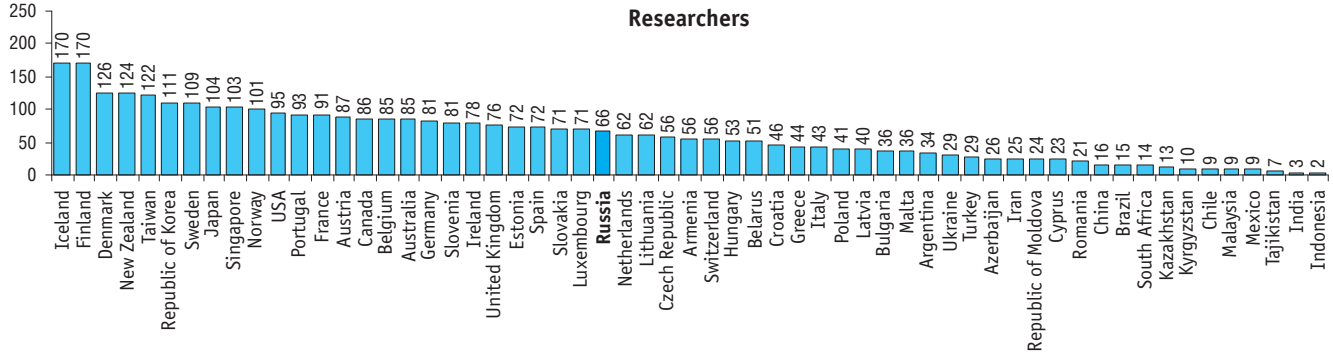
(continued)

	R&D personnel	Researchers
EU countries which are not OECD members		
Bulgaria	16509	10932
Cyprus	1300	895
Latvia	5409	3807
Lithuania	11822	8387
Malta	1039	588
Romania	26171	19780
Other countries		
Argentina	65761	47580
Brazil	265246	137187
China	2553829	1210841
Croatia	10859	7104
India	391149	154827
Indonesia	55118	41143
Iran	141871	107810
Malaysia	13416	9694.3
Singapore	37013	32031
South Africa	30802	47580
Taiwan	210678	127768

10.9. R&D PERSONNEL PER 10 000 EMPLOYMENT: 2011*

(head-count)





* Or the nearest years for which data is available. For CIS countries (except Russia, the Republic of Moldova and Ukraine) the calculation is based on head-count data; for other countries it is based on the full-time equivalent.

10.10. PERCENTAGE DISTRIBUTION OF RESEARCHERS BY SECTOR OF PERFORMANCE: 2011*

	Government sector	Business enterprise sector	Higher education sector
Russia	**31.6**	**48.0**	**20.1**
CIS countries			
Armenia	67.7	–	32.3
Azerbaijan	75.5	14.2	10.3
Belarus	27.5	52.7	4.7
Kazakhstan	34.0	8.3	35.8
Kyrgyzstan	54.8	13.4	31.7
Republic of Moldova	71.1	10.7	18.2
Tajikistan	67.8	–	32.2
Turkmenistan	…	…	…
Ukraine	51.8	37.3	10.8
Uzbekistan	…	…	…
OECD countries			
Australia	9.0	30.0	57.7
Austria	4.5	62.3	32.5
Belgium	7.9	46.1	45.2
Canada	6.3	59.4	34.1
Chile	9.4	29.5	54.3
Czech Republic	21.4	43.3	34.6
Denmark	3.2	60.8	35.5
Estonia	13.4	31.4	53.4

* Or the nearest years for which data is available. For CIS countries (except Russia, the Republic of Moldova and Ukraine) and Indonesia the calculation is based on head-count data; for other countries it is based on the full-time equivalent.

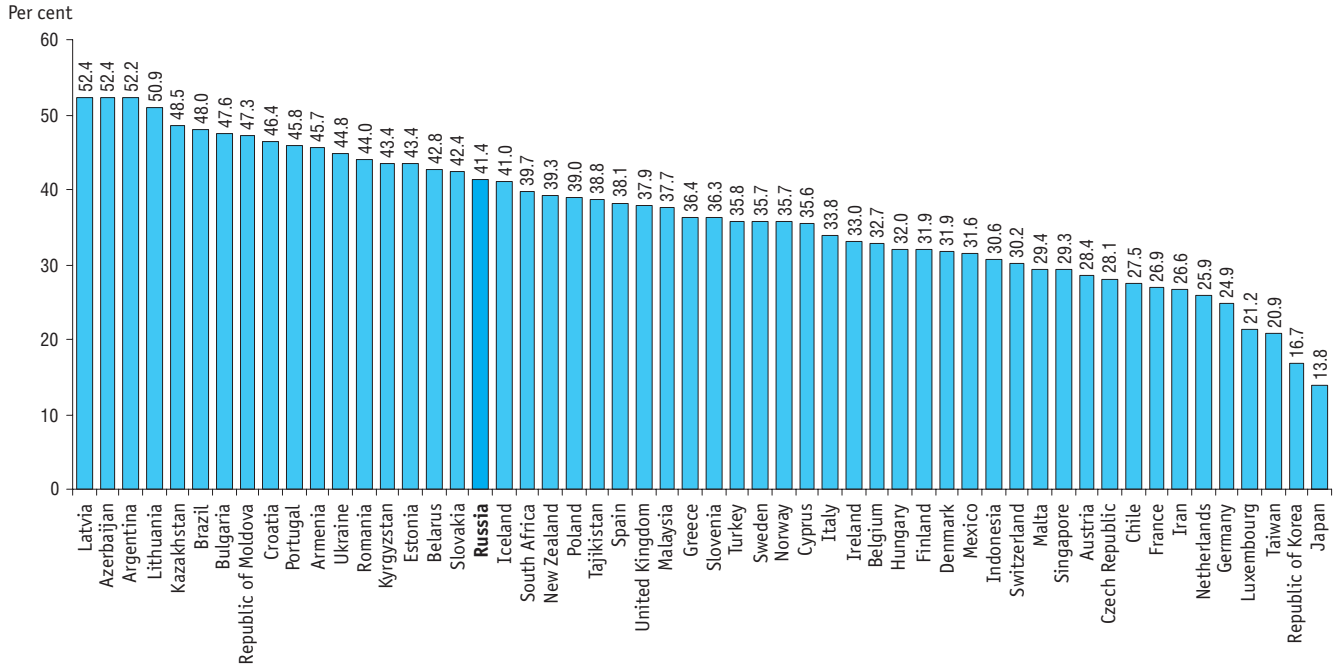
(continued)

	Government sector	Business enterprise sector	Higher education sector
Finland	11.0	55.3	32.7
France	12.3	57.0	29.3
Germany	15.8	56.8	27.4
Greece	10.5	29.9	58.9
Hungary	23.6	48.1	28.3
Iceland	19.1	39.4	39.3
Ireland	3.3	54.5	42.2
Israel	...	...	...
Italy	15.8	39.4	41.1
Japan	4.9	74.8	19.1
Luxembourg	25.9	53.6	20.4
Mexico	19.3	42.5	35.8
Netherlands	13.0	49.5	37.5
New Zealand	11.2	22.9	65.9
Norway	16.9	47.3	35.8
Poland	21.0	18.2	60.7
Portugal	5.5	22.6	62.8
Republic of Korea	7.5	76.5	14.9
Slovakia	19.7	12.7	67.2
Slovenia	26.4	44.0	29.4
Spain	18.1	33.7	48.0
Sweden	3.8	61.7	34.4
Switzerland	1.9	41.1	57.0
Turkey	9.5	39.4	51.2
United Kingdom	3.5	34.2	60.6
USA	...	80.0	...

(continued)

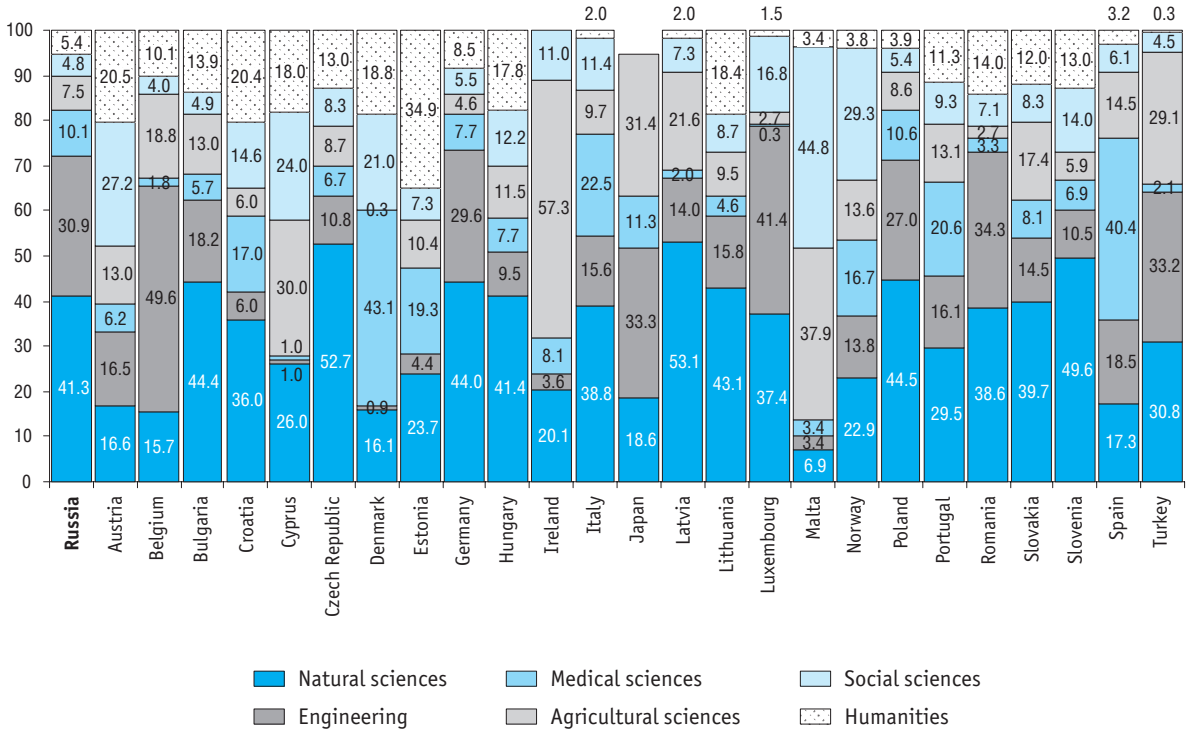
	Government sector	Business enterprise sector	Higher education sector
EU countries which are not OECD members			
Bulgaria	52.7	13.6	33.0
Cyprus	10.6	21.2	59.2
Latvia	14.9	16.0	69.1
Lithuania	17.5	14.8	67.7
Malta	4.9	57.1	38.1
Romania	28.3	29.6	41.7
Other countries			
Argentina	45.1	8.9	44.5
Brazil	5.6	26.2	67.5
China	19.1	61.1	19.8
Croatia	29.5	18.0	52.3
India	48.7	37.0	14.3
Indonesia	31.3	1.9	66.8
Iran	33.6	15.0	51.5
Malaysia	11.0	36.4	52.6
Singapore	5.5	51.5	43.0
South Africa	15.7	31.8	51.3
Taiwan	11.8	63.0	24.7

10.11. FEMALE PROPORTION IN THE NUMBER OF RESEARCHERS: 2011*



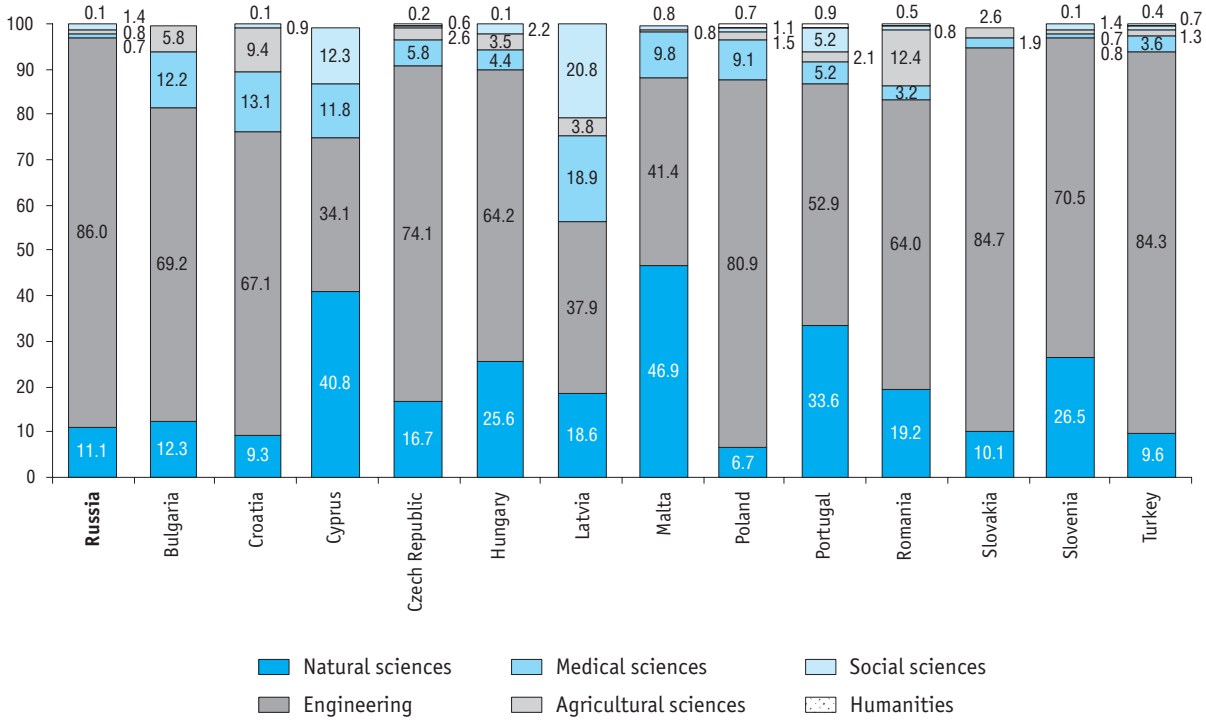
* Or the nearest years for which data is available. The calculation is based on head-count data.

10.12. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE GOVERNMENT SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY: 2011*



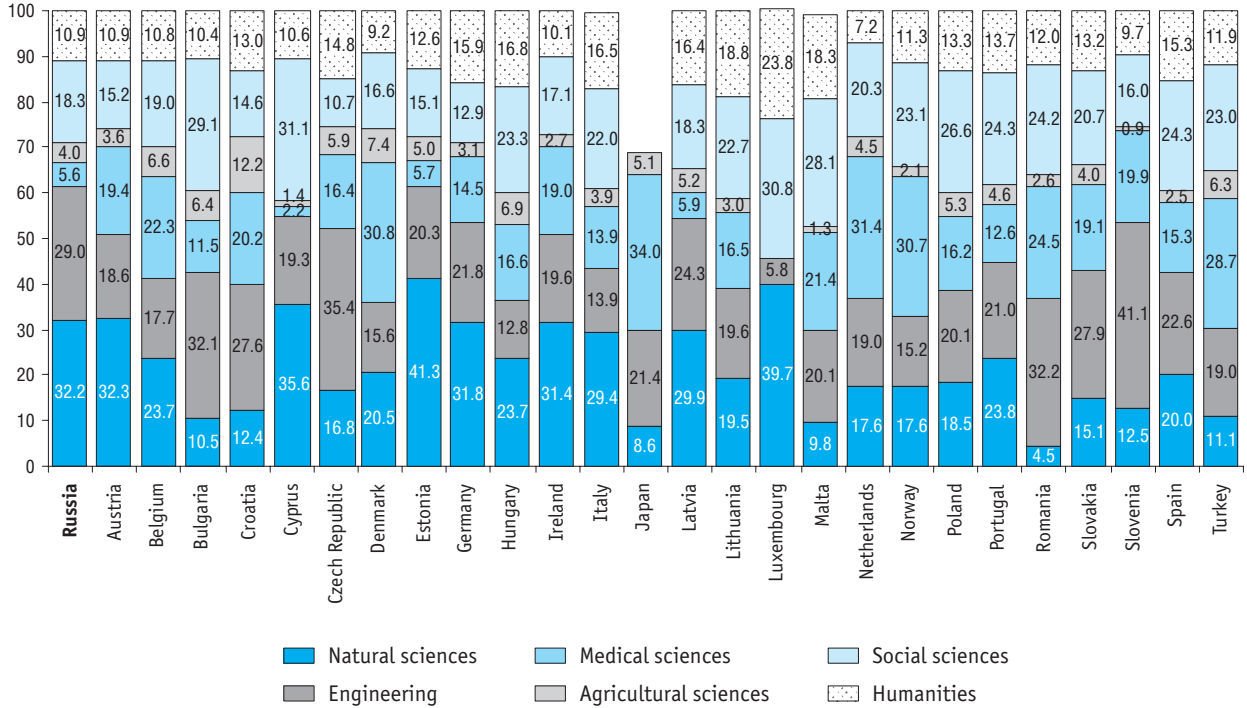
* Or the nearest years for which data is available. For Russia the calculation is based on head-count data, for other countries it is based on the full-time equivalent.

10.13. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE BUSINESS ENTERPRISE SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY: 2011*



* Or the nearest years for which data is available. For Russia the calculation is based on head-count data, for other countries it is based on the full-time equivalent.

10.14. PERCENTAGE DISTRIBUTION OF RESEARCHERS IN THE HIGHER EDUCATION SECTOR BY FIELD OF SCIENCE AND TECHNOLOGY: 2011*



* Or the nearest years for which data is available. For Russia the calculation is based on head-count data, for other countries it is based on the full-time equivalent.

10.15. PUBLICATIONS AND CITATIONS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE

	Number of publications		Number of citations	Number of citations per publication
	2011	2007–2011*	2007–2011*	
Russia	**28156**	**132101**	**315501**	**2.39**
CIS countries				
Armenia	670	2567	10184	3.97
Azerbaijan	533	1797	2939	1.64
Belarus	1072	4912	10516	2.14
Kazakhstan	286	1229	2280	1.86
Kyrgyzstan	69	228	631	2.19
Republic of Moldova	258	1080	3731	3.45
Tajikistan	56	–	–	–
Turkmenistan	12	–	–	–
Ukraine	5220	22675	48534	2.14
Uzbekistan	384	1623	4103	2.53
OECD countries				
Australia	41427	179859	1064133	5.92
Austria	11973	53483	345906	6.47
Belgium	17459	78332	547994	7.00
Canada	54527	254915	1629365	6.39
Chile	5542	21425	93267	4.35
Czech Republic	9366	41122	183195	4.45
Denmark	12668	54555	423483	7.76
Estonia	1443	5718	29243	5.11

* According to 'Essential Science Indicators' (Thomson Reuters), the data refers to the number of publications and citations received in 2007–2011 by publications issued within the same period. The term 'publication' refers to a research article.

(continued)

	Number of publications		Number of citations	Number of citations per publication
	2011	2007–2011*	2007–2011*	
Finland	10190	46964	306973	6.54
France	63337	300171	1839308	6.13
Germany	89693	417858	2766347	6.62
Greece	9809	49324	237884	4.82
Hungary	5591	26596	134789	5.07
Iceland	787	3365	30009	8.92
Ireland	8733	29232	182908	6.26
Israel	11681	56484	336078	5.95
Italy	50686	241202	1452187	6.02
Japan	73954	370568	1822080	4.92
Luxembourg	631	2136	9711	4.55
Mexico	10005	44081	159271	3.61
Netherlands	30910	141715	1078806	7.61
New Zealand	7593	32800	176799	5.39
Norway	10191	43267	255581	5.91
Poland	19967	89038	300747	3.38
Portugal	10107	40572	199826	4.93
Republic of Korea	44467	177619	675646	3.80
Slovakia	2941	13577	46906	3.45
Slovenia	3587	14985	56642	3.78
Spain	47800	204921	1106403	5.40
Sweden	20214	93620	661343	7.06
Switzerland	22885	103641	851662	8.22
Turkey	23153	97967	265928	2.71
United Kingdom	100514	426059	…	…
USA	337608	1596154	11439569	7.17

(continued)

	Number of publications		Number of citations	Number of citations per publication
	2011	2007–2011*	2007–2011*	
EU countries which are not OECD members				
Bulgaria	2084	10728	37335	3.48
Cyprus	773	2841	10438	3.67
Latvia	576	2097	6279	2.99
Lithuania	2139	8675	23438	2.70
Malta	141	547	1993	3.64
Romania	6715	26753	62520	2.34
Other countries				
Argentina	7783	33360	139379	4.18
Brazil	33936	141765	436528	3.08
China	159018	604626	2221584	3.67
Croatia	3698	14332	42731	2.98
Egypt	6512	23158	62531	2.70
Georgia	503	1843	5917	3.21
India	44765	187261	586431	3.13
Indonesia	1129	4304	18224	4.23
Iran	21482	67674	179261	2.65
Malaysia	7752	21267	51399	2.42
Pakistan	5625	17270	45743	2.65
Saudi Arabia	5576	13807	31101	2.25
Serbia	4395	15584	39604	2.54
Singapore	9407	40280	229594	5.70
South Africa	8821	33133	147716	4.46
Taiwan	26696	112433	412543	3.67
Thailand	5770	23127	93728	4.05

10.16. PUBLICATIONS AND CITATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS*

	Number of publications		Number of citations	Number of citations per publication
	2011	1996–2011	1996–2011	
Russia	**39005**	**521993**	**2811862**	**5.39**
CIS countries				
Armenia	858	7930	62640	7.90
Azerbaijan	764	6056	14884	2.46
Belarus	1552	22130	107046	4.84
Kazakhstan	454	4621	18142	3.93
Kyrgyzstan	80	834	4348	5.21
Republic of Moldova	331	3991	24381	6.11
Tajikistan	73	750	2127	2.84
Turkmenistan	30	153	1011	6.61
Ukraine	7629	97065	398915	4.11
Uzbekistan	551	6667	25786	3.87
OECD countries				
Australia	63149	551667	8180664	14.83
Austria	18694	177324	2688324	15.16
Belgium	25416	251632	4161308	16.54
Canada	80679	836836	13928114	16.64
Chile	7117	56934	592148	10.40
Czech Republic	15784	137882	1103719	8.00
Denmark	18052	173771	3444509	19.82
Estonia	2042	16218	176657	10.89

* According to 'SCImago Journal & Country Rank'. The term 'publication' refers to all types of documents (articles, reviews, reports and others).

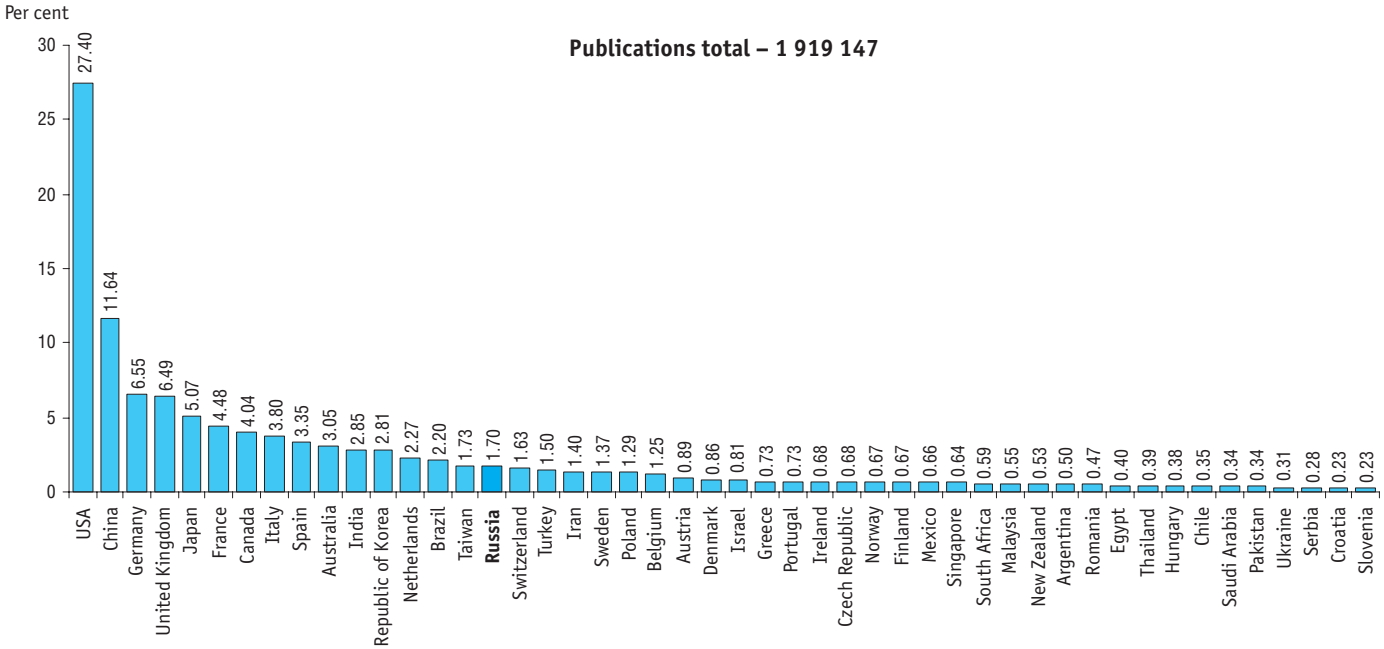
(continued)

	Number of publications		Number of citations	Number of citations per publication
	2011	1996–2011	1996–2011	
Finland	14866	165195	2771982	16.78
France	97343	1073718	16068688	14.97
Germany	137519	1490140	23229085	15.59
Greece	16407	152000	1589963	10.46
Hungary	8737	96842	1058391	10.93
Iceland	1125	8862	172975	19.52
Ireland	10822	85341	1149729	13.47
Israel	15922	194752	3283119	16.86
Italy	77838	803004	11279167	14.05
Japan	115416	1563732	18441796	11.79
Luxembourg	1080	4877	41092	8.43
Mexico	14851	140713	1174802	8.35
Netherlands	45689	457933	8928850	19.50
New Zealand	11678	107441	1504946	14.01
Norway	15121	133311	2021938	15.17
Poland	29143	297361	2149143	7.23
Portugal	15874	113411	1150280	10.14
Republic of Korea	60846	487459	3988716	8.18
Slovakia	4696	48510	342191	7.05
Slovenia	4769	43056	345352	8.02
Spain	71155	623236	7640544	12.26
Sweden	28652	321725	6111804	19.00
Switzerland	33272	329198	6873551	20.88
Turkey	32609	253876	1647043	6.49
United Kingdom	145899	1550373	27919060	18.01
USA	519573	5738593	114546415	19.96

(continued)

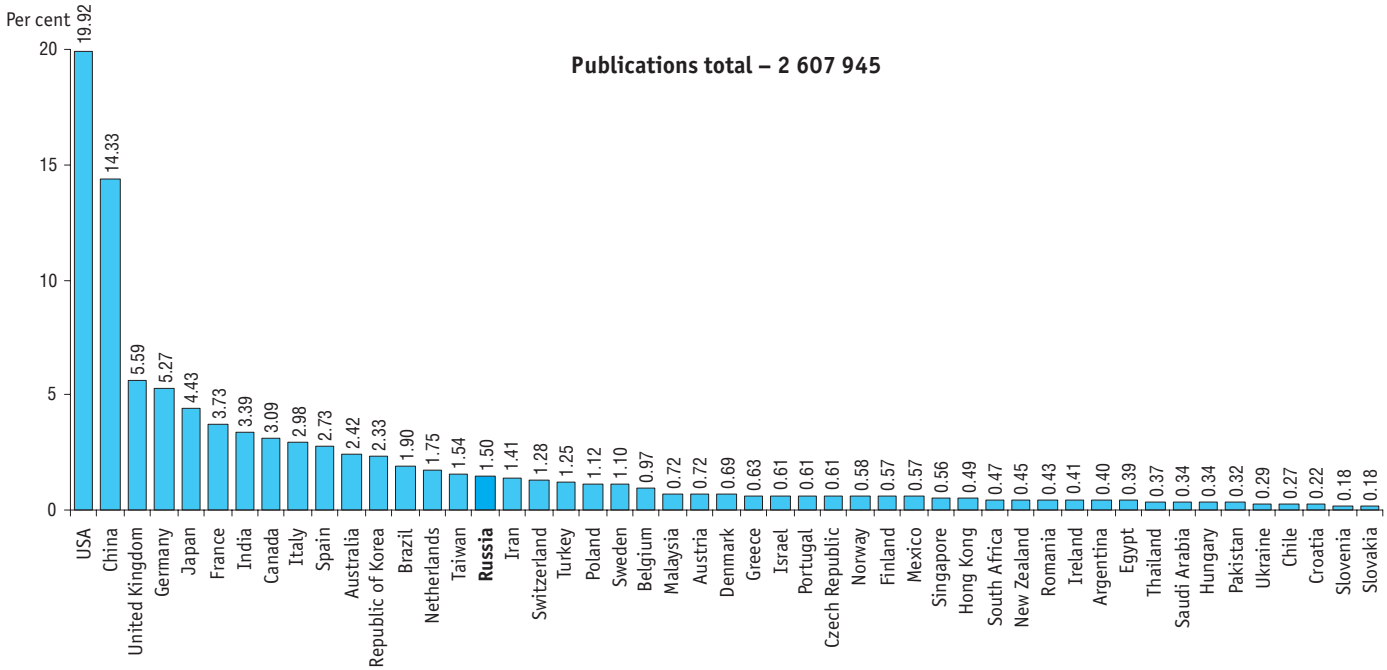
	Number of publications		Number of citations	Number of citations per publication
	2011	1996–2011	1996–2011	
EU countries which are not OECD members				
Bulgaria	3251	40059	283100	7.07
Cyprus	1367	8136	64670	7.95
Latvia	1117	8279	59502	7.19
Lithuania	2425	20781	129494	6.23
Malta	295	1910	18088	9.47
Romania	11215	75381	338601	4.49
Other countries				
Argentina	10352	101695	1027553	10.10
Brazil	49664	378540	2884793	7.62
China	373756	2226529	9288789	4.17
Croatia	5793	47854	260491	5.44
Egypt	10295	73968	438912	5.93
Georgia	730	6247	42498	6.80
India	88437	602868	3860494	6.40
Indonesia	2741	15779	125845	7.98
Iran	36803	154748	657186	4.25
Malaysia	18875	73737	281619	3.82
Pakistan	8294	45401	197718	4.35
Saudi Arabia	8869	44089	241843	5.49
Serbia	5667	20543	53270	2.59
Singapore	14511	122436	1330684	10.87
South Africa	12353	101434	1013102	9.99
Taiwan	40234	343223	2825736	8.23
Thailand	9760	67274	528969	7.86

10.17. COUNTRY SHARES IN THE TOTAL NUMBER OF PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN WEB OF SCIENCE: 2011*



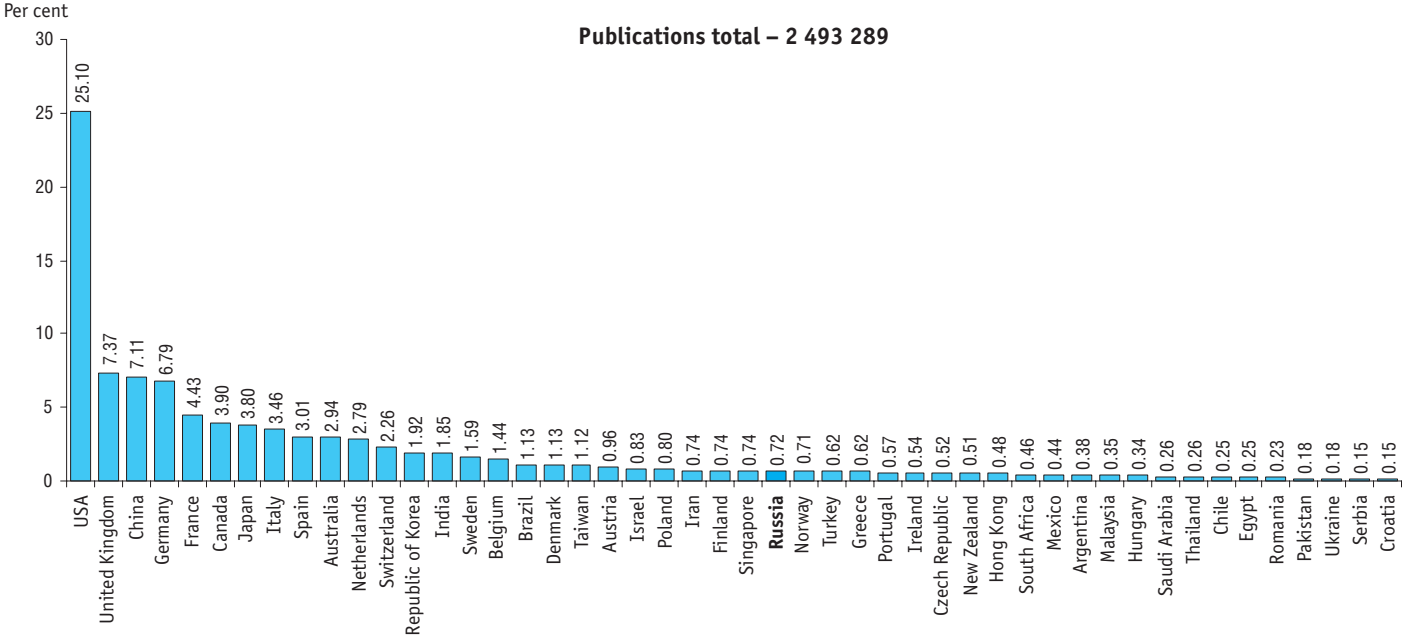
* The term 'publication' refers to all types of documents (articles, reviews, reports and others).

10.18. COUNTRY SHARES IN THE TOTAL NUMBER OF PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2011*



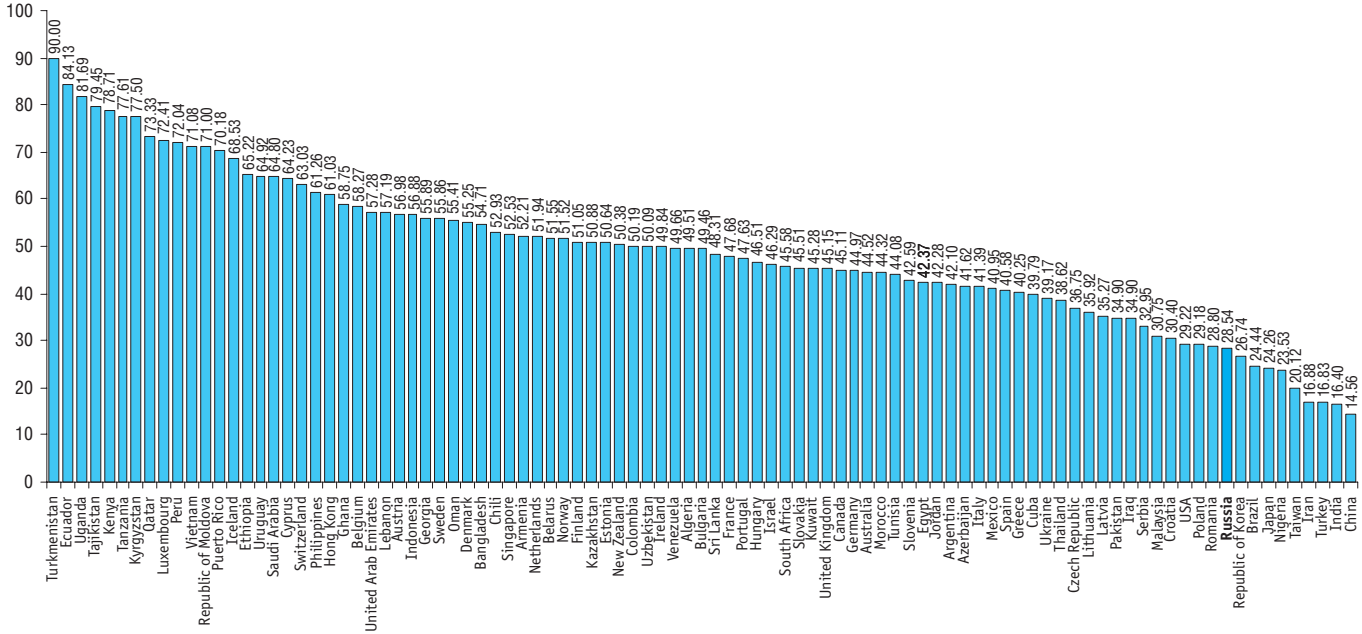
* The term 'publication' refers to all types of documents (articles, reviews, reports and others).

10.19. COUNTRY SHARES IN THE TOTAL NUMBER OF CITATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2011*



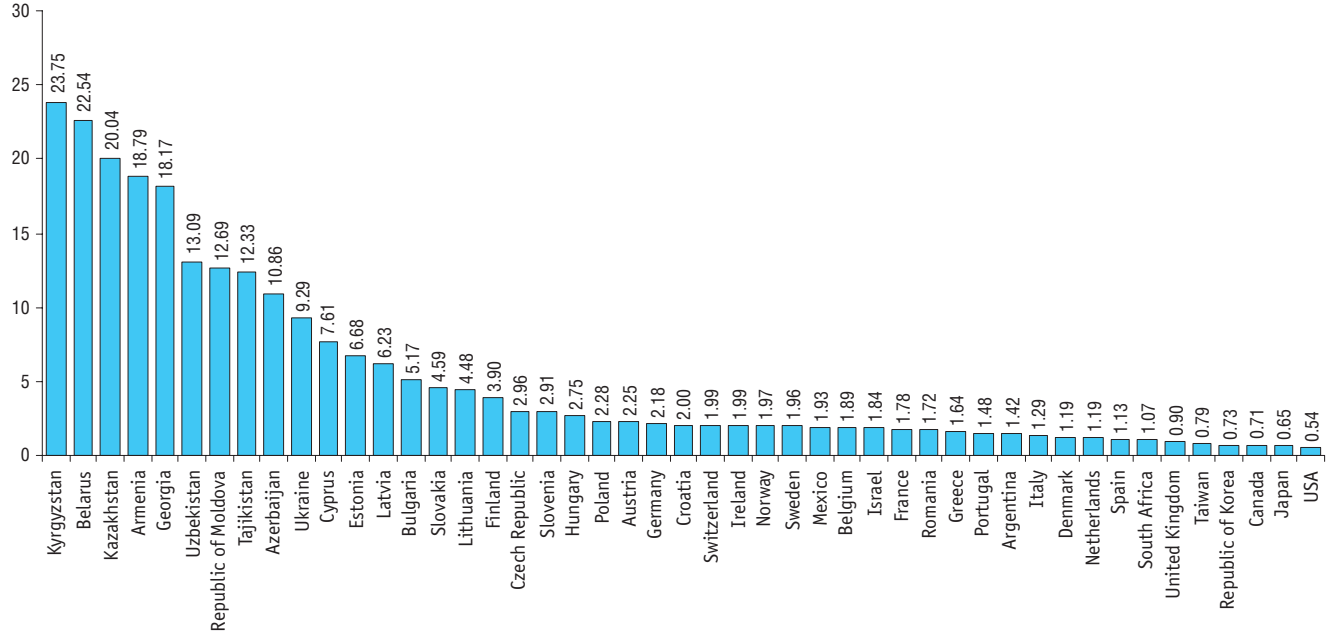
* The number of citations received in 2010 by publications issued in the same year.

10.20. PUBLICATIONS IN CO-AUTHORSHIP WITH FOREIGN RESEARCHERS AS A PERCENTAGE OF TOTAL COUNTRY PUBLICATIONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2011*



* The term 'publication' refers to all types of documents (articles, reviews, reports and others).

10.21. PUBLICATIONS IN CO-AUTHORSHIP WITH RUSSIAN RESEARCHERS AS A PERCENTAGE OF TOTAL COUNTRY PUBLICATONS IN SCIENTIFIC JOURNALS INDEXED IN SCOPUS: 2011*



*The term 'publication' refers to all types of documents (articles, reviews, reports and others).

10.22. PATENT APPLICATIONS FILED BY RESIDENTS AND NON-RESIDENTS AT NATIONAL PATENT AGENCIES

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Russia	**22202**	**28688**	**29989**	**29225**	**30651**	**30192**	**32254**	**37691**	**39439**	**41849**	**38564**	**42500**	**41414**
CIS countries													
Armenia	285	127	155	207	157	6	208	193	140	230	127	142	140
Azerbaijan	251	…	213	241	264	277	287	259	295	233	281	271	205
Belarus	1039	1198	1144	1274	1380	1265	1462	1525	1662	1730	1926	1933	1871
Kazakhstan	1373	1515	1706	…	1798	…	1626	1557	…	173	1827	1964	1732
Kyrgyzstan	148	84	98	128	180	…	…	…	158	138	…	140	…
Republic of Moldova	309	250	454	269	296	306	388	312	347	295	139	150	108
Tajikistan	65	52	84	39	31	34	36	26	…	…	12	10	5
Turkmenistan	…	…	…	…	…	…	…	…	…	…	…	…	…
Ukraine	5960	7224	8818	2754	3073	5779	5592	5890	6163	5697	4814	5312	5253
Uzbekistan	1058	968	1246	918	1102	478	444	509	522	448	412	632	556
OECD countries													
Australia	14061	22001	22735	22545	21594	22833	23857	26003	26840	26346	23681	24887	25526
Austria	2186	2301	2099	2261	2333	2514	2505	2649	2672	2627	2555	2673	2430
Belgium	1087	820	835	748	707	636	622	651	617	708	817	760	763
Canada	26592	39622	39716	39741	37228	38201	39888	42038	40131	42089	37477	35449	35111
Chile	1706	3120	2750	2538	2405	2867	3007	3215	3806	3952	1717	1076	2792
Czech Republic	3519	4939	4752	5557	3579	1252	830	836	908	854	881	982	880
Denmark	1484	1870	1945	1984	1925	2015	1823	1691	1857	1829	1649	1768	1771
Estonia	79	804	717	719	602	124	38	45	63	72	96	97	77
Finland	3791	2903	2660	2369	2187	2 220	2059	2018	2015	1946	1933	1833	1774
France	15896	17353	17104	16908	16850	17290	17275	17249	17109	16419	15693	16580	16754
Germany	46158	62142	60475	58187	58481	59234	60222	60585	60992	62417	59583	59245	59444
Greece	312	340	434	412	420	407	482	562	595	658	720	744	…

(continued)

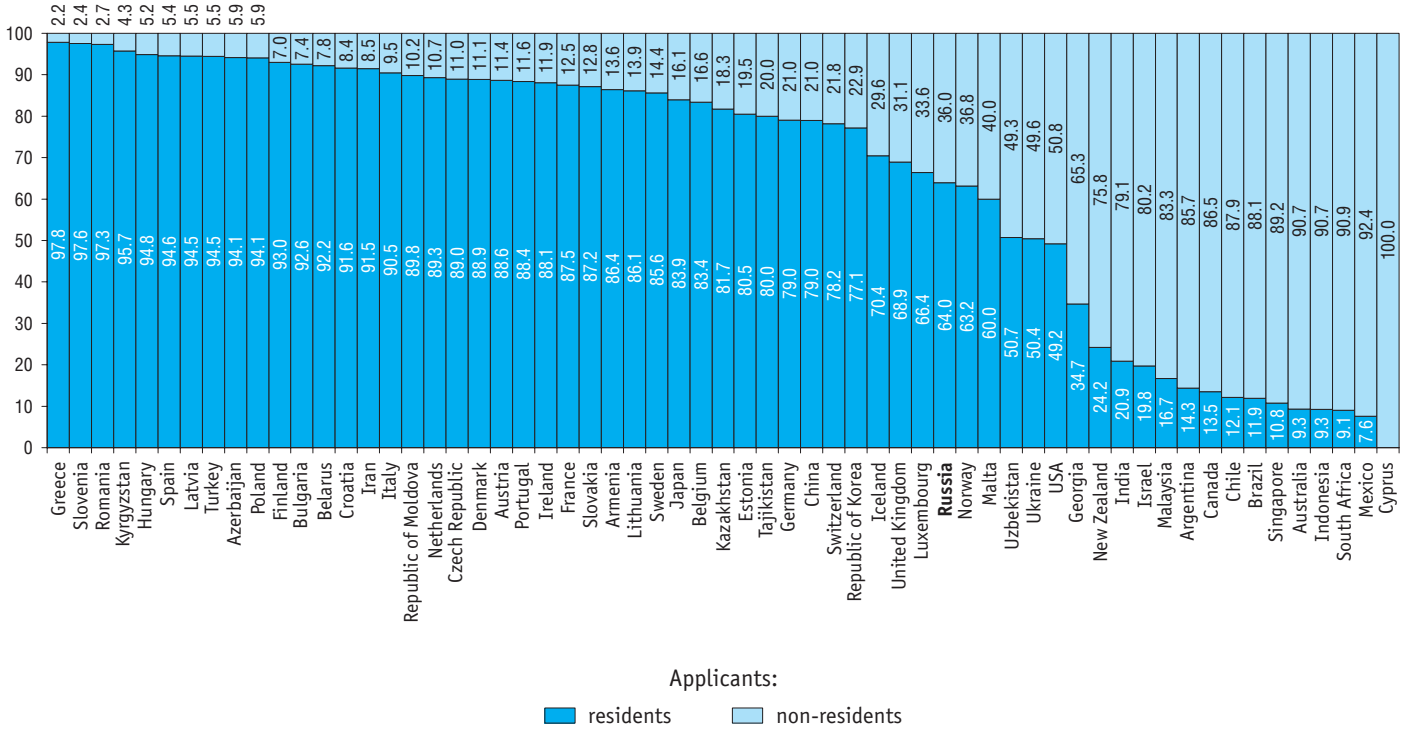
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Hungary	2889	4937	5448	5906	4810	2657	1202	924	791	772	787	696	698
Iceland	68	876	762	450	805	529	592	371	114	81	86	76	71
Ireland	990	1080	1169	982	939	845	864	935	925	1007	961	792	561
Israel	4425	6802	9875	6308	5898	6414	5124	7496	8009	7742	6774	7306	6886
Italy	…	9273	9487	9500	9401	9247	9331	10903	10125	9449	9717	9723	9721
Japan	368831	419543	440248	421805	413093	423081	427078	408674	396291	391002	348596	344598	342610
Luxembourg	104	176	121	83	24	41	88	52	40	71	84	100	128
Mexico	5234	13061	13565	13062	12207	13198	14435	15505	16599	16581	14281	14576	14055
Netherlands	2692	2994	2653	2603	2861	2743	2850	2716	2446	2732	2854	2767	2895
New Zealand	4719	7048	7275	6948	6873	6531	7005	7365	7844	5724	6358	6636	6209
Norway	5408	6700	6431	6287	5861	5490	5986	6076	6656	5430	3604	1813	1776
Poland	3860	7303	6530	6605	6241	7740	6583	2812	2753	2778	3140	3430	4123
Portugal	201	146	163	179	165	187	205	220	281	405	617	545	646
Republic of Korea	78499	102010	104612	106136	118651	140115	160921	166189	172469	170632	163523	170101	178924
Slovakia	1669	2040	1942	1858	1647	453	250	283	345	242	239	282	257
Slovenia	430	431	408	401	370	384	373	299	346	307	385	453	…
Spain	2600	3194	2995	3134	3180	3184	3353	3427	3532	3884	3803	3779	3626
Sweden	4865	5068	4500	3955	3728	3230	2960	2859	2925	2855	2649	2549	2341
Switzerland	3720	2551	2453	2293	2227	2176	2098	2102	2034	2033	2078	2155	2043
Turkey	1690	3433	3212	1838	837	917	1146	1232	2021	2397	2732	3357	4113
United Kingdom	27521	32747	32081	31531	31624	29954	27988	25745	24999	23379	22465	21929	22259
USA	228142	295895	326471	334445	342441	356943	390733	425966	456154	456321	456106	490226	503582

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU countries which are not OECD members													
Bulgaria	731	940	1068	1024	958	396	313	291	239	271	266	260	283
Cyprus	…	70	48	69	97	94	64	34	19	21	12	8	8
Latvia	300	179	180	214	115	151	169	151	147	215	243	185	183
Lithuania	133	127	123	131	113	114	115	99	82	105	107	114	108
Malta	24	116	133	202	…	471	…	805	39	48	29	19	15
Romania	2232	1290	1405	1841	1174	1137	984	876	886	1031	1091	1418	1463
Other countries													
Argentina	4264	6636	5779	4861	4557	4602	5269	5617	5743	5582	4916	4717	…
Brazil	7448	17376	17204	16022	17704	19272	20005	24074	21825	22917	21944	22686	…
India	707	456	503	446	403	458	461	535	162	247	468	359	398
Indonesia	6566	8538	10592	11465	12613	17466	24382	28928	35218	36812	34287	39762	42291
Iran	2874	3890	3926	3843	3300	3668	4304	4612	…	…	4540	5638	5838
China	407	616	993	1195	1642	2782	4494	6527	…	…	…	…	…
Malaysia	18699	51906	63450	80232	105317	130384	173327	210501	245161	289838	314604	391177	526412
Singapore	4052	6227	5934	4937	5062	5442	6286	4800	2372	5303	5737	6383	6452
Taiwan	2557	8236	8656	8199	7874	8585	8605	9163	9951	9692	8736	9773	9794
Croatia	600	875	961	1031	1086	1224	1012	436	437	401	318	278	251
South Africa	6365	3295	6393	6600	6225	6789	7004	7605	8317	7941	6735	6383	7245

* Till 2009, August 18, Georgia was a member of CIS.

10.23. PERCENTAGE DISTRIBUTION OF PATENT APPLICATIONS BY APPLICANT AND COUNTRY: 2011*



* Or the nearest years for which data is available.

10.24. PATENT APPLICATIONS FILED AT THE EUROPEAN PATENT OFFICE*

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 economically active population			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Russia	**253**	**245**	**226**	**211**	**1.8**	**1.7**	**1.6**	**1.5**	**3.4**	**3.2**	**3.0**	**2.8**
OECD countries												
Australia	900	882	810	758	42.5	41.0	36.5	33.6	81.3	78.0	69.5	63.6
Austria	1677	1589	1614	1577	202.4	191.0	193.1	188.3	398.0	373.7	376.8	368.1
Belgium	1525	1450	1436	1415	144.0	135.9	133.5	130.5	322.1	303.4	299.1	289.0
Canada	2225	2051	1928	1797	67.5	61.5	57.2	52.7	123.6	112.0	104.6	97.5
Czech Republic	182	207	239	268	17.7	19.9	22.9	25.5	35.0	39.5	45.3	50.9
Denmark	1248	1251	1279	1338	229.1	228.5	232.1	241.7	428.2	423.5	434.0	457.5
Estonia	28	34	44	51	21.0	25.6	32.5	38.1	41.1	49.3	63.1	74.3
Finland	1238	1233	1206	1165	234.6	232.5	226.4	217.7	462.8	456.0	450.2	436.0
France	8517	8578	8655	8741	133.8	134.0	134.5	135.1	304.8	305.0	304.7	306.3
Germany	23907	22655	22253	21724	290.4	275.6	271.4	265.6	574.8	543.6	533.7	521.2
Greece	104	90	83	76	9.3	8.0	7.4	6.7	21.2	18.3	16.7	15.1
Hungary	186	178	193	203	18.5	17.8	19.2	20.2	43.8	42.4	45.9	47.6
Iceland	20	22	20	17	63.7	70.9	61.2	52.5	109.1	122.6	109.0	92.9
Ireland	314	321	336	354	72.9	72.9	75.6	79.1	141.8	143.1	153.8	165.3
Israel	1186	1185	1115	1062	171.0	168.0	149.0	139.3	409.7	400.7	364.2	338.6
Italy	4835	4648	4567	4424	81.8	78.0	76.1	73.3	195.5	185.2	182.9	177.1
Japan	20716	18777	17822	16653	162.1	147.1	139.8	130.0	310.6	282.4	269.3	252.7
Luxembourg	71	92	89	83	148.5	189.3	181.2	165.9	334.2	430.1	390.7	360.1
Mexico	74	68	62	57	0.7	0.6	0.6	0.5	1.7	1.5	1.4	1.2

* By priority year at the national level.

(continued)

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 economically active population			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Netherlands	3241	3361	3322	3206	198.1	204.9	201.5	193.4	369.6	379.3	372.3	366.0
New Zealand	168	158	156	149	39.4	36.8	36.0	34.0	74.9	69.7	67.4	63.6
Norway	464	441	425	407	99.2	93.0	88.5	83.8	185.9	170.8	164.5	157.0
Poland	200	229	264	305	5.2	6.0	6.9	8.0	11.8	13.5	15.3	17.3
Portugal	123	112	108	108	11.6	10.6	10.2	10.2	21.7	19.8	19.2	19.2
Republic of Korea	4507	3876	3463	2917	93.0	79.7	71.0	59.7	186.1	160.1	142.0	117.9
Slovakia	37	34	34	33	6.8	6.2	6.4	6.0	13.9	12.5	12.8	12.1
Slovenia	119	140	150	167	59.3	69.6	74.0	81.7	115.1	134.3	144.3	160.6
Spain	1371	1408	1426	1454	30.8	31.1	31.1	31.6	61.8	61.6	61.9	63.0
Sweden	2740	2696	2796	2865	300.6	293.6	302.0	306.7	566.3	550.4	569.6	577.4
Switzerland	3195	3054	3009	2952	425.5	402.1	390.6	379.1	694.9	651.8	632.0	617.2
Turkey	234	258	289	323	3.4	3.7	4.0	4.5	10.3	11.0	11.9	12.8
United Kingdom	5354	5119	4964	4745	88.1	83.7	80.6	76.5	174.2	164.5	158.7	151.2
USA	30342	29125	26782	24641	100.6	95.6	87.1	79.5	197.2	187.2	172.2	158.6
EU countries which are not OECD members												
Bulgaria	12	18	16	12	1.6	2.3	2.1	1.6	3.5	5.0	4.6	3.6
Cyprus	9	11	9	10	12.0	14.3	11.8	13.0	23.7	28.3	23.4	25.4
Latvia	16	23	24	...	7.2	10.0	10.7	...	13.7	18.7	20.3	...
Lithuania	10	16	19	22	2.9	4.8	5.6	6.5	6.1	10.0	11.4	13.2
Malta	7	6	6	...	16.8	13.4	13.5	...	40.9	32.3	32.2	...
Romania	33	33	35	40	1.5	1.6	1.6	1.9	3.3	3.4	3.5	4.0

(continued)

	Number of applications				Number of applications per 1 000 000 population				Number of applications per 1 000 000 economically active population			
	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
Other countries												
Brazil	260	278	303	329	1.4	1.5	1.6	1.7	2.7	2.8	3.0	3.2
China	2304	2623	2950	3325	1.7	2.0	2.2	2.5	3.0	3.3	3.8	4.2
Croatia	28	29	27	25	6.2	6.5	6.2	5.7	13.5	14.9	14.2	12.8
India	602	674	702	754	0.5	0.6	0.6	0.6	1.3	1.4	1.5	1.6
Singapore	251	267	271	274	55.9	57.9	57.2	56.6	85.3	90.8	89.4	87.4
South Africa	135	138	140	134	2.7	2.8	2.8	2.7	7.7	7.3	7.5	7.4
Taiwan	1073	1068	1174	1279	46.8	46.3	50.8	55.2	100.2	98.4	107.5	115.5

10.25. TRIADIC PATENT FAMILIES*

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Russia	**63**	**73**	**53**	**51**	**53**	**50**	**60**	**70**	**68**	**64**	**65**	**73**
					OECD countries							
Australia	236	373	276	350	342	367	342	332	318	304	287	284
Austria	223	275	257	322	339	384	429	428	411	389	406	407
Belgium	376	327	314	343	326	414	379	407	427	403	391	414
Canada	390	526	497	594	577	653	668	661	678	611	635	638
Chile	2	2	5	5	3	5	5	6	5	5	7	9
Czech Republic	3	9	12	14	15	15	15	16	21	22	21	20
Denmark	189	223	180	231	246	296	311	304	312	308	297	303
Estonia	0	1	2	1	3	1	2	5	5	6	8	8
Finland	319	350	303	275	301	339	344	367	364	349	346	353
France	1976	2140	1960	2217	2268	2412	2402	2431	2477	2476	2431	2447
Germany	4919	5804	5653	5502	5446	5635	5779	5960	5942	5741	5625	5685
Greece	2	6	7	8	13	9	15	14	15	12	12	9
Hungary	25	29	31	27	41	44	40	44	47	46	43	44
Iceland	6	11	3	9	4	2	4	4	4	4	5	4
Ireland	31	31	47	52	66	70	79	74	79	80	78	76
Israel	161	321	288	268	295	350	420	420	385	371	341	335
Italy	622	638	647	712	710	756	745	756	745	732	713	707
Japan	9598	14749	14050	14294	15016	15155	14859	15048	14543	13106	13070	15067
Luxembourg	14	20	26	10	20	23	18	22	17	21	17	17
Mexico	11	9	12	10	15	15	14	19	17	16	13	12

* Patent applications filed simultaneously at the European Patent Office, the US Patent & Trademark Office, and the Japan Patent Office.

(continued)

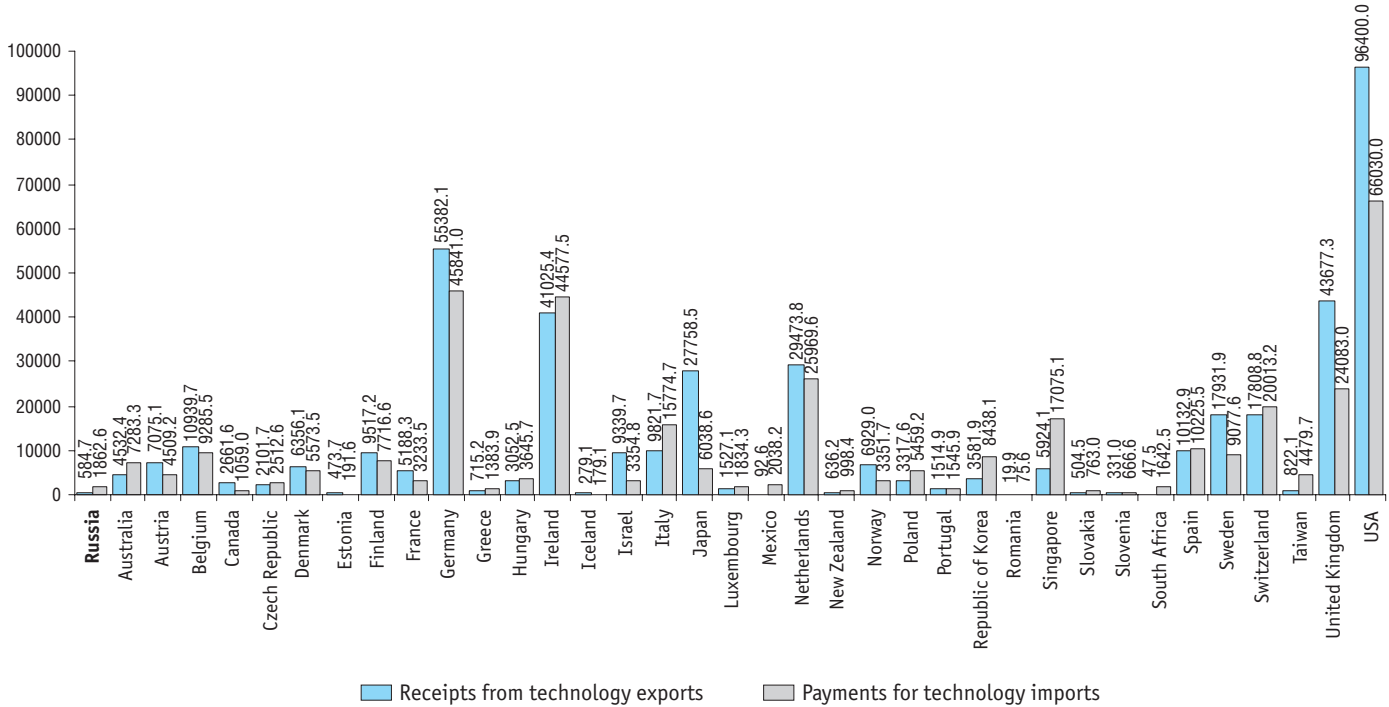
	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Netherlands	771	1022	1061	967	939	945	902	1010	952	939	890	828
New Zealand	21	47	33	55	57	63	50	60	55	51	49	49
Norway	87	105	78	108	98	107	110	120	119	112	121	118
Poland	5	9	12	11	10	17	13	14	17	20	23	27
Portugal	3	3	6	6	7	6	12	17	32	30	27	25
Republic of Korea	331	732	887	1213	1695	2000	2129	2134	2202	1780	2067	2182
Slovakia	2	2	2	3	5	1	2	3	3	3	3	4
Slovenia	7	9	6	14	13	12	18	13	14	16	15	13
Spain	82	145	153	164	156	218	220	207	221	227	233	242
Sweden	760	618	668	693	674	696	831	899	925	901	870	882
Switzerland	772	811	734	806	844	879	870	906	866	850	841	847
Turkey	2	4	10	8	9	13	13	14	21	21	26	35
United Kingdom	1588	1622	1601	1651	1666	1656	1667	1705	1685	1632	1613	1598
USA	12362	13794	13605	14471	14803	15185	15352	15857	15033	14096	13862	13837
EU countries which are not OECD members												
Bulgaria	2	1	2	2	5	2	2	2	...	...	...	...
Cyprus	...	0	5	2	1	1	2	...	...	0	...	...
Latvia	2	3	1	2	3	1	3	2	...	...	...	...
Lithuania	...	1	0	3	14	8	1	...	...	...	...	...
Malta	...	3	3	1	...	...	2	...	...	...	...	...
Romania	2	0	1	1	1	1	5	1	3	3	3	2

(continued)

	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Other countries												
Argentina	6	7	6	4	5	4	9	11	10	8	8	8
Brazil	20	29	46	32	23	27	19	16	7	5	0	...
China	21	71	100	155	219	228	312	365	467	507	709	875
Croatia	6	6	6	18	8	7	4	6	...	0	...	
India	8	48	80	129	101	96	77	58	30	28	5	...
Singapore	22	71	85	83	98	130	114	113	123	124	107	115
South Africa	25	36	17	27	32	30	35	39	32	31	27	26
Taiwan	18	40	54	103	95	113	160	191	243	226	254	294

10.26. RECEIPTS FROM TECHNOLOGY EXPORTS AND PAYMENTS FOR TECHNOLOGY IMPORTS: 2011*

(million US dollars)



* Or the nearest years for which data is available.

Postgraduate courses are the main form of training the teaching and R&D personnel in the system of postgraduate professional education that may lead to a Candidate of Sciences degree. In accordance with the current Nomenclature of Scientific Occupations accepted in the Russian Federation, postgraduate training is implemented by a field of science and technology and scientific discipline. Persons having higher (university or equivalent) education are admitted to postgraduate courses. Postgraduate training includes full-time or part-time forms. The duration of study in the former case should not exceed three years, in the latter, four years.

Federal budget appropriations on civil S&T – federal budget funds allocated for civil basic and applied research. In accordance with the new budget classification adopted in Russia since January 1, 2005, appropriations earlier included in the subsections 0601 'Basic Research' and 0602 'Development of Perspective Technologies and Priority Objectives of S&T Progress' of section 06 'Basic Research and Promotion of Science and Technology Progress' of the federal budget are attributed to basic and applied research, respectively.

The technology balance of payments registers the volume of commercial transactions related to international technology and other intangible assets transfers (exports and imports).

Bibliometric indicators are calculated on the basis of the Scopus and Web of Science databases. Publications considered include scientific articles, conference papers and reviews. A publication is associated with a country if it is listed in the affiliated address of the author or one of the co-authors.

Gross domestic expenditure on R&D — expressed in a monetary form is the actual expenditure on research and development performed by organisations during the reference year irrespective of financing sources. Its estimation is based on statistical accounting of expenditure on R&D performed by organisations during the reference year regardless of the source of funds.

Gross domestic expenditure on R&D comprises:

- **current expenditure** – salaries, social security payments, expenditure on acquisition of equipment due to prime cost of projects, other material costs (acquired raw or fabricated materials, completing devices, half-finished products, fuel, energy, production works and services, etc.), and other current costs;
- **capital expenditure** includes those on land, construction or acquisition of buildings, acquisition of equipment included in fixed assets, etc.

Gross domestic expenditure on R&D is estimated at current and constant prices calculated using the GDP deflator.

Doctoral courses are one of the training forms for highly qualified R&D and teaching personnel that may lead to a Doctor of Sciences degree. Persons having a Candidate of Sciences degree can be admitted to doctoral courses. The duration of training in doctoral courses should not exceed three years.

Grants are cash and other assets that are provided free of charge and irrevocably by persons and legal entities, including foreign citizens and foreign legal entities and international organisations which have the right to provide grants to the Russian Federation in accordance with the procedures laid down by the Government of the Russian Federation, to realise specific S&T programmes and projects, innovation projects, to conduct specific research under the conditions attached by grant-makers

(Federal law of August 26, 1996, № 127-Federal Act 'On science and state scientific and technical policy' (with changes and amendments)).

Expenditure on innovation is the actual expenditure related to implementation of various types of innovative activity performed within an enterprise (a sector, region, country). Innovation expenditure comprises current and capital expenditure. Innovation statistics covers the expenditure of technological, organisational and marketing innovations.

Innovative activity of an enterprise characterises the degree of involvement an enterprise has in innovation in general, or in specific innovative activities, within a certain period. The level of innovative activity is generally defined as the ratio of enterprises engaged in technological, organisational and marketing innovations to the total enterprises surveyed in a country, sector, region, etc. within a specific period of time.

Innovative activities are all types of economic activities related to the transformation of ideas (usually the result of research and development or other scientific achievements) into technologically new or significantly improved goods and services, introduced to the market, as well as new or significantly improved technological processes used in service production (transfer) or implemented in manufacturing modes. Innovative activities incorporate scientific, technological, organisational, financial and commercial actions that lead to innovation.

Innovative goods and services are products (goods and services) that have undergone technological modification in the last three years. By degree of novelty innovative goods and services include newly introduced (or technologically modified) and improved products.

Sources of R&D funding – primary sources of financing R&D. They are determined based on the fact of the direct transfer of funds from the institution-customer to the institution-performer. As a whole, R&D funds of the reporting institution are divided into those which can be attributed as their own and those that are received from other external institutions.

The sources of R&D funding include:

- government (including the federal budget, regional and local (municipal) budgets);
- general university funds;
- non-budget funds (Russian Foundation for Technological Development, regional development funds, sectoral and intersectoral funds for research and experimental development, regional ecological funds, etc.);
- funds from abroad;
- government sector institutions' funds;
- business enterprise sector funds;
- higher education sector funds;
- private non-profit sector funds;
- own funds of institutions.

Competitive research funding (programme financing) – funds received by the organization, which took the first place according to the decision of the competition commission made on the basis of summarizing the results of the competition of scientific, technical programs, innovation and other projects related to the implementation of scientific research and development, on the basis of the best conditions for the implementation of the competitive project presented by the organisation in comparison with other participants.

License is a legal agreement between an owner (licenser) and a grantee (licensee) on the transmission for a contingent consideration of exclusive rights to the utilization of industrial property or know-how, occurring under certain conditions and for a certain period of time. A patent license

agreement provides the right to use patents, and defines the volume of transferred rights, the validity period, the territory coverage, and also the type of payment.

Marketing innovation includes newly implemented or significantly improved marketing methods, that incorporate major changes in product package and design, innovative sales, as well as the presentation and promotion of products, and new pricing strategies. Marketing innovations are aimed at better addressing customer needs and the expansion of consumer goods and services, and developing new markets with the objective of increasing a range of sales.

Nanotechnology – a set of methods and techniques for the analysis, design, and manufacture of nanostructures, devices, and systems, including targeted control and modification of the shape, size, interaction, and integration of the nanoscale elements that constitute them (about 1–100 nm at least in one dimension), which either bring improvement or induce the emergence of additional performance and/or consumer properties of the obtained products.

Research and development (R&D) – the term comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

Enterprises engaged in technological innovation are those involved in development and introduction of technologically new or improved products or services, technologically new or improved processes or techniques of service production (transfer), and other types of innovative activities.

Organisational innovation is the implementation of a new organisational method in a firm's business practices, workplace organisation or external relations. Organisational innovations are aimed at increasing effectiveness of an enterprise performance by reducing administrative and transaction costs, improving workplace organisation (working time) and thereby increasing labour productivity, gaining access to market assets, and reducing supply costs.

Fixed (capital) assets of research and development (R&D) comprise:

- buildings and installations;
- machinery and equipment, including experimental devices, research instruments, automation means, and computers, etc.;
- transportation means;
- instruments, appliances, and other fixed assets on the balance of R&D institutions and their experimental bases, used in their main activities.

A patent for invention is a document granted by the government to an inventor that entitles priority, authorship and exclusive right to use the invention for an agreed period of operation.

Advanced manufacturing technologies – technologies and technological processes involving machines, devices, equipment and instruments based on microelectronics or computer-controlled, and used in designing, manufacturing or processing of a product.

R&D personnel is a population of persons whose creative activities are aimed at the advancement of scientific knowledge or search for new areas of its application, as well as direct services related to performance of R&D. R&D personnel is subdivided into the following categories:

- **researchers** are professionals engaged in R&D and immediately performing the creation of new knowledge, products, processes, meth-

ods, and systems, as well as in the management of these activities. Researchers usually have higher education (university or equivalent) degrees;

- **technicians** take part in R&D, performing technical functions, as a rule, under the supervision of researchers. Technicians generally have secondary professional education and (or) the necessary professional experience and knowledge;
- **supporting staff** includes staff members performing supporting functions connected with R&D: employees of planning and finance units, patent services, S&T information units, S&T libraries; workers engaged in assembling, adjusting, maintaining and repairing scientific equipment and instruments; workers of pilot (experimental) production units; laboratory assistants without higher or secondary professional education;
- **other auxiliary personnel** includes staff members performing general functions connected with the activities of an organization as a whole (employees of accounting departments, personnel departments, units for material and technical supplies, secretarial and clerical staff, etc.).

Applied research is the original investigation that acquires new knowledge in order to solve particular problem. Applied research is undertaken to determine possible uses for the findings of basic research and aids in discovering new methods or ways of achieving specific and predetermined objectives.

Development is a systematic work drawing on existing knowledge gained from research and/or practical experience, and is directed toward producing new materials, products processes or devices, and also services, systems or methods; or to improving substantially those already produced.

Sectors of R&D performance:

- **government sector** includes institutions subordinated to government ministries and agencies, responsible for state administration and satisfaction of public needs in general, as well as non-profit institutions completely or mainly financed and controlled by the government;
- **business enterprise sector** includes all organisations and enterprises whose main activity is connected with the production of goods or services for sale, including those owned by the state, as well as private non-profit institutions serving the abovementioned organisations;
- **higher education sector** includes universities and other higher education institutions irrespective of financing sources and legal status, as well as research institutes, experimental stations, and clinics directly controlled by higher education institutions, or associated with them;
- **private non-profit sector** consists of private institutions that are not aiming to gain profit (professional societies, voluntary associations, etc.) and private individual organisations.

Technological innovations are the final result of innovative activities, embodied in a technologically new or improved good or service introduced on a market, a technologically new or improved process or technique of service production (transfer) used in practice. An accomplished innovation is one that is introduced to the market or implemented into the production process.

Trade in technology with foreign countries comprises of all contracts on exports and imports of technologies and engineering services, including contracts between joint ventures and foreign enterprises registered in Russia, as well as their branches (offices) registered in Russia and their foreign mother companies.

Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view. It results in hypotheses, theories, methods, etc. Basic research can additionally provide recommendations for applied research to expose the opportunities for the practical application of the obtained results, as well as result in scientific publications, etc.

SCIENCE AND TECHNOLOGY INDICATORS IN THE RUSSIAN FEDERATION

Data Book

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For Remarks

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