

SCIENCE, INNOVATIONS AND TECHNOLOGY IN THE REPUBLIC OF BELARUS

State Committee on Science and Technology
of the Republic of Belarus

Short
Statistical
Book

2009

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2009

УДК 001 (476)

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The Short Statistical Book has been prepared at the request of the State Committee on Science and Technology of the Republic of Belarus and contains statistical data on the condition and development of scientific capacity and innovation activity in the country, which are based on the up-to-date methods used in the production of science and innovation statistics and comply with international statistical standards.

The Book is intended for scientists, teaching staff in higher education institutions, engineers, statisticians, businessmen, and diplomatic personnel.

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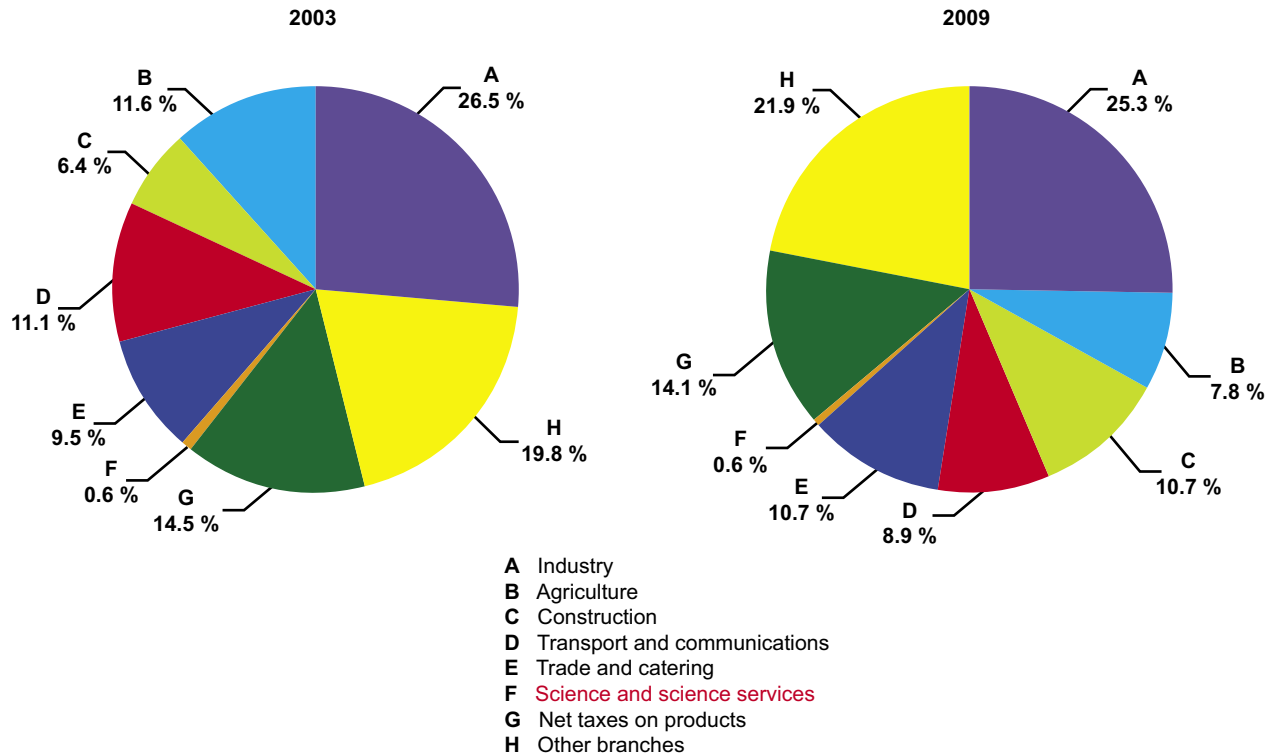
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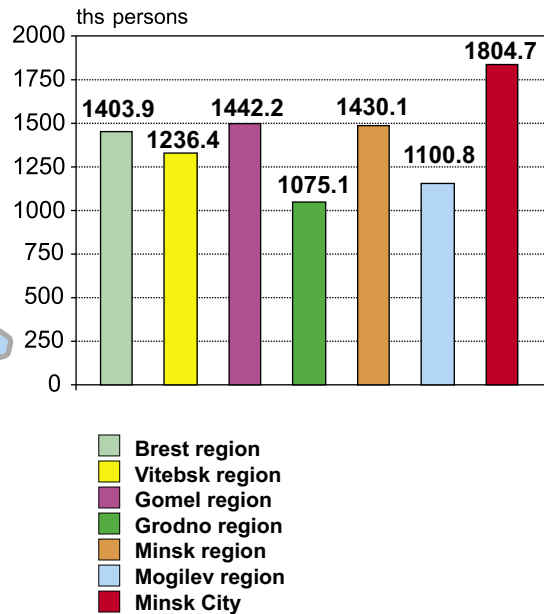
GROSS DOMESTIC PRODUCT

	2005	2006	2007	2008	2009
Gross domestic product (at current prices), milliard rubles	65 067.1	79 267	97 165	129 791	136 790
Percent of the previous year	109.4	110.0	108.6	110.2	100.2
Gross Domestic Product per capita, ths rubles	6656	8145	10 015	13 407	14 153

SECTOR-FOCUSED STRUCTURE OF GROSS DOMESTIC PRODUCT



POPULATION SIZE OF THE REPUBLIC OF BELARUS



1

**RESEARCH AND DEVELOPMENT
ORGANIZATIONS**

1.1. ORGANIZATIONS ENGAGED IN SCIENTIFIC RESEARCH AND DEVELOPMENT, BY SECTOR OF PERFORMANCE

	Number of organizations				
	2005	2006	2007	2008	2009*
Total	322	338	340	329	466**
<i>of which</i>					
government sector	122	139	131	127	80
business enterprise sector	144	142	146	140	255
higher education sector	56	57	63	62	43

* Hereinafter, including small business entities.

** Including non-profit institution sector.

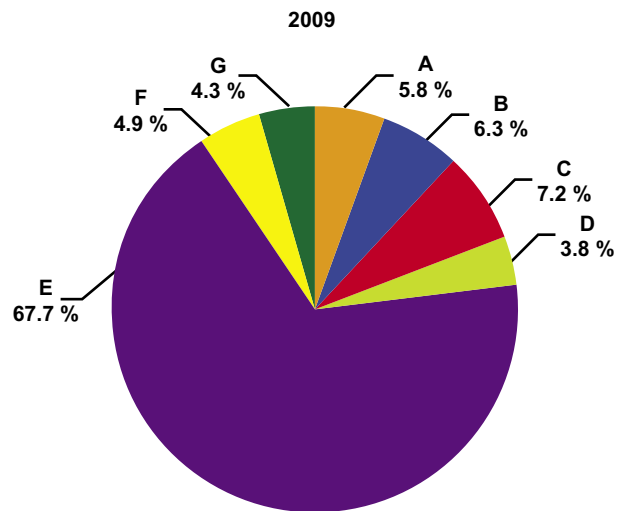
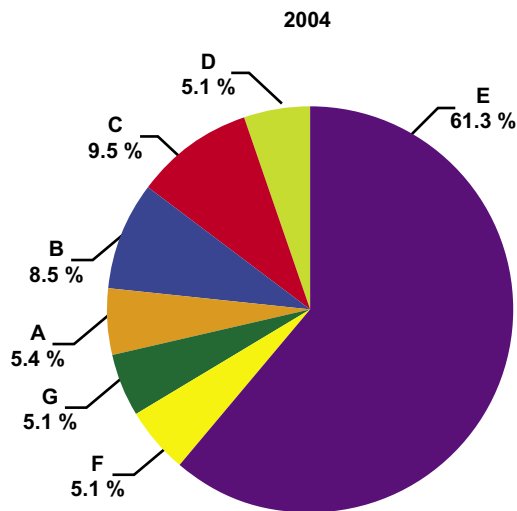
1.2. ORGANIZATIONS ENGAGED IN SCIENTIFIC RESEARCH AND DEVELOPMENT, BY OWNERSHIP TYPE

	2005	2006	2007	2008	2009*
Total	322	338	340	329	446
<i>of which</i>					
government ownership	289	304	298	291	326
private ownership	33	34	42	38	118
foreign ownership	... **	... **	... **	... **	2

* Including small business entities and allocation of the foreign ownership.

** Data is not available.

1.3. DISTRIBUTION OF ORGANIZATIONS ENGAGED IN SCIENTIFIC RESEARCH AND DEVELOPMENT, BY REGIONS AND MINSK CITY



- A Brest region
- B Vitebsk region
- C Gomel region
- D Grodno region
- E Minsk City
- F Minsk region
- G Mogilev region

2

PERSONNEL TRAINING

2.1. STATE INSTITUTIONS PROVIDING HIGHER EDUCATION, BY TYPES OWNERSHIP

(beginning of academic year)

	Number of institutions	Number of students there in, ths	Of which at departments		
			day-time	evening	correspondence
2003/2004	43	279.2	164.7	1.8	112.7
2004/2005	43	304.1	171.8	2.1	130.2
2005/2006	43	324.8	177.7	1.8	145.3
2006/2007	43	338.9	182.5	1.1	155.3
2007/2008	43	355.0	190.4	0.9	163.7
2008/2009	43	362.9	195.1	0.7	167.1
2009/2010	43	372.7	201.3	0.7	170.7

2.2. PRIVATE INSTITUTIONS PROVIDING HIGHER EDUCATION, BY TYPES OWNERSHIP

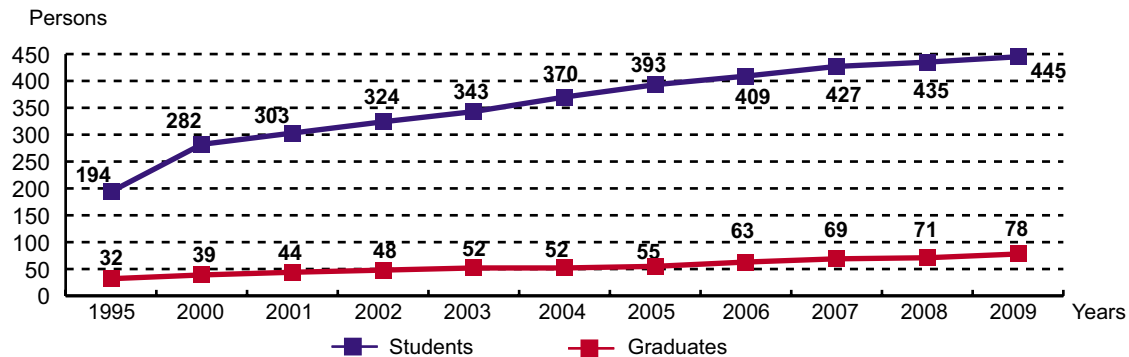
(beginning of academic year)

	Number of institutions	Number of students there in, ths	Of which at departments		
			day-time	evening	correspondence
2003/2004	16	58.6	18.8	–	39.8
2004/2005	12	58.8	16.5	0.1	42.2
2005/2006	12	58.2	14.8	0.2	43.2
2006/2007	12	58.0	14.5	0.1	43.4
2007/2008	10	58.7	14.9	0.1	43.7
2008/2009	10	57.8	14.8	–	43.0
2009/2010	10	57.6	15.1	–	42.5

2.3. INSTITUTIONS PROVIDING HIGHER EDUCATION, BY REGIONS AND MINSK CITY

	Number of institutions	Total number of students therein, ths				
	2009/10	2005/06	2006/07	2007/08	2008/09	2009/10
Republic of Belarus:	53	383.0	396.9	413.7	420.7	430.3
<i>regions</i>						
Brest	4	30.4	30.6	32.3	33.5	34.5
Vitebsk	5	33.3	34.8	36.5	37.1	38.9
Gomel	7	51.7	52.2	53.7	54.0	55.4
Grodno	3	23.3	25.4	27.5	28.6	30.0
Minsk City	30	203.7	212.5	222.1	226.4	230.7
Minsk	4	40.6	41.4	41.6	41.1	40.8
Mogilev	0	0	0	0	0	0

2.4. NUMBER OF STUDENTS AND GRADUATES FROM HIGHER EDUCATION INSTITUTIONS PER 10 000 POPULATION



2.5. NUMBER OF TEACHING STAFF IN HIGHER EDUCATION INSTITUTIONS

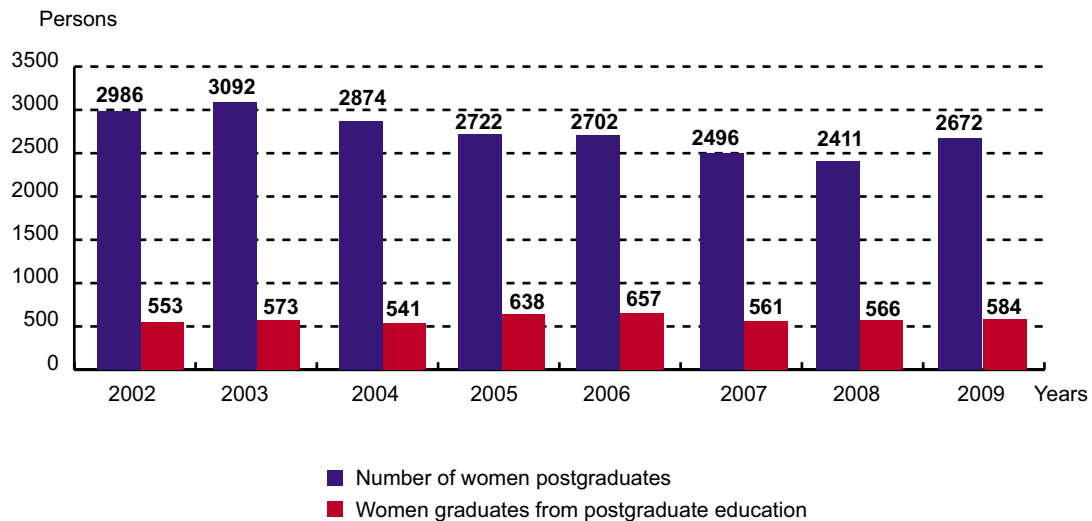
(persons)

	2003	2004	2005	2006	2007	2008	2009
Number of teaching staff in higher education institutions (excluding multiple jobholders)	22 628	22 926	23 320	23 203	23 595	23 955	24 508
<i>with academic status of</i>							
academicians, corresponding members	54	48	45	41	44	41	44
professors	1213	1213	1245	1263	1270	1278	1255
assistant professors	6088	6125	6270	6367	6583	6913	7202
senior research officers	253	257	247	235	219	154	128
<i>with academic degree of</i>							
doctors of science	1300	1308	1344	1352	1358	1366	1353
candidates of science	8235	8352	8519	8503	8604	8710	8880
out of teaching and research staff — women	11 833	12 059	12 421	12 419	12 838	13 143	13 525

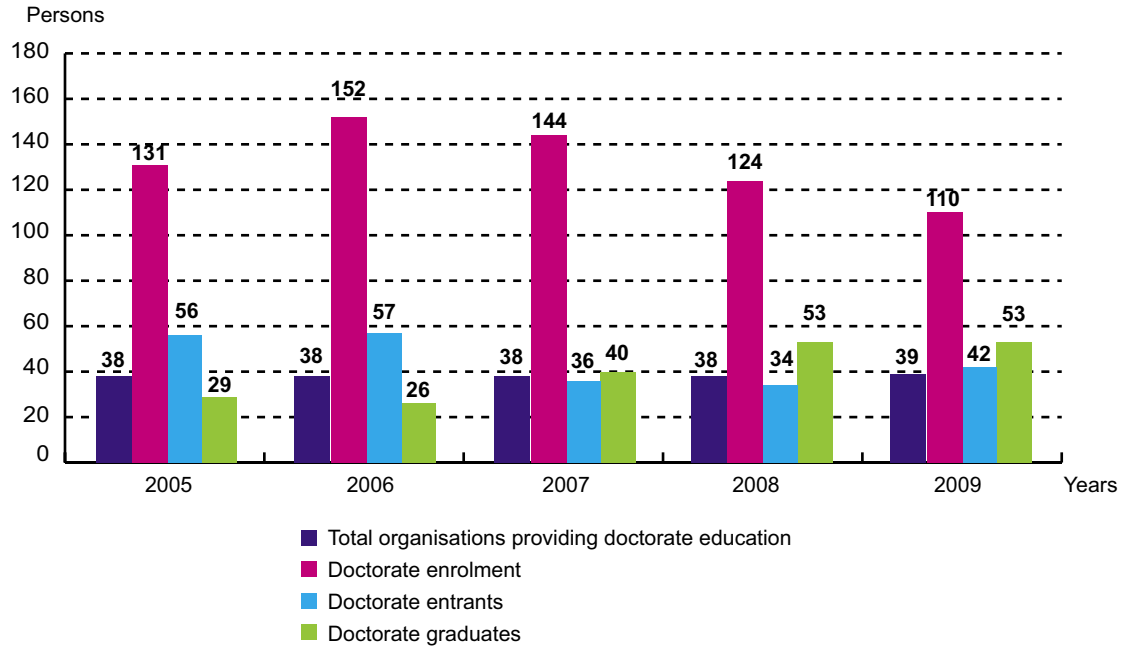
2.6. MAIN INDICATORS OF POSTGRADUATE EDUCATION

	Number of postgraduate education institutions	Number of postgraduates, persons	Postgraduate entrants, persons	Postgraduate, persons
2003	121	5964	1796	1232
2004	119	5419	1511	1333
2005	119	5042	1508	1296
2006	118	4857	1552	1242
2007	118	4498	1428	1093
2008	116	4281	1317	1083
2009	117	4571	1516	1091

2.7. ENROLMENT, GRADUATES AND POSTGRADUATES FOR WOMEN



2.8. INDICATORS OF DOCTORATE EDUCATION



**2.9. CANDIDATE'S AND DOCTOR'S DEGREES CONFERRED BY THE SUPREME CERTIFYING COMMISSION (SCC)
OF THE REPUBLIC OF BELARUS, BY YEAR AND FIELD OF SCIENCE**

	Candidate's degree					Doctor's degree				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Total	661	578	531	568	573	116	44	53	53	51
<i>of which</i>										
physics and mathematics	62	58	50	54	49	15	8	12	5	11
chemistry	27	16	24	27	19	3	1	1	–	2
biology	54	38	50	33	40	7	2	1	–	4
geology and mineralogy	1	1	3	2	1	–	–	2	–	1
engineering	96	124	81	108	102	36	13	12	13	8
agriculture	32	43	32	32	47	5	4	3	7	2
history	37	27	23	25	38	4	2	2	3	3
economics	56	39	32	45	36	8	2	3	1	2
philosophy	9	6	6	3	10	1	–	–	1	–
philology	43	33	46	40	33	4	1	–	1	1
geography	4	3	2	1	8	–	1	1	2	1
law	39	23	36	30	22	1	–	2	–	2
teacher training	29	16	15	15	20	1	1	–	1	1
medicine	110	100	85	110	95	25	6	9	14	8
pharmacology	2	1	1	2	1	–	–	1	–	–
veterinary	19	14	11	8	10	1	1	1	1	2
art-criticism	11	17	11	11	12	4	–	–	1	2
architecture	4	2	1	–	4	–	–	–	2	–
psychology	7	8	5	7	7	–	–	1	–	–
sociology	13	4	6	6	4	–	1	2	–	–
politics	2	–	4	6	10	1	1	–	1	1
culturology	2	2	–	2	3	–	–	–	–	–
other	2	3	7	1	2	–	–	–	–	–

3

**RESEARCH AND DEVELOPMENT
PERSONNEL**

3.1. SCIENTIFIC RESEARCH AND DEVELOPMENT PERSONNEL, BY CATEGORY

(persons)

	Scientific research and development personnel	Of them			
		researchers	technicians	supporting staff	other
2003	29 981	17 702	2337	5999	3943
2004	28 750	17 034	2068	5844	3804
2005	30 222	18 267	2112	5763	4080
2006	30 544	18 494	2263	5715	4072
2007	31 294	18 995	2312	5880	4107
2008	31 473	18 455	2278	6466	4274
2009	33 516	20 571	2322	10 623	–

3.2. SCIENTIFIC RESEARCH AND DEVELOPMENT PERSONNEL, BY SECTOR OF PERFORMANCE

(persons)

	Number of scientific research and development personnel		Of which with educational attainment							
			higher		of them with academic degree				secondary specialized	
	2008	2009			2008	2009	doctor of science			
Total	31 473	33 516*	22 878	24 727	726	739	3143	3231	3587	3525
<i>of them</i>										
government sector	13 875	9236	10 193	6945	582	475	2274	1726	1562	938
business enterprise sector	14 311	18 229	10 088	12 825	52	55	367	487	1812	2177
higher education sector	3287	1608	2597	1272	92	45	502	249	213	87
non-profit institutions sector	...**	4443	...**	3685	...**	164	...**	769	...**	323

* For 2009 including non-profit institution sector.

** Data is not available.

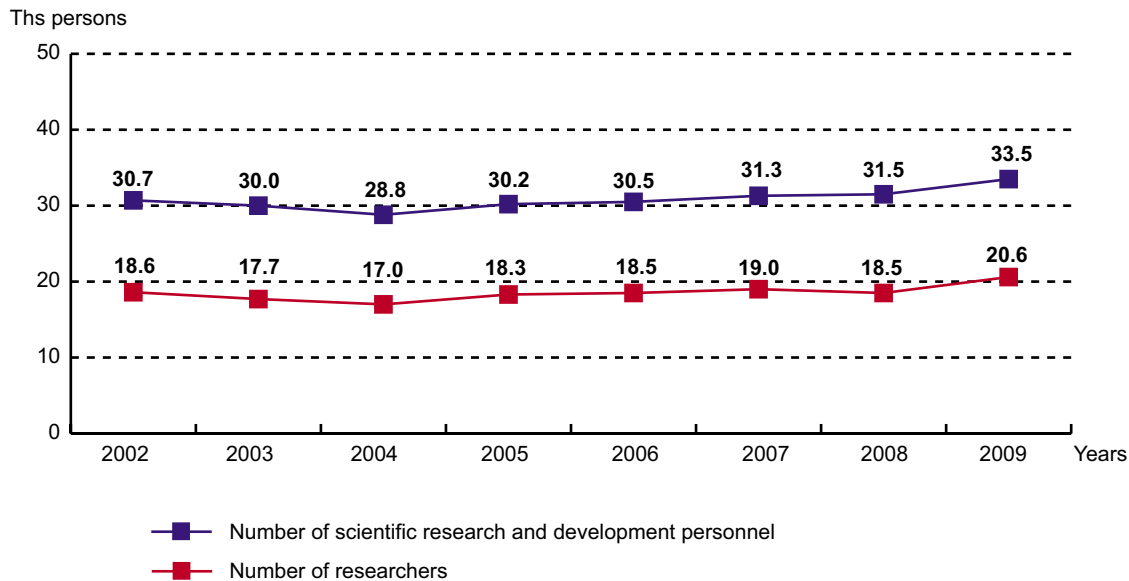
**3.3. SCIENTIFIC RESEARCH AND DEVELOPMENT PERSONNEL,
BY CATEGORY AND EDUCATIONAL ATTAINMENT**
(persons)

	Total		Of which with educational attainment							
			higher		of them with academic degree				secondary specialized	
	doctor of science				candidate of science					
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Number of scientific research and development personnel	31 473	35 516	22 878	24 727	726	739	3143	3231	3587	3525
<i>of them</i>										
researchers	18 455	20 571	17 980	20 014	725	737	3112	3184	410	471
technicians	2278	2322	568	596	–	–	–	1	1087	1114
supporting staff	10 740	10 623	4330	4117	1	2	31	46	2090	1940

3.4. NUMBER OF RESEARCH AND DEVELOPMENT PERSONNEL, BY REGIONS AND MINSK CITY
(persons)

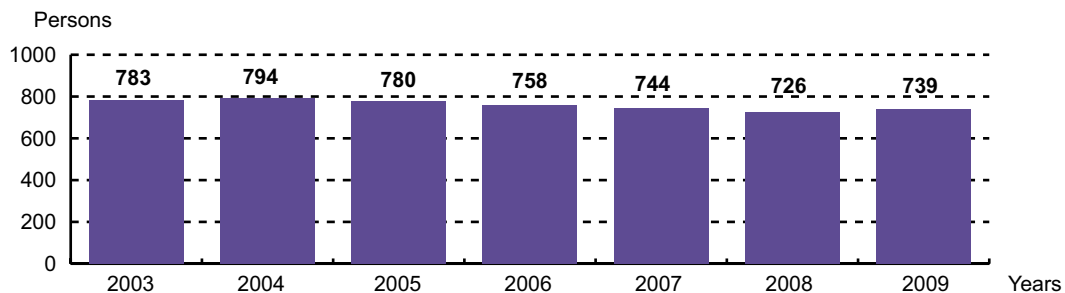
	2000	2004	2005	2006	2007	2008	2009
Republic of Belarus	32 926	28 750	30 222	30 544	31 294	31 473	33 516
<i>regions</i>							
Brest	501	382	477	547	527	558	599
Vitebsk	1293	960	1246	1180	1243	1210	1070
Gomel	3117	2938	2913	2701	2980	3014	3058
Grodno	524	442	409	488	470	432	574
Minsk City	24 556	21 659	22 822	23 209	23 545	23 719	24 906
Minsk	2254	1857	1827	1892	1903	1910	2735
Mogilev	681	512	528	527	626	630	574

3.5. CHANGES IN THE NUMBER OF SCIENTIFIC RESEARCH AND DEVELOPMENT PERSONNEL

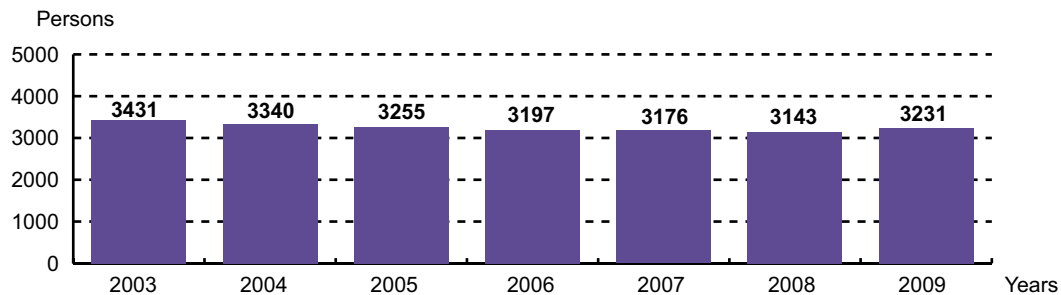


3.6. DOCTORS AND CANDIDATES OF SCIENCE ENGAGED IN SCIENTIFIC RESEARCH AND DEVELOPMENT

Doctors of science



Candidates of science



3.7. RESEARCHERS, BY SEX AND FIELD OF SCIENCE

(persons)

	Number of researchers				Of them							
	total		of them women		doctors of science				candidates of science			
					total		of them women		total		of them women	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Total	18 455	20 571	8106	8800	725	734	121	124	3112	3184	1147	1175
<i>of which</i>												
natural sciences	3640	3794	1774	1899	277	282	46	52	1092	1100	466	477
engineering and technology	10 977	12 648	3929	4355	191	192	11	8	921	926	146	137
medical sciences	954	962	637	624	90	89	24	25	312	317	194	203
agricultural sciences	1183	1208	710	698	72	70	16	15	374	392	157	159
social sciences	1324	1549	839	986	43	51	9	9	255	279	103	109
humanities	377	410	217	238	52	53	15	15	158	170	81	90

3.8. RESEARCHERS, BY SEX AND SECTOR OF PERFORMANCE

(persons)

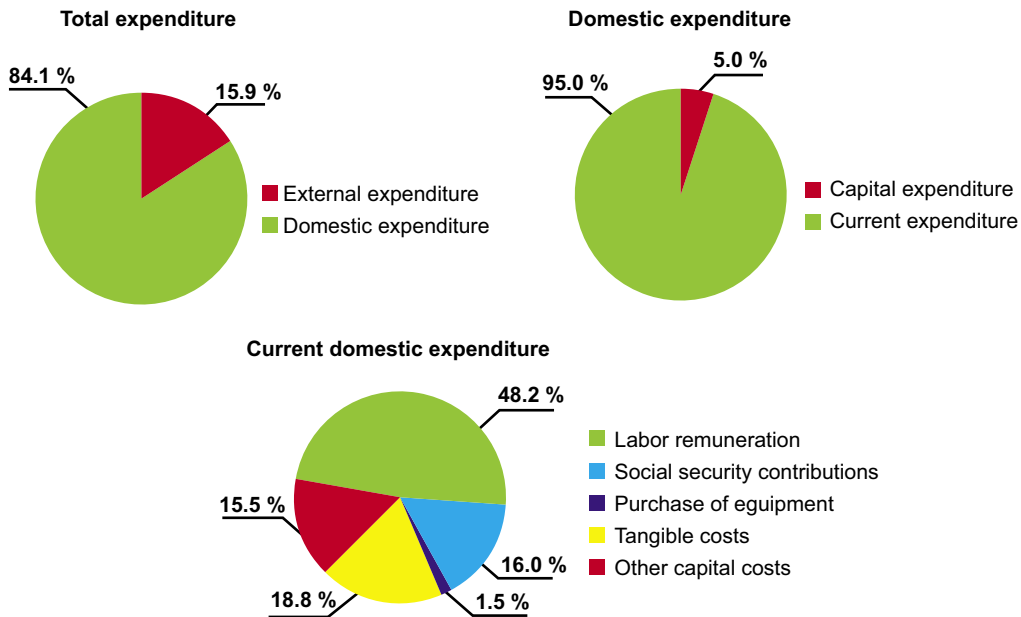
	Number of researchers				Of them with educational attainment					
	total		of them women		higher		of them with academic degree			
							doctor of science		candidate of science	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Total	18 455	20 571	8106	8800	17 980	20 014	725	737	3112	3184
<i>of which</i>										
government sector	8217	5652	4125	2707	8086	5584	582	475	2256	1712
business enterprise sector	8258	10 851	3191	4022	7926	10 402	52	55	362	472
higher education sector	1980	973	790	434	1968	971	91	43	494	232
non-profit institutions sector	...*	3095	...*	1637	...*	3057	...*	164	...*	768

* Data is not available.

4

**RESEARCH AND DEVELOPMENT
EXPENDITURE**

4.1. EXPENDITURE ON SCIENTIFIC RESEARCH AND DEVELOPMENT, BY TYPE OF EXPENDITURE: 2009

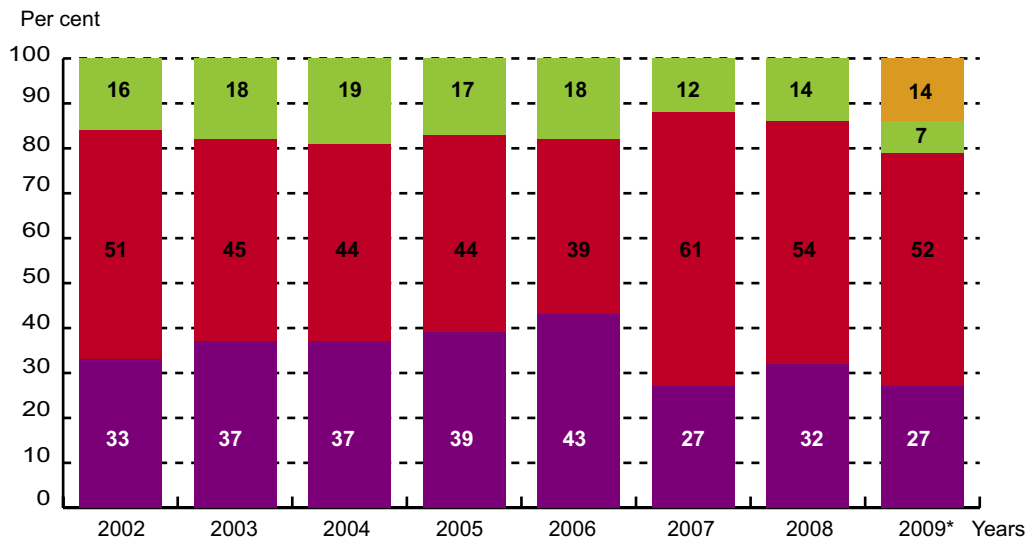


4.2. DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT

	2000	2004	2005	2006	2007	2008	2009
Domestic expenditure on research and development, milliard rubles:							
at current prices	66.0	313.7	441.5	523.7	934.8*	962.4	882.9
at constant prices of 2000	66.0	75.2	89.0	95.3	150.6	127.9	111.7
percent of gross domestic product	0.72	0.63	0.68	0.66	0.96	0.74	0.65

* Growth of expenditure resulted from the capitalization of research and development results.

4.3. DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT, BY SECTOR OF PERFORMANCE



- Government sector
- Business enterprise sector
- Higher education sector
- Non-profit institutions sector

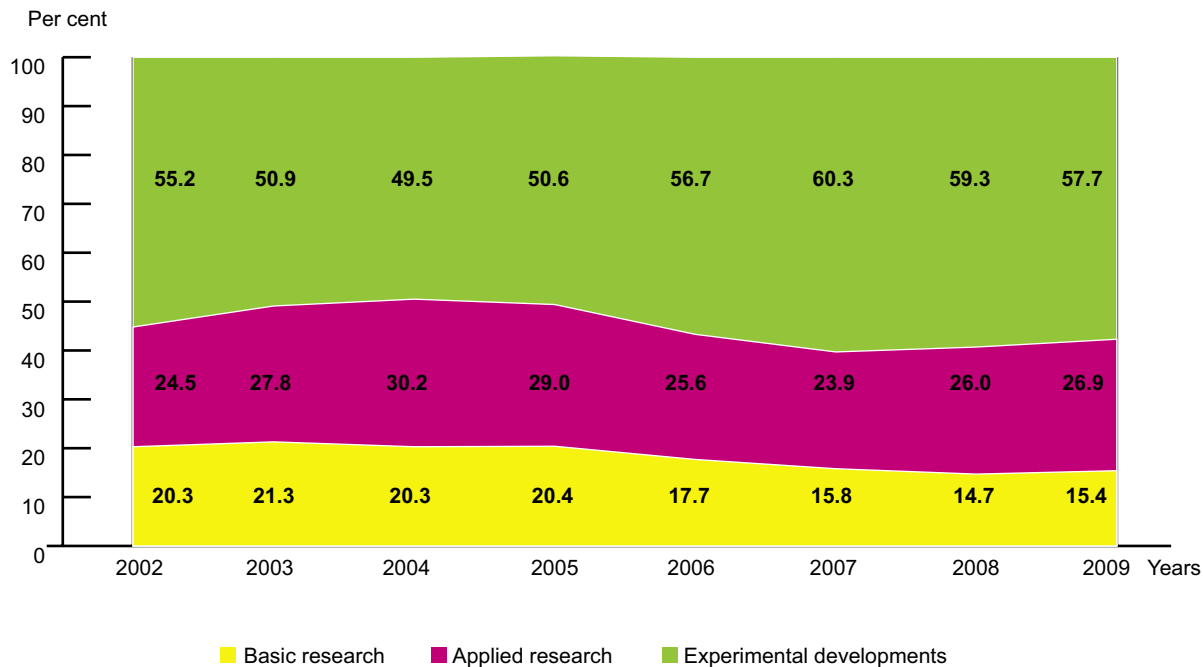
**Including non-profit institutions sector.*

**4.4. CURRENT DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT,
BY RESEARCH AND DEVELOPMENT ACTIVITIES**

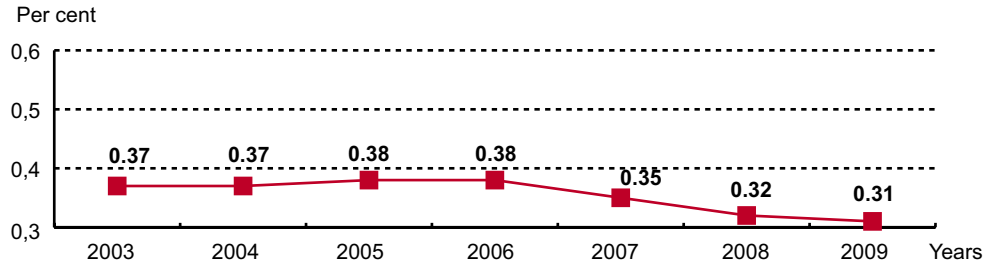
(current prices, milliard rubles)

Years	Current domestic expenditure, total	Of which by type of research and development activity		
		basic research	applied research	experimental developments
2000	62.8	11.9	15.0	35.9
2004	290.1	58.9	87.6	143.6
2005	402.1	82.2	116.5	203.4
2006	485.5	85.8	124.6	275.1
2007	606.8	95.9	144.8	366.1
2008	774.8	114.2	201.8	458.8
2009	839.5	129.5	225.6	484.4

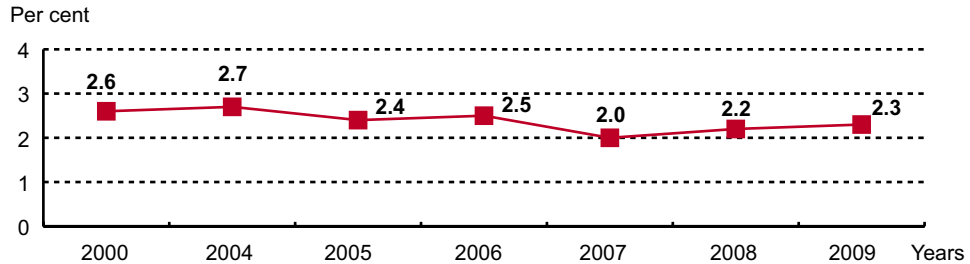
4.5. STRUCTURE OF CURRENT DOMESTIC EXPENDITURE ON SCIENTIFIC RESEARCH AND DEVELOPMENT, BY TYPE OF ACTIVITY



4.6. SHARE OF REPUBLICAN BUDGET APPROPRIATIONS FOR SCIENCE IN GROSS DOMESTIC PRODUCT



4.7. SHARE OF REPUBLICAN BUDGET APPROPRIATIONS FOR SCIENCE IN BUDGET EXPENDITURE*



*The indicator is calculated in accordance with the Budget Laws of corresponding financial years.

5

**RESEARCH AND DEVELOPMENT
EFFECTIVENESS**

**5.1. INVENTIONS: FILING APPLICATIONS FOR GRANTING PATENTS OF THE REPUBLIC OF BELARUS
AND RESULTS OF EXAMINING ACTIVITIES**

Indices	2005	2006	2007	2008	2009
Applications filed, total	1340	1377	1662	1730	1926
<i>of which</i>					
by national applicants	1166	1188	1405	1510	1753
by foreign applicants	174	189	257	220	173
<i>including</i>					
PCT applications entering the national phase	122	148	195	171	133
Completed preliminary examinations, total	1356	1357	1466	1878	1909
Submitted requests for substantive examination	1199	1232	1275	1741	1734
Completed substantive examinations	1533	1595	1741	1634	1640
Decisions to grant patents, total	1086	1231	1378	1294	1329
<i>including</i>					
to national applicants	906	1106	1245	1165	1222
to foreign applicants	180	125	133	129	107
Decisions to refuse patents, total	218	228	301	282	310
<i>including</i>					
to national applicants	182	189	270	220	249
to foreign applicants	36	39	31	62	61

5.2. INVENTIONS: REGISTERING PATENTS OF THE REPUBLIC OF BELARUS, BY YEARS

Indices	2005	2006	2007	2008	2009
Registered patents, total	955	1130	1379	1252	1297
<i>of which</i>					
to national applicants	811	1015	1238	1139	1188
to foreign applicants	144	115	141	113	109

5.3. UTILITY MODELS: FILING THE APPLICATIONS, BY YEARS

Indices	2005	2006	2007	2008	2009
Filed applications, total	853	901	940	967	1119
<i>of which</i>					
by national applicants	827	863	888	910	1060
by foreign applicants	26	38	52	57	59

5.4. UTILITY MODELS: REGISTERED THE PATENTS, BY YEARS

Indices	2005	2006	2007	2008	2009
Registered patents, total	731	830	859	860	965
<i>of which</i>					
to national applicants	708	799	815	812	927
to foreign applicants	23	31	44	48	38

5.5. INDUSTRIAL DESIGNS: FILING APPLICATIONS, BY YEARS

Indices	2005	2006	2007	2008	2009
Filed applications, total	197	241	247	232	249
<i>of which</i>					
by national applicants	109	98	98	119	176
by foreign applicants	88	143	149	113	73

5.6. INDUSTRIAL DESIGNS: REGISTERED THE PATENTS, BY YEARS

Indices	2005	2006	2007	2008	2009
Registered industrial designs, total	204	239	193	197	230
<i>of which</i>					
to national applicants	122	102	73	105	98
to foreign applicants	82	137	120	92	132

**5.7. TOPOGRAPHIES OF INTEGRATED CIRCUITS: FILING APPLICATIONS
AND REGISTRATIONS IN THE REPUBLIC OF BELARUS**

Indices	2005	2006	2007	2008	2009
Applications for registration of the topography	2	2	6	2	8
Number of registered topographies of integrated circuits	1	3	5	1	8

**5.8. TRADEMARKS AND SERVICE MARKS: FILING APPLICATIONS FOR REGISTRATION
IN THE REPUBLIC OF BELARUS, BY YEARS**

Indices	2005	2006	2007	2008	2009
Total number of applications for trademark registration filed	8880	10 208	11 197	11 396	10 268
under the national procedure	3556	4396	5075	4721	4773
<i>of which</i>					
by national applicants	2510	2797	3666	3487	3703
by foreign applicants	1046	1599	1409	1234	1070
under the Madrid Agreement	5324	5812	6122	6675	5495
Total number of applications filed by national applicants under the Madrid Agreement	25	21	67	67	66

5.9. TRADEMARKS AND SERVICE MARKS REGISTRATION, BY YEARS

Indices	2005	2006	2007	2008	2009
Total number of registered trademarks	6087	7416	7854	8528	9113
under the national procedure	1800	2130	2110	2460	2550
<i>of which</i>					
to national applicants	1101	1348	1404	1551	1523
to foreign applicants	699	782	706	909	1027
under the Madrid Agreement	4287	5286	5744	6068	6563
Total number of trademark registrations ceased to be valid	2788	1612	3036	2915	3123
<i>of which</i>					
under the national procedure	2197	749	879	760	756
under the Madrid Agreement	591	863	2157	2155	2367
Total number of valid registrations by the end of the year	69 309	75 113	79 931	85 534	90 399
under the national procedure	19 125	20 506	21 737	23 427	25 192
under the Madrid Agreement	50 184	54 607	58 194	62 107	65 207

5.10. APPELLATIONS OF ORIGIN: FILING APPLICATIONS AND REGISTRATIONS IN THE REPUBLIC OF BELARUS

Indices	2005	2006	2007	2008	2009
Filed applications for registration and granting of the right to use	1	1	–	–	–
Registered appellations of origin	–	1	–	–	–

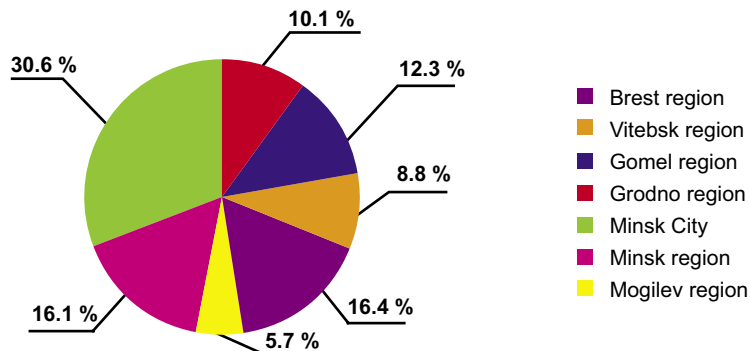
6

TECHNOLOGICAL INNOVATIONS

6.1. NUMBER OF INNOVATIVE ACTIVE ENTERPRISES: 2009

	In total enterprises
Total	317
<i>of which</i>	
Number of innovative active enterprises, the main economic activity is the production of industrial products, units	289
Number of innovative active enterprises, the main economic activity is the communication and activities related to computer technology, units	28

6.2. DISTRIBUTION OF INNOVATION-ACTIVE ENTERPRISES, BY REGION AND MINSK CITY: 2009



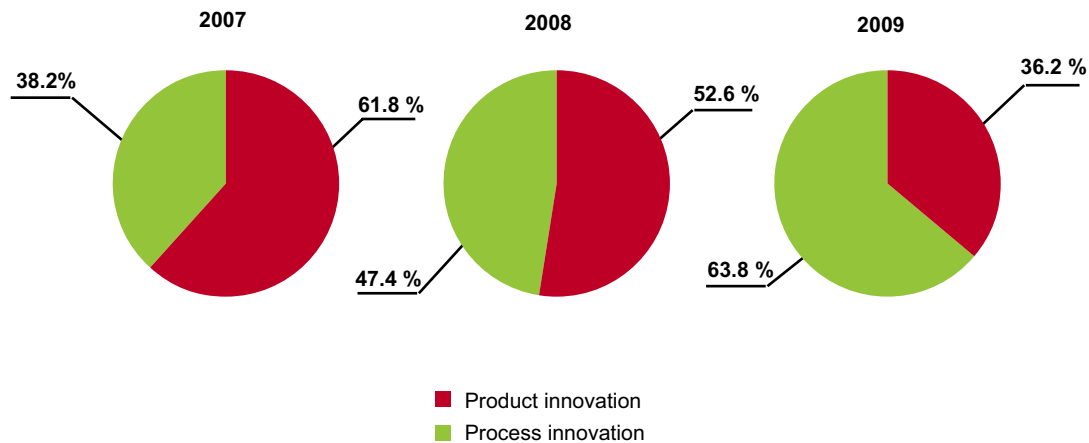
6.3. DISTRIBUTION OF INNOVATIVE ACTIVE ENTERPRISES, BY TYPE OF INNOVATIVE ACTIVITY

	2002	2003	2004	2005	2006	2007	2008	2009
Total	325	314	292	318	378	380	371	234
<i>of which carrying out</i>								
research and development of new products, services and methods of their production/transfer, new production processes	166	158	144	153	164	168	157	149
purchase of machinery and equipment associated with technological innovation	208	200	200	227	275	278	266	145
acquisition of new technology	38	31	28	35	30	23	17	14
of which rights to inventions, utility models and industrial designs; rights of utilization of inventions, utility models and industrial designs	11	6	9	12	9	8	5	4
purchase of computer software	55	60	48	53	52	51	52	23
industrial engineering; other preproduction activities to introduce new products, services, or methods of their production/transfer	129	118	115	114	115	127	137	101
innovation-related education and training of personnel	37	35	44	50	56	51	48	39
marketing research	47	52	49	60	65	54	54	38
other expenditures on technological innovations	46	60	51	46	62	46	45	34

6.4. INNOVATIVE ACTIVITIES OF ENTERPRISES, BY KIND OF ECONOMIC ACTIVITY IN 2009

	Number of enterprises carrying out technological innovations, entities	Share of enterprises carrying out technological innovations in total number of industrial enterprises, percent
Total	234	12.1
<i>of which</i>		
mining	4	14.3
mining and extraction of fuel and energy minerals	2	13.3
mining and extraction of minerals, other than fuel and energy minerals	2	15.4
manufacturing	227	12.9
manufacture of food, including beverages, and tobacco	29	7.8
manufacture of textiles and apparel	19	8.1
manufacture of leather, articles of leather and footwear	–	–
manufacture of wood and products of wood	1	1.3
manufacture of pulp and paper; printing activities	4	1.9
manufacture of coke, petroleum products and nuclear materials	2	66.7
manufacture of chemicals and chemicals products	17	37.0
manufacture of rubber and plastic products	6	10.7
manufacture of other non-metallic mineral products	13	9.7
manufacture of basic metals and fabricated metal products	16	14.3
manufacture of machinery and equipment	52	26.1
manufacture of electrical, electronic and optical equipment	45	37.8
manufacture of transport vehicles and equipment	16	30.2
other industries	7	7.3
production and distribution of electricity, gas and water	3	1.9

6.5. STRUCTURE OF EXPENDITURE ON TECHNOLOGICAL INNOVATIONS, BY TYPE OF INNOVATION



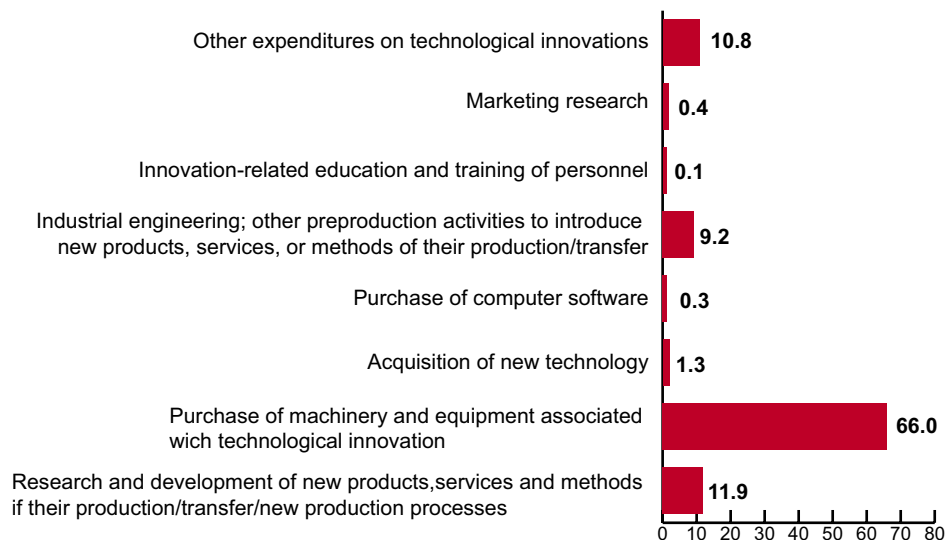
**6.6. SPENDING ON TECHNOLOGICAL INNOVATIONS OF ENTERPRISES WHICH PRINCIPAL
VIEW OF ECONOMIC ACTIVITIES IS MANUFACTURE OF AN INDUSTRIAL OUTPUT: 2009**

(million rubles)

	Spending on technological innovations, rubles
Total	2 728 698
<i>of which</i>	
research and development of new products, services and methods of their production/transfer, new production processes	324 524
purchase of machinery and equipment associated with technological innovation	1 799 877
acquisition of new technology	36 396
of which rights to inventions, utility models and industrial designs; rights to utilization of inventions, utility models and industrial designs	2106
purchase of computer software	8269
industrial engineering; other preproduction activities to introduce new products, services, or methods of their production/transfer	250 514
innovation-related education and training of personnel	2785
marketing research	9605
other kinds of expenditure on technological innovations	296 728

6.7. SPENDING ON TECHNOLOGICAL INNOVATION OF ENTERPRISES WHICH PRINCIPAL VIEW OF ECONOMIC ACTIVITIES IS MANUFACTURE OF AN INDUSTRIAL OUTPUT: 2009

(per cent of total)



6.8. VOLUME OF INNOVATIVE PRODUCT SHIPMENTS OF ORGANIZATIONS, BY KIND OF ECONOMIC ACTIVITY IN 2009

	Innovative product shipments, mln. rubles	As percentage of total shipments
Total	10 089 195	10.9
<i>of which</i>		
mining	3720	0.2
mining and extraction of fuel and energy minerals	1312	0.1
mining and extraction of minerals, other than fuel and energy minerals	2408	0.4
manufacturing	10 085 475	12.8
manufacture of food, including beverages, and tobacco	346 696	1.7
manufacture of textiles and apparel	267 507	8.8
manufacture of leather, articles of leather and footwear	4314	0.5
manufacture of wood and products of wood	4264	0.4
manufacture of pulp and paper; printing activities	38 595	3.0
manufacture of coke, petroleum products and nuclear materials	2 406 931	21.2
manufacture of chemicals and chemicals products	1 158 475	15.1
manufacture of rubber and plastic products	240 781	10.1
manufacture of other non-metallic mineral products	291 016	6.0

manufacture of basic metals and fabricated metal products	891 046	17.4
manufacture of machinery and equipment	2 101 593	19.6
manufacture of electrical, electronic and optical equipment	543 150	18.3
manufacture of transport vehicles and equipment	1 690 924	31.1
other industries	100 183	4.9
production and distribution of electricity, gas and water	–	–

7

INTERNATIONAL COMPARISONS

**7.1. SCIENTIFIC STAFF AND VALUE OF SCIENTIFIC RESEARCH
AND DEVELOPMENT IN THE COMMONWEALTH OF INDEPENDENT STATES***

	Personnel engaged in R&D activities of the end of the year, ths, persons	Of which number of researchers and technicians, of the end of the year, ths, persons	Having scientific degree, persons		Value of carried out research and development, as percentage of gross domestic product
			doctor's degree	candidate's degree	
Azerbaijan					
2000	15.8	11.6	676	3328	0.3
2009	17.4	12.8	771	3302	0.2
Armenia					
2000	7.3	5.0	494	1701	0.3
2009	6.9	5.9	546	1937	0.2
Belarus					
2000	32.9	22.3	819	3848	0.8
2009	33.5	22.9	739	3231	0.7
Georgia					
2000	12.7	11.1	991	3677	0.2
2005	13.4	9.9	1212	4098	0.1
Kazakhstan					
2000	14.8	10.2	948	2797	0.2
2009	15.8	11.2	1338	2735	0.2

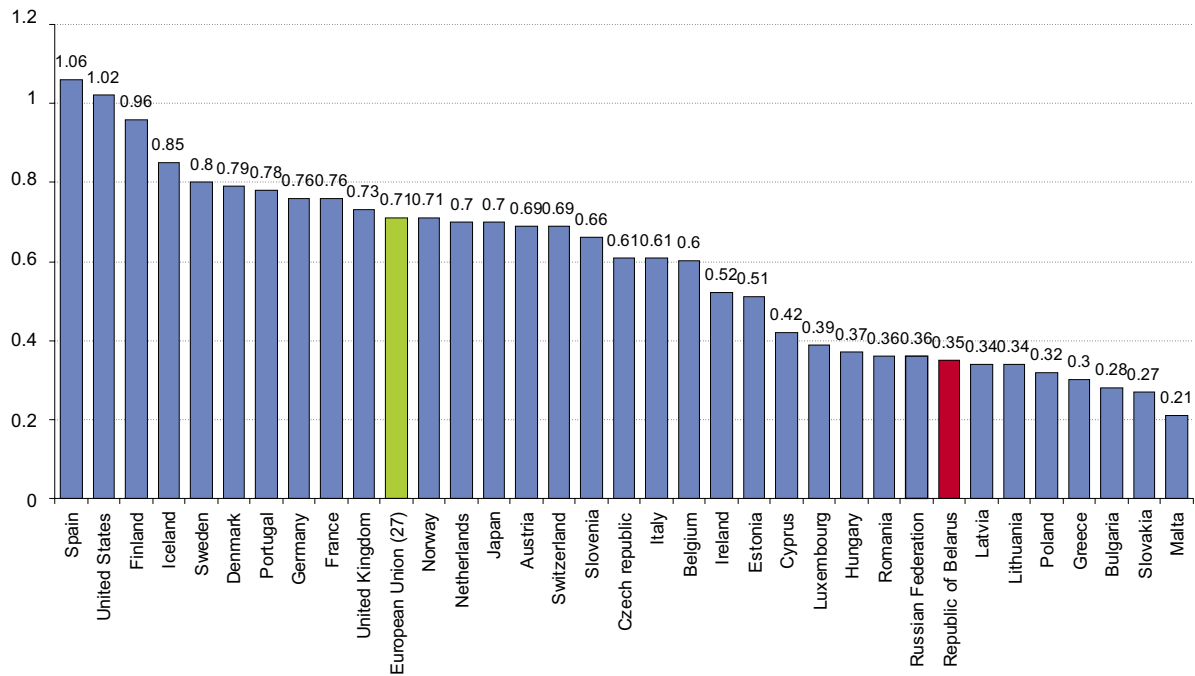
Kyrgyzstan					
2000	3.5	2.3	198	560	0.1
2009	3.5	2.7	330	760	0.1
Moldova					
2000	5.9	4.1	265	1067	0.6
2009	5.4	3.9	382	1374	0.5
Russia					
2000	888	501	22 000	84 000	1.2
2009	742	429	25 300	76 200	1.7
Tajikistan					
2000	3.1	2.5	190	926	0.1
2009	2.8	2.0	229	662	0.1
Turkmenistan					
1995	...***	4.0	181	731	0.3
Uzbekistan					
1999	25.5	15.3	854	2688	0.4
2004	33,6**	27.8**	2269**	8578**	...***
Ukraine					
2000	188.0	120.8	4103	17 916	1.1
2009	146.8	92.4	4441	17 073	0.9

* Source: Interstate Statistical Committee of the Commonwealth of independent states.

** Including scientific-pedagogical workers of higher education establishments.

*** Data is not available.

**7.2. GOVERNMENT BUDGET APPROPRIATIONS OR OUTLAYS
ON RESEARCH AND DEVELOPMENT IN BELARUS AND OTHER COUNTRIES: 2007***
(per cent of gross domestic product)



* Source: here and below Eurostat.

**7.3. GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT
IN BELARUS AND OTHER COUNTRIES**

(per cent of gross domestic product)

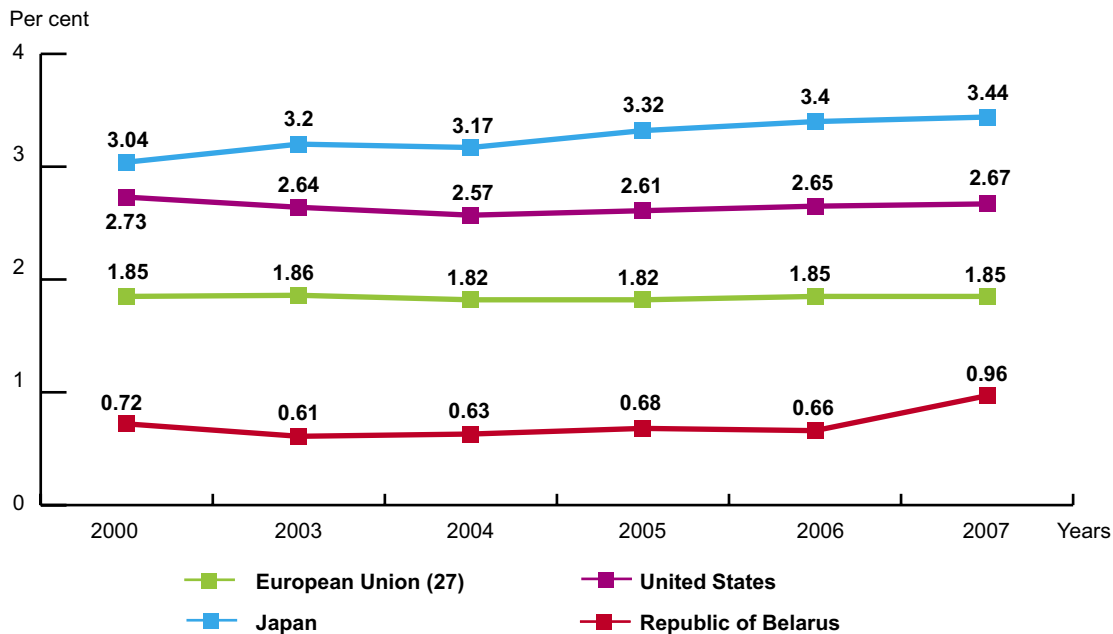
	2003	2004	2005	2006	2007
European Union (27)	1.86	1.82	1.82	1.85	1.85
Euro area	1.86	1.84	1.83	1.86	1.87
Belgium	1.88	1.87	1.84	1.88	1.87
Bulgaria	0.50	0.50	0.49	0.48	0.48
Czech Republic	1.25	1.25	1.41	1.55	1.54
Denmark	2.58	2.48	2.46	2.48	2.55
Germany	2.52	2.49	2.48	2.54	2.54
Estonia	0.77	0.86	0.94	1.15	1.14
Ireland	1.17	1.24	1.25	1.30	1.31
Greece	0.57	0.55	0.58	0.57	0.57
Spain	1.05	1.06	1.12	1.20	1.27
France	2.17	2.15	2.10	2.10	2.08
Italy	1.11	1.10	1.09	1.13	...*
Cyprus	0.35	0.37	0.40	0.43	0.45
Latvia	0.38	0.42	0.56	0.70	0.59
Lithuania	0.67	0.75	0.75	0.79	0.82
Luxembourg	1.65	1.63	1.56	1.66	1.62
Hungary	0.93	0.88	0.94	1.00	0.97

Malta	0.26	0.53	0.57	0.61	0.59
Netherlands	1.76	1.78	1.72	1.71	1.70
Austria	2.26	2.26	2.44	2.46	2.56
Poland	0.54	0.56	0.57	0.56	0.57
Portugal	0.74	0.77	0.81	1.00	1.18
Romania	0.39	0.39	0.41	0.45	0.53
Slovenia	1.27	1.40	1.44	1.56	1.45
Slovakia	0.57	0.51	0.51	0.49	0.46
Finland	3.43	3.45	3.48	3.45	3.47
Sweden	3.85	3.62	3.60	3.74	3.60
United Kingdom	1.75	1.69	1.73	1.76	1.79
Croatia	0.97	1.05	0.87	0.76	0.81
Turkey	0.48	0.52	0.59	0.58	0.72
Iceland	2.82	:	2.77	2.99	2.75
Norway	1.71	1.59	1.52	1.52	1.64
Switzerland	...*	2.90	...*	...*	...*
Japan	3.20	3.17	3.32	3.40	...*
United States	2.64	2.57	2.61	2.65	2.67
Republic of Belarus	0.61	0.63	0.68	0.66	0.96

* Data is not available.

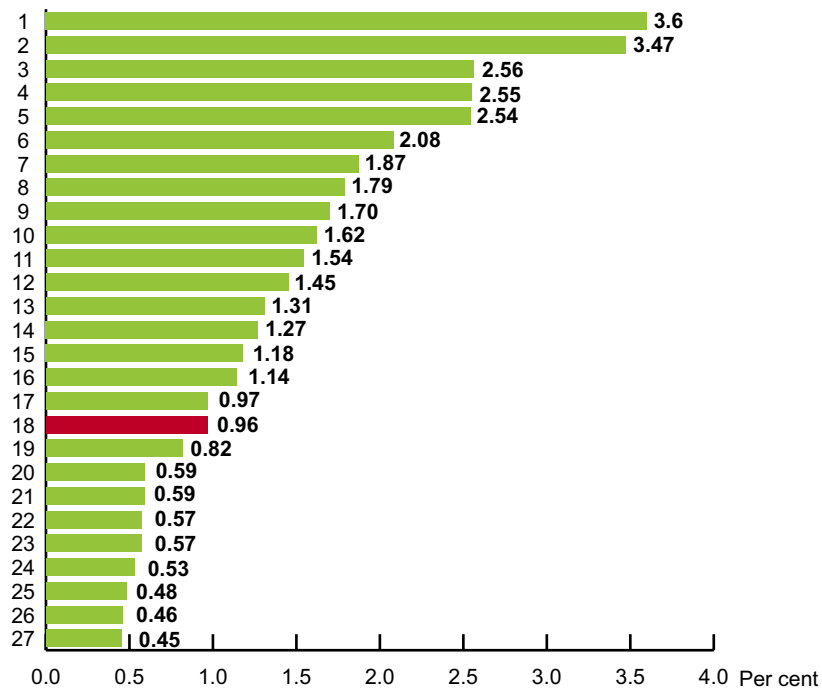
7.4. GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT DYNAMICS IN BELARUS AND OTHER COUNTRIES

(per cent of gross domestic product)



7.5. GROSS DOMESTIC EXPENDITURE ON RESEARCH AND DEVELOPMENT IN BELARUS AND EUROPEAN COUNTRIES: 2007

(per cent of gross domestic product)



- | | |
|--------------------|--------------------------|
| 1. Sweden | 14. Spain |
| 2. Finland | 15. Portugal |
| 3. Austria | 16. Estonia |
| 4. Denmark | 17. Hungary |
| 5. Germany | 18. Republic of Belarus* |
| 6. France | 19. Lithuania |
| 7. Belgium | 20. Latvia |
| 8. United Kingdom | 21. Malta |
| 9. Netherlands | 22. Greece |
| 10. Luxembourg | 23. Poland |
| 11. Czech Republic | 24. Romania |
| 12. Slovenia | 25. Bulgaria |
| 13. Ireland | 26. Slovakia |
| | 27. Cyprus |

* Growth of expenditure resulted from the capitalization of research and development results (in 2008 this figure is equal to — 0.75 in 2009 — 0.65).

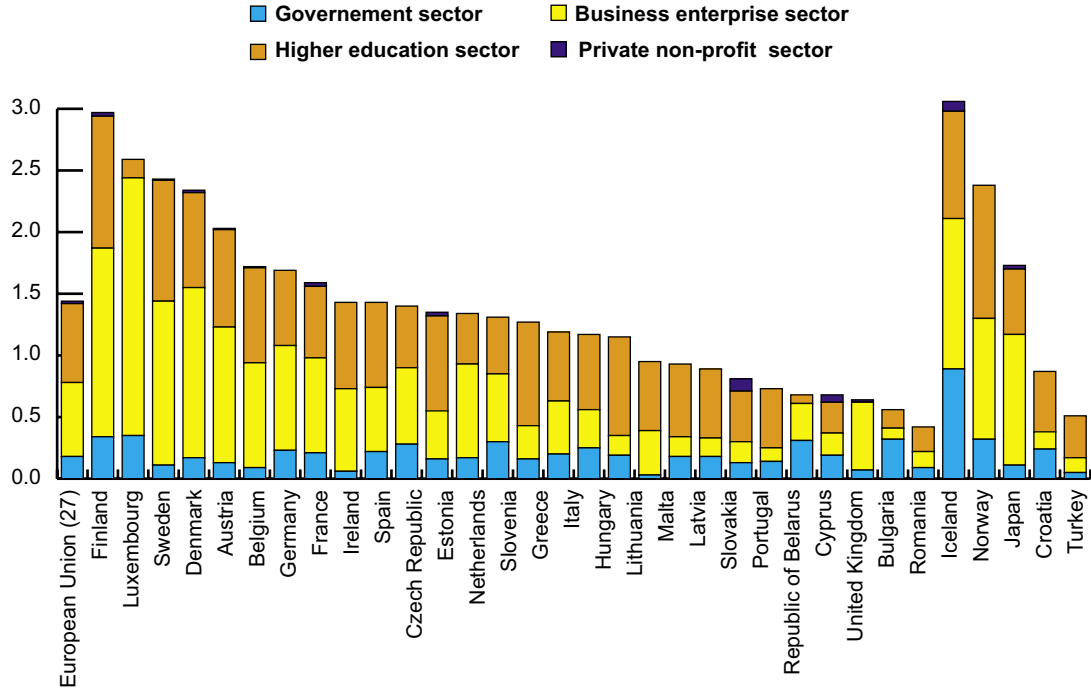
7.6. PROPORTION OF RESEARCH AND DEVELOPMENT PERSONNEL, BY SECTOR: 2007

(per cent of economically active population)

	Government sector	Business enterprise sector	Higher education sector	Private non-profit sector
European Union	0.18	0.60	0.64	0.02
Finland	0.34	1.53	1.07	0.03
Luxembourg	0.35	2.09	0.15	...*
Sweden	0.11	1.33	0.98	0.01
Denmark	0.17	1.38	0.77	0.02
Austria	0.13	1.10	0.79	0.01
Belgium	0.09	0.85	0.77	0.01
Germany	0.23	0.85	0.61	...*
France	0.21	0.77	0.58	0.03
Ireland	0.06	0.67	0.70	...*
Spain	0.22	0.52	0.69	0.00
Czech Republic	0.28	0.62	0.50	0.00
Estonia	0.16	0.39	0.77	0.03
Netherlands	0.17	0.76	0.41	...*
Slovenia	0.30	0.55	0.46	0.00
Greece	0.16	0.27	0.84	...*
Italy	0.20	0.43	0.56	0.04

Hungary	0.25	0.31	0.61	...*
Lithuania	0.19	0.16	0.80	...*
Malta	0.03	0.36	0.56	0.00
Latvia	0.18	0.16	0.59	0.00
Slovakia	0.18	0.15	0.56	0.00
Portugal	0.13	0.17	0.41	0.10
Poland	0.14	0.11	0.48	0.00
Cyprus	0.19	0.18	0.25	0.06
United Kingdom	0.07	0.55	...*	0.02
Bulgaria	0.32	0.09	0.15	0.00
Romania	0.09	0.13	0.20	0.00
Iceland	0.89	1.22	0.87	0.08
Norway	0.32	0.98	1.08	...*
Japan	0.11	1.06	0.53	0.03
Croatia	0.24	0.14	0.49	0.00
Turkey	0.05	0.12	0.34	...*
Republic of Belarus	0.31	0.3	0.07	...*

* Data is not available.



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