

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces



National estimates 2001 to 2011 /
Provincial estimates 2005 to 2009



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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- p preliminary
- r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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Highlights

Gross domestic expenditures on research and development (GERD), 2001 to 2009 Historical, 2010, 2011 Intentions

- Canada's gross domestic expenditures on research and development are anticipated to amount to \$29.9 billion in 2011, a 2.0% increase from preliminary R&D expenditures for 2010. (Table 1-1)
- The 2011 GERD intentions suggest recovery is underway after two years of declining R&D expenditures. However, total R&D spending intentions are still below the \$30.5 billion spent in 2008. (Table 1-1)
- Much of the rebound in 2011 has occurred in the business enterprise sector, Canada's largest R&D performing sector. For the past decade, the two leading performing sectors, business enterprise and higher education, have represented about 90% of total spending on research and development. (Table 1-2)
- In 2011, business enterprises project they will spend \$15.6 billion on R&D, up 5.0% from the previous year. Spending in this sector would account for 52% of total spending on R&D in 2011, down from 62% a decade earlier. (Table 1-2)
- The higher education sector projects spending of \$11.3 billion, up 1%. This sector's spending continues to experience steady, although modest, annual increases. (Table 1-2)
- The federal government, the third largest performing sector, projects spending at \$2.5 billion this year, down 10.3% from 2010. (Table 1-2)
- The remaining R&D performing sectors – provincial governments, provincial research organizations and private non-profit organizations – are anticipated to spend \$481 million in 2011. (Table 1-2)
- In terms of funding, the rankings are similar. In 2011, the business enterprise sector projects funding at \$14.2 billion, the federal government sector at \$5.8 billion and the higher education sector at \$5.2 billion. (Table 1-2)
- Funding also includes the foreign sector, which is anticipated to provide \$2.1 billion in funds. (Table 1-2)

Analysis

Gross domestic expenditure on research and development

The 2011 release of gross domestic expenditure on research and development (GERD) in Canada represents national expenditure intentions for 2010 and 2011 and historical data from 2001. Provincial research and development (R&D) expenditures measure preliminary 2009 data and historical data from 2005.

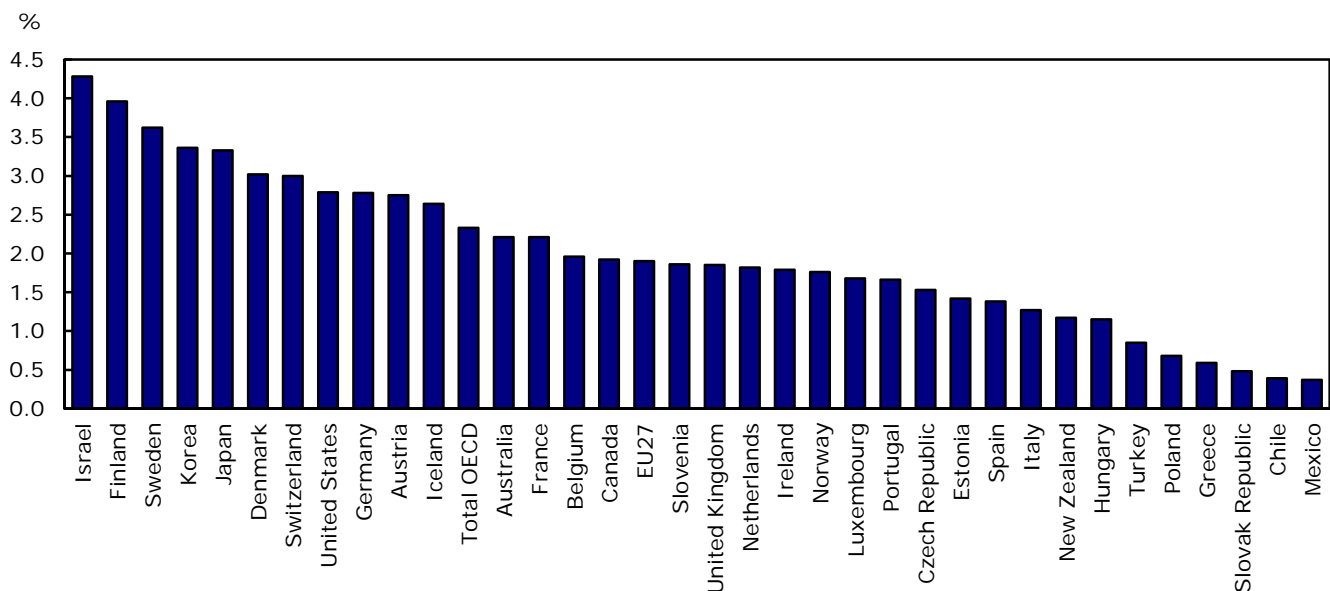
Internationally, a country's gross domestic expenditure on research and development (GERD) as a percentage of its gross domestic product (GDP) is considered an indicator of the country's degree of R&D intensity and is a commonly used summary statistic for international comparisons. However, this statistic should also be compared with GERD and GDP per capita values as it is influenced by a nation's economic and demographic structure, as well as its propensity to perform R&D in particular sectors.

International comparisons

The Organisation for Economic Co-operation and Development's (OECD) publishes international statistics on R&D in its Main Science and Technology Indicators. The most recent edition (volume 2011/1, p. 25) displays comprehensive data for 2009. In that year Israel's GERD as a percentage of its GDP was the highest among OECD member countries at 4.28, followed by Finland at 3.96 and Sweden at 3.62. In 2009, Canada's investments in R&D as a percentage of GDP, at 1.92, ranked lower than the United States at 2.79 and the OECD average of 2.33, but was slightly higher than the 1.90 of the twenty-seven countries in the European Union (EU-27). Among the G8 countries Canada ranked fifth.

Chart 1

Gross domestic expenditure on research and development as a percentage of gross domestic product 2009¹



1. Or latest year available.

Source(s): Organisation for Economic Co-operation and Development (OECD) Main Science and Technology Indicators, Volume 2011/1.

National data

At 1.81, Canada's 2010 GERD as a percentage of GDP was at its lowest level of the past decade, in contrast to the ten year high of 2.09 it attained in 2001. The lower value indicates that R&D investments in Canada diminished as a percentage of gross domestic product (Table 1-1).

The GERD performing sectors include government (federal, provincial and provincial research organisations), business enterprise, private non-profit, and higher education. The sectors for sources of funding data are the same as performing with the addition of the foreign sector, since funds received from abroad to perform R&D are included in GERD's sources of funding.

Canada's GERD is separated into two fields of science: natural sciences and engineering, and social sciences and humanities. It should be noted that all R&D expenditures for the business enterprise sector, the largest performing R&D sector, are undertaken in the natural sciences and engineering field. As a result, most R&D expenditures occur in natural sciences and engineering. In 2011, total R&D expenditures in natural sciences and engineering is anticipated to increase 2.1% to \$27.4 billion or 91% of total GERD. In comparison, R&D expenditures in the social sciences and humanities are anticipated to increase 0.9% to \$2.6 billion (Table 7 and Table 9).

Regional data

Regional and national GERD definitions are similar. However, R&D expenditures by province can be easily misinterpreted. As expenditure data are associated with the region of location of the R&D activities, caution should be used in assuming that all R&D expenditures actually occur in this location. For example, supplies and equipment may be purchased from other locations, and cross-provincial border labour mobility can occur.

Regional performing sector expenditures are assigned to the province or territory in which the performing establishment is located. Similarly, regional funding sector expenditures represent R&D funding distributed in a province or territory. The funds do not necessarily originate from within the province. For instance, when the federal government is shown as funding R&D in a province, the funds are recorded in one of the performing sectors. Intramural federal funding expenditures represent federal performance conducted in the province. For example, in 2009 the federal government funded \$84 million of R&D in New Brunswick. Of the total \$84 million in R&D funding, \$35 million was performed intramurally (by federal organization(s) located in New Brunswick), \$44 million was performed in New Brunswick's higher education sector, \$4 million in New Brunswick's business enterprise sector and less than half a million dollars was performed by provincial research organizations (Table 6-4).

The private non profit (PNP) sector funding and performing data for R&D appear in the GERD national data. As of reference year 2000, R&D performance data are not distributed by province or territory. However, R&D funding data for the PNP sector are distributed by province and territory. In 2009 the highest value of PNP funding, \$406 million, occurred in Ontario. This was down 4.5% from 2008. When compared to all other funding sources available for each province, PNP's share was highest in 2009 for Manitoba at 5.1% (Table 4-2).

Data on the provincial distribution of R&D spending are available up to 2009. The highest percentage of provincial GERD to provincial GDP in 2009 occurred in Quebec at 2.58, followed by 2.30 in Ontario. However, GERD per capita for 2009 was slightly higher in Ontario at \$1,030 versus Quebec at \$1,009. Meanwhile, Saskatchewan had the lowest percentage of provincial GERD to provincial GDP at 1.03 with a GERD per capita value of \$583. Comparatively, Prince Edward Island reported a higher percentage of GERD to GDP at 1.38, but a lower GERD per capita of \$471. Many factors, such as economic structure and population, have different effects on GERD as a percentage of GDP. While Alberta's GERD as a percentage of its GDP ranked seventh among the ten provinces at 1.18, for example, its GERD per capita ranked third highest at \$785 (Table 2).

At the national level, R&D expenditures in the natural sciences and engineering decreased 4.0% from 2008 to 2009. Ontario, at \$12.3 billion, accounted for 46% of 2009 GERD in the natural sciences and engineering field, followed by Quebec at \$7.3 billion (27%) and Alberta at \$2.6 billion (10%). In comparison, national R&D expenditures in the social sciences and humanities increased 1.6% in 2009. Ontario accounted for 44% of GERD in social sciences and humanities at \$1.1 billion, followed by Quebec at \$584 million (23%) and British Columbia at \$253 million (10%) (Tables 8 and 10).

Related products

Selected publications from Statistics Canada

88-001-X	Science Statistics
88-202-X	Industrial Research and Development Intentions
88-204-X	Federal Scientific Activities
88-0006-F	Business Special Surveys and Technology Statistics Division Working Papers

Selected CANSIM tables from Statistics Canada

358-0001	Gross domestic expenditures on research and development, by science type and by funder and performer sector, annual
358-0024	Business enterprise research and development (BERD) characteristics, by industry group based on the North American Industry Classification System (NAICS), annual
358-0026	Intellectual property management, by federal departments and agencies indicators, annual
358-0142	Federal expenditures on science and technology and its components in current dollars and 2002 constant dollars, annual
358-0143	Federal expenditures on science and technology and its components, by type of science and performing sector, annual
358-0144	Federal expenditures on science and technology and its components, by activity and performing sector, annual
358-0145	Federal intramural expenditures on science and technology and its components, by type of science for the National Capital Region, annual
358-0146	Federal personnel engaged in science and technology activities, by type of science and personnel category, annual
358-0147	Federal personnel engaged in science and technology and its components, by type of science and personnel category, annual
358-0148	Federal personnel engaged in science and technology and its components, by type of science, personnel category, Canada, provinces and territories, annual

358-0149	Federal expenditures on science and technology and its components, by type of science, performing sector, Canada, provinces and territories, annual
358-0150	Federal extramural expenditures on science and technology and its components, by type of science, performing sector, type of payment, Canada, provinces and territories, annual
358-0151	Federal expenditures on science and technology and its components, by socio-economic objectives, annual

Selected surveys from Statistics Canada

4201	Research and Development in Canadian Industry
4204	Research and Development of Canadian Private Non-Profit Organizations
4208	Provincial Research Organizations
4212	Federal Science Expenditures and Personnel, Activities in the Social Sciences and Natural Sciences
5109	Higher Education Research and Development Estimates

Selected summary tables from Statistics Canada

- *Domestic spending on research and development (GERD), performing sector, by province*
- *Domestic spending on research and development (GERD)*
- *Research and development performed by the business enterprise sector*
- *Domestic spending on research and development (GERD), funding sector, by province*

Statistical tables

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 1-1

Gross domestic expenditures on research and development — In current dollars, in 2002 constant dollars and as a percentage of gross domestic product

	Current dollars		Gross domestic expenditure on research and development as a percentage of Gross domestic product	Gross domestic product implicit price index ²	2002 constant dollars, Gross domestic expenditure on research and development ³
	Gross domestic expenditure on research and development	Gross domestic product ¹			
	millions of dollars		percent	index=2002	millions of dollars
2001	23,133	1,108,048	2.09	98.9	23,390
2002	23,536	1,152,905	2.04	100.0	23,536
2003	24,690	1,213,175	2.04	103.3	23,901
2004	26,679	1,290,906	2.07	106.6	25,027
2005 ^r	28,022	1,373,845	2.04	110.1	25,429
2006 ^r	29,079	1,450,405	2.00	113.0	25,734
2007 ^r	30,032	1,529,589	1.96	116.7	25,734
2008 ^r	30,517	1,603,418	1.90	121.4	25,137
2009	29,430	1,528,985	1.92	119.1	24,711
2010 ^p	29,340	1,624,608	1.81	122.6	23,931
2011 ^p	29,931	..	..	..	..

1. CANSIM, table 380-0017

2. CANSIM, table 384-0036

3. Gross domestic expenditure on research and development data are deflated by the gross domestic product implicit price index.

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 1-2
Gross domestic expenditures on research and development — By performing sector and funding sector

	Federal government	Provincial governments ¹	Business enterprise	Higher education	Private non-profit organizations	Foreign	Total
millions of dollars							
Performing sector							
2001	2,103	276	14,266	6,424	63	...	23,133
2002	2,190	282	13,545	7,455	63	...	23,536
2003 r	2,083	278	14,094	8,143	92	...	24,690
2004 r	2,084	290	15,144	9,058	103	...	26,679
2005 r	2,414	303	15,638	9,518	149	...	28,022
2006 r	2,496	332	16,474	9,625	152	...	29,079
2007 r	2,532	392	16,756	10,187	164	...	30,032
2008 r	2,599	402	16,409	10,926	179	...	30,517
2009	2,762	420	15,110	11,013	125	...	29,430
2010 p	2,839	347	14,895	11,145	115	...	29,340
2011 p	2,547	372	15,646	11,257	109	...	29,931
Funding sector							
2001	4,095	1,023	11,637	2,928	536	2,915	23,133
2002	4,251	1,152	12,117	3,462	628	1,925	23,536
2003 r	4,526	1,354	12,426	3,589	637	2,158	24,690
2004 r	4,651	1,370	13,388	4,147	735	2,389	26,679
2005 r	5,252	1,358	13,827	4,341	784	2,460	28,022
2006 r	5,226	1,467	14,874	4,435	827	2,252	29,079
2007 r	5,480	1,468	14,774	4,574	957	2,779	30,032
2008 r	5,682	1,570	15,040	5,054	1,015	2,156	30,517
2009	5,915	1,591	13,694	5,121	954	2,156	29,430
2010 p	6,040	1,576	13,418	5,182	961	2,162	29,340
2011 p	5,810	1,618	14,170	5,234	969	2,131	29,931

1. Includes provincial research councils and foundations.

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Source(s): CANSIM, table 358-0001

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 2
Provincial statistics and their relationship to gross domestic expenditures on research and development, 2009

	Gross domestic product ¹		Gross domestic expenditures on research and development		Population ²	Gross domestic expenditures on research and development		
	millions of dollars	percent	millions of dollars	percent	thousands	As a percentage of Gross domestic product	Per capita dollars	
Canada ³	1,528,985	100	29,430	100	33,512	100	1.92	878
Newfoundland and Labrador	24,762	2	259	1	508	2	1.05	510
Prince Edward Island	4,778	0	66	0	140	0	1.38	471
Nova Scotia	34,774	2	500	2	939	3	1.44	532
New Brunswick	27,920	2	327	1	749	2	1.17	437
Quebec	304,861	20	7,855	27	7,785	23	2.58	1,009
Ontario	581,635	38	13,386	45	12,994	39	2.30	1,030
Manitoba	51,518	3	653	2	1,211	4	1.27	539
Saskatchewan	57,995	4	596	2	1,022	3	1.03	583
Alberta	240,697	16	2,851	10	3,632	11	1.18	785
British Columbia	191,863	13	2,798	10	4,424	13	1.46	633

1. CANSIM, table 384-0002.

2. CANSIM, table 051-0005.

3. Includes the Yukon, Northwest Territories and Nunavut.

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 3
Provincial distribution of the gross domestic expenditures on research and development

	Canada ¹	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
millions of dollars											
Research and development											
2001	23,133	142	37	376	162	6,416	11,733	457	396	1,588	1,760
2002	23,536	153	31	400	211	6,728	11,394	454	435	1,715	1,949
2003	24,690	173	43	409	215	6,965	11,983	455	398	1,901	2,050
2004 r	26,679	173	41	447	227	7,244	12,956	518	425	2,262	2,263
2005 r	28,022	267	66	466	258	7,262	13,664	582	454	2,422	2,414
2006 r	29,079	264	69	502	273	7,904	13,825	562	473	2,599	2,432
2007 r	30,032	261	60	509	324	7,949	14,059	600	504	2,709	2,838
2008 r	30,517	257	64	523	321	8,092	14,055	586	536	2,968	2,906
2009	29,430	259	66	500	327	7,855	13,386	653	596	2,851	2,798
2010 P	29,340	..	..	..	..	..	..	..	..	..	..
2011 P	29,931	..	..	..	..	..	..	..	..	..	..
Gross domestic product											
2001	1,108,048	14,179	3,431	25,909	20,684	231,624	453,701	35,157	33,127	151,274	133,514
2002	1,152,905	16,457	3,701	27,082	21,169	241,448	477,763	36,559	34,343	150,594	138,193
2003	1,213,175	18,119	3,798	28,851	22,366	250,752	493,081	37,451	36,653	170,113	145,642
2004 r	1,290,906	19,407	3,983	29,853	23,672	262,761	516,106	39,748	40,796	189,743	157,675
2005 r	1,373,845	21,960	4,096	31,199	24,716	272,049	537,383	41,681	43,996	219,810	169,664
2006 r	1,450,405	26,064	4,315	31,644	25,847	282,505	560,576	45,173	45,604	238,886	182,251
2007 r	1,529,589	29,249	4,543	33,031	27,044	295,928	583,946	48,920	50,863	255,787	192,117
2008 r	1,603,418	30,785	4,687	34,519	27,499	304,479	587,055	51,575	65,649	288,700	199,441
2009	1,528,985	24,762	4,778	34,774	27,920	304,861	581,635	51,518	57,995	240,697	191,863
2010 P	1,624,608	28,192	5,010	36,352	29,448	319,348	612,494	54,257	63,557	263,537	203,147
2011 P	..	..	..	..	..	..	..	..	..	..	..
percent											
Canada total											
2001	100.0	0.6	0.2	1.6	0.7	27.7	50.7	2.0	1.7	6.9	7.6
2002	100.0	0.7	0.1	1.7	0.9	28.6	48.4	1.9	1.8	7.3	8.3
2003	100.0	0.7	0.2	1.7	0.9	28.2	48.5	1.8	1.6	7.7	8.3
2004 r	100.0	0.6	0.2	1.7	0.9	27.2	48.6	1.9	1.6	8.5	8.5
2005 r	100.0	1.0	0.2	1.7	0.9	25.9	48.8	2.1	1.6	8.6	8.6
2006 r	100.0	0.9	0.2	1.7	0.9	27.2	47.5	1.9	1.6	8.9	8.4
2007 r	100.0	0.9	0.2	1.7	1.1	26.5	46.8	2.0	1.7	9.0	9.4
2008 r	100.0	0.8	0.2	1.7	1.1	26.5	46.1	1.9	1.8	9.7	9.5
2009	100.0	0.9	0.2	1.7	1.1	26.7	45.5	2.2	2.0	9.7	9.5
2010 P	100.0	..	..	..	..	..	..	..	..	..	..
2011 P	100.0	..	..	..	..	..	..	..	..	..	..
Gross domestic product											
2001	2.1	1.0	1.1	1.5	0.8	2.8	2.6	1.3	1.2	1.0	1.3
2002	2.0	0.9	0.8	1.5	1.0	2.8	2.4	1.2	1.3	1.1	1.4
2003	2.0	1.0	1.1	1.4	1.0	2.8	2.4	1.2	1.1	1.1	1.4
2004 r	2.1	0.9	1.0	1.5	1.0	2.8	2.5	1.3	1.0	1.2	1.4
2005 r	2.0	1.2	1.6	1.5	1.0	2.7	2.5	1.4	1.0	1.1	1.4
2006 r	2.0	1.0	1.6	1.6	1.1	2.8	2.5	1.2	1.0	1.1	1.3
2007 r	2.0	0.9	1.3	1.5	1.2	2.7	2.4	1.2	1.0	1.1	1.5
2008 r	1.9	0.8	1.4	1.5	1.2	2.7	2.4	1.1	0.8	1.0	1.5
2009	1.9	1.0	1.4	1.4	1.2	2.6	2.3	1.3	1.0	1.2	1.5
2010 P	1.8	..	..	..	..	..	..	..	..	..	..
2011 P	..	..	..	..	..	..	..	..	..	..	..

1. Includes the Yukon, Northwest Territories and Nunavut.

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 4-1
Provincial distribution of gross domestic expenditures on research and development — By performing sector, 2009

	Canada ¹	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
millions of dollars											
All sectors	29,430	259	66	500	327	7,855	13,386	653	596	2,851	2,798
Federal government	2,762	25	15	67	37	396	1,811	112	72	108	115
Provincial governments ²	420	0	0	0	13	99	51	8	84	138	25
Business enterprise	15,110	81	9	89	119	4,581	6,971	204	129	1,420	1,502
Higher education	11,013	153	41	345	158	2,779	4,555	328	311	1,185	1,157
Private non-profit organizations	125	..	..	..	..	..	..	..	..	..	..
percent											
Canada total as a percentage											
All sectors	100.0	0.9	0.2	1.7	1.1	26.7	45.5	2.2	2.0	9.7	9.5
Federal government	100.0	0.9	0.5	2.4	1.3	14.3	65.6	4.1	2.6	3.9	4.2
Provincial governments ²	100.0	0.0	0.0	0.0	3.1	23.6	12.1	1.9	20.0	32.9	6.0
Business enterprise	100.0	0.5	0.1	0.6	0.8	30.3	46.1	1.4	0.9	9.4	9.9
Higher education	100.0	1.4	0.4	3.1	1.4	25.2	41.4	3.0	2.8	10.8	10.5
Private non-profit organizations	100.0	..	..	..	..	..	..	..	..	..	..
Provincial total as a percentage											
All sectors	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Federal government	9.4	9.7	22.7	13.4	11.3	5.0	13.5	17.2	12.1	3.8	4.1
Provincial governments ²	1.4	0.0	0.0	0.0	4.0	1.3	0.4	1.2	14.1	4.8	0.9
Business enterprise	51.3	31.3	13.6	17.8	36.4	58.3	52.1	31.2	21.6	49.8	53.7
Higher education	37.4	59.1	62.1	69.0	48.3	35.4	34.0	50.2	52.2	41.6	41.4
Private non-profit organizations	0.4	..	..	..	..	..	..	..	..	..	..

1. Includes the Yukon, Northwest Territories and Nunavut.

2. Includes provincial research councils and foundations.

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Source(s): CANSIM, table 358-0001.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 4-2
Provincial distribution of gross domestic expenditures on research and development — By funding sector, 2009

	Canada ¹	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
millions of dollars											
All sectors	29,430	259	66	500	327	7,855	13,386	653	596	2,851	2,798
Federal government	5,915	66	30	164	84	1,240	3,040	194	175	375	514
Provincial governments ²	1,591	5	1	10	18	423	448	33	110	344	154
Business enterprise	13,694	87	9	109	125	4,147	6,132	202	138	1,449	1,288
Higher education	5,121	86	24	186	96	1,277	2,130	165	152	508	498
Private non-profit organizations	954	5	1	22	2	239	406	33	14	86	105
Foreign	2,156	11	0	9	3	531	1,231	27	7	89	240
percent											
Canada total as a percentage	100.0	0.9	0.2	1.7	1.1	26.7	45.5	2.2	2.0	9.7	9.5
Federal government	100.0	1.1	0.5	2.8	1.4	21.0	51.4	3.3	3.0	6.3	8.7
Provincial governments ²	100.0	0.3	0.1	0.6	1.1	26.6	28.2	2.1	6.9	21.6	9.7
Business enterprise	100.0	0.6	0.1	0.8	0.9	30.3	44.8	1.5	1.0	10.6	9.4
Higher education	100.0	1.7	0.5	3.6	1.9	24.9	41.6	3.2	3.0	9.9	9.7
Private non-profit organizations	100.0	0.5	0.1	2.3	0.2	25.1	42.6	3.5	1.5	9.0	11.0
Foreign	100.0	0.5	0.0	0.4	0.1	24.6	57.1	1.3	0.3	4.1	11.1
Provincial total as a percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Federal government	20.1	25.5	45.5	32.8	25.7	15.8	22.7	29.7	29.4	13.2	18.4
Provincial governments ²	5.4	1.9	1.5	2.0	5.5	5.4	3.3	5.1	18.5	12.1	5.5
Business enterprise	46.5	33.6	13.6	21.8	38.2	52.8	45.8	30.9	23.2	50.8	46.0
Higher education	17.4	33.2	36.4	37.2	29.4	16.3	15.9	25.3	25.5	17.8	17.8
Private non-profit organizations	3.2	1.9	1.5	4.4	0.6	3.0	3.0	5.1	2.3	3.0	3.8
Foreign	7.3	4.2	0.0	1.8	0.9	6.8	9.2	4.1	1.2	3.1	8.6

1. Includes the Yukon, Northwest Territories and Nunavut.

2. Includes provincial research councils and foundations.

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Source(s): CANSIM, table 358-0001.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 5
National gross domestic expenditures on research and development, in the total sciences, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2011 P Total sciences							
Total	2,547	336	36	15,646	11,257	109	29,931
Federal government	2,472	0	2	360	2,953	24	5,810
Provincial governments	4	336	13	155	1,065	39	1,612
Provincial research organizations	.	.	6	.	.	.	6
Business enterprise	71	0	15	13,130	950	4	14,170
Higher education	.	.	.	.	5,234	.	5,234
Private non-profit organizations	.	.	.	.	932	36	969
Foreign	.	..	0 ^s	2,001	123	6	2,131
2010 P Total sciences							
Total	2,839	312	35	14,895	11,145	115	29,340
Federal government	2,753	0	2	337	2,923	25	6,040
Provincial governments	5	312	13	147	1,054	41	1,570
Provincial research organizations	.	.	6	.	.	.	6
Business enterprise	81	0	14	12,378	940	4	13,418
Higher education	.	.	.	.	5,182	.	5,182
Private non-profit organizations	.	.	.	.	923	38	961
Foreign	.	..	0 ^s	2,033	122	7	2,162
2009 Total sciences							
Total	2,762	387	33	15,110	11,013	125	29,430
Federal government	2,684	1	2	312	2,889	27	5,915
Provincial governments	5	338	12	145	1,042	44	1,586
Provincial research organizations	.	.	5	.	.	.	5
Business enterprise	73	47	14	12,626	929	5	13,694
Higher education	.	.	.	.	5,121	.	5,121
Private non-profit organizations	.	.	.	.	912	42	954
Foreign	.	..	0 ^s	2,027	121	8	2,156
2008 P Total sciences							
Total	2,599	364	38	16,409	10,926	179	30,517
Federal government	2,519	2	3	298	2,811	51	5,682
Provincial governments	10	321	11	88	1,105	35	1,570
Provincial research organizations	.	.	0	.	.	.	0
Business enterprise	71	40	22	13,996	892	14	15,040
Higher education	.	.	.	.	5,054	.	5,054
Private non-profit organizations	.	.	.	.	949	65	1,015
Foreign	.	0	1	2,026	114	14	2,156
2007 P Total sciences							
Total	2,532	335	57	16,756	10,187	164	30,032
Federal government	2,459	2	2	253	2,720	44	5,480
Provincial governments	9	295	10	97	1,034	24	1,468
Provincial research organizations	.	.	0	.	.	.	0
Business enterprise	64	38	44	13,744	870	13	14,774
Higher education	.	.	.	.	4,574	.	4,574
Private non-profit organizations	.	.	.	.	890	67	957
Foreign	.	0	1	2,663	99	16	2,779
2006 P Total sciences							
Total	2,496	310	22	16,474	9,625	152	29,079
Federal government	2,434	4	1	260	2,488	39	5,226
Provincial governments	7	274	10	155	993	29	1,467
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	55	33	10	13,947	808	21	14,874
Higher education	.	.	.	.	4,435	.	4,435
Private non-profit organizations	.	.	.	.	776	51	827
Foreign	.	0	0 ^s	2,113	126	13	2,252

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 5 – continued

National gross domestic expenditures on research and development, in the total sciences, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2005 † Total sciences							
Total	2,414	280	23	15,638	9,518	149	28,022
Federal government	2,341	4	1	323	2,542	41	5,252
Provincial governments	9	246	12	90	973	28	1,358
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	64	30	10	12,899	803	21	13,827
Higher education	.	.	.	.	4,341	.	4,341
Private non-profit organizations	.	.	.	.	742	42	784
Foreign	.	0	0 ^s	2,327	116	17	2,460
2004 † Total sciences							
Total	2,084	265	25	15,144	9,058	103	26,679
Federal government	2,028	2	1	271	2,337	12	4,651
Provincial governments	7	236	14	59	1,039	15	1,370
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	49	26	10	12,535	755	13	13,388
Higher education	.	.	.	.	4,147	.	4,147
Private non-profit organizations	.	.	.	.	685	50	735
Foreign	.	0	0 ^s	2,280	96	13	2,389
2003 † Total sciences							
Total	2,083	254	24	14,094	8,143	92	24,690
Federal government	2,027	2	1	299	2,182	15	4,526
Provincial governments	8	226	14	70	1,018	17	1,354
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	48	25	9	11,651	679	14	12,426
Higher education	.	.	.	.	3,589	.	3,589
Private non-profit organizations	.	.	.	.	599	38	637
Foreign	.	0	0 ^s	2,073	76	8	2,158
2002 Total sciences							
Total	2,190	256	26	13,545	7,455	63	23,536
Federal government	2,124	2	1	300	1,817	6	4,251
Provincial governments	11	225	15	53	828	20	1,152
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	55	29	9	11,370	643	12	12,117
Higher education	.	.	.	.	3,462	.	3,462
Private non-profit organizations	.	.	.	.	604	24	628
Foreign	.	0	1	1,822	101	1	1,925
2001 Total sciences							
Total	2,103	253	23	14,266	6,424	63	23,133
Federal government	2,044	0	1	457	1,587	6	4,095
Provincial governments	6	222	12	51	712	20	1,023
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	53	31	9	10,930	603	10	11,637
Higher education	.	.	.	.	2,928	.	2,928
Private non-profit organizations	.	.	.	.	510	26	536
Foreign	.	0	1	2,828	84	1	2,915

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-1
Provincial gross domestic expenditures on research and development, in the total sciences — Newfoundland and Labrador

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009						
Total	25	..	..	81	153	259
Federal government	24	.	.	8	34	66
Provincial governments	0 ^s	..	.	1	4	5
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	63	23	87
Higher education	.	.	.	.	86	86
Private non-profit organizations	.	.	.	.	5	5
Foreign	.	.	.	10	1	11
2008^r						
Total	19	5	..	88	146	257
Federal government	19	.	.	1	36	56
Provincial governments	0 ^s	5	.	0 ^s	8	13
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	.	.	78	17	96
Higher education	.	.	.	.	77	77
Private non-profit organizations	.	.	.	.	6	6
Foreign	.	.	.	8	1	10
2007^r						
Total	28	5	..	89	140	261
Federal government	27	.	.	8	46	81
Provincial governments	0 ^s	5	.	0 ^s	6	11
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	75	12	87
Higher education	.	.	.	.	71	71
Private non-profit organizations	.	.	.	.	5	5
Foreign	.	.	.	6	1	6
2006						
Total	27	4	..	101	132	264
Federal government	27	.	.	8	40	75
Provincial governments	0 ^s	4	.	0 ^s	2	7
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	89	15	105
Higher education	.	.	.	.	68	68
Private non-profit organizations	.	.	.	.	3	3
Foreign	.	.	.	3	4	7
2005						
Total	28	5	..	86	149	267
Federal government	27	.	.	8	45	80
Provincial governments	0 ^s	5	.	1	1	7
Provincial research organizations	.	.	.	.	.	0
Business enterprise	1	.	.	74	23	97
Higher education	.	.	.	.	76	76
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	3	2	5

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 6-2
Provincial gross domestic expenditures on research and development, in the total sciences — Prince Edward Island

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	15	..	..	9	41	66
Federal government	15	..	.	1	13	30
Provincial governments	0 ^s	..	.	0	1	1
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	.	8	1	9
Higher education	.	.	.	.	24	24
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	0	.	0
2008 Total sciences						
Total	14	..	..	14	37	64
Federal government	13	..	.	0 ^s	12	25
Provincial governments	0 ^s	..	.	0 ^s	1	2
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	.	13	2	14
Higher education	.	.	.	.	22	22
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	1	.	1
2007 Total sciences						
Total	13	..	..	13	34	60
Federal government	13	..	.	1	12	26
Provincial governments	0 ^s	..	.	0 ^s	2	2
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	.	12	1	14
Higher education	.	.	.	.	19	19
Private non-profit organizations	.	.	.	.	0	0
Foreign	.	.	.	0 ^s	.	0 ^s
2006 Total sciences						
Total	26	..	..	12	31	69
Federal government	25	..	.	1	9	35
Provincial governments	0 ^s	..	.	0 ^s	2	2
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	.	11	1	12
Higher education	.	.	.	.	18	18
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	0 ^s	.	0 ^s
2005 Total sciences						
Total	28	..	..	11	27	66
Federal government	27	..	.	1	9	37
Provincial governments	0 ^s	..	.	0 ^s	0 ^s	1
Provincial research organizations	.	.	.	.	.	0
Business enterprise	1	..	.	7	0 ^s	8
Higher education	.	.	.	.	16	16
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	2	.	2

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-3
Provincial gross domestic expenditures on research and development, in the total sciences — Nova Scotia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	67	..	..	89	345	500
Federal government	66	.	..	3	95	164
Provincial governments	0 ^s	..	..	2	8	10
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	76	33	109
Higher education	.	.	.	.	186	186
Private non-profit organizations	.	.	.	.	22	22
Foreign	.	.	..	8	1	9
2008 r Total sciences						
Total	77	..	..	103	343	523
Federal government	76	.	..	3	93	172
Provincial governments	0 ^s	..	..	0 ^s	8	9
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	83	37	121
Higher education	.	.	.	.	179	179
Private non-profit organizations	.	.	.	.	25	25
Foreign	.	.	..	17	0 ^s	18
2007 r Total sciences						
Total	77	..	..	106	327	509
Federal government	75	.	..	2	81	159
Provincial governments	0 ^s	..	..	0 ^s	7	8
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	84	39	125
Higher education	.	.	.	.	170	170
Private non-profit organizations	.	.	.	.	29	29
Foreign	.	.	..	18	0 ^s	18
2006 Total sciences						
Total	73	6	..	106	317	502
Federal government	72	.	..	3	82	158
Provincial governments	0 ^s	6	..	1	5	12
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	81	35	117
Higher education	.	.	.	.	171	171
Private non-profit organizations	.	.	.	.	22	22
Foreign	.	.	..	22	1	22
2005 Total sciences						
Total	66	6	..	97	297	466
Federal government	65	.	..	5	80	150
Provincial governments	0 ^s	6	..	1	6	13
Provincial research organizations	.	.	..	.	.	0
Business enterprise	1	.	..	68	31	99
Higher education	.	.	.	.	158	158
Private non-profit organizations	.	.	.	.	22	22
Foreign	.	.	..	23	0	23

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 6-4
Provincial gross domestic expenditures on research and development, in the total sciences — New Brunswick

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	37	11	2	119	158	327
Federal government	35	.	0 ^s	4	44	84
Provincial governments	0 ^s	11	0 ^s	1	5	18
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	2	113	9	125
Higher education	.	.	.	.	96	96
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	1	2	3
2008 Total sciences						
Total	36	11	2	122	150	321
Federal government	35	.	0 ^s	1	37	78
Provincial governments	0 ^s	11	0 ^s	0 ^s	5	17
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	1	119	4	120
Higher education	.	.	.	.	91	91
Private non-profit organizations	.	.	.	.	10	10
Foreign	.	.	.	2	3	5
2007 Total sciences						
Total	46	10	2	122	144	324
Federal government	45	.	0 ^s	5	35	86
Provincial governments	0 ^s	10	0 ^s	0 ^s	7	17
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	2	114	6	123
Higher education	.	.	.	.	87	87
Private non-profit organizations	.	.	.	.	9	9
Foreign	.	.	.	2	0 ^s	2
2006 Total sciences						
Total	30	2	2	104	135	273
Federal government	29	.	0 ^s	2	34	65
Provincial governments	0 ^s	2	0 ^s	0 ^s	5	8
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	1	99	5	105
Higher education	.	.	.	.	84	84
Private non-profit organizations	.	.	.	.	7	7
Foreign	.	.	.	3	0 ^s	4
2005 Total sciences						
Total	26	2	2	99	130	258
Federal government	25	.	0 ^s	3	35	63
Provincial governments	0 ^s	2	1	0 ^s	4	7
Provincial research organizations	.	.	.	.	.	0 ^s
Business enterprise	0 ^s	.	1	92	5	99
Higher education	.	.	.	.	80	80
Private non-profit organizations	.	.	.	.	7	7
Foreign	.	.	.	4	0 ^s	4

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-5
Provincial gross domestic expenditures on research and development, in the total sciences — Quebec

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	396	88	11	4,581	2,779	7,855
Federal government	383	.	0 ^s	118	740	1,240
Provincial governments	1	88	8	78	248	423
Provincial research organizations	.	.	0	.	.	0
Business enterprise	12	0	3	3,879	253	4,147
Higher education	.	.	.	.	1,277	1,277
Private non-profit organizations	.	.	.	.	239	239
Foreign	.	.	0 ^s	508	23	531
2008 r Total sciences						
Total	413	87	8	4,798	2,786	8,092
Federal government	399	.	0 ^s	164	740	1,303
Provincial governments	2	87	5	54	248	396
Provincial research organizations	.	.	0	.	.	0
Business enterprise	12	0	3	4,051	253	4,319
Higher education	.	.	.	.	1,284	1,284
Private non-profit organizations	.	.	.	.	239	239
Foreign	.	.	0 ^s	530	23	554
2007 r Total sciences						
Total	368	81	9	4,881	2,610	7,949
Federal government	357	.	0 ^s	103	772	1,232
Provincial governments	1	81	4	40	255	381
Provincial research organizations	.	.	0	.	.	0
Business enterprise	10	0	4	3,952	224	4,190
Higher education	.	.	.	.	1,155	1,155
Private non-profit organizations	.	.	.	.	185	185
Foreign	.	.	0 ^s	785	19	804
2006 r Total sciences						
Total	449	76	8	4,830	2,541	7,904
Federal government	441	.	0 ^s	98	678	1,217
Provincial governments	1	76	5	88	229	399
Provincial research organizations	.	.	0	.	.	0
Business enterprise	8	0	2	4,149	227	4,386
Higher education	.	.	.	.	1,200	1,200
Private non-profit organizations	.	.	.	.	179	179
Foreign	.	.	0 ^s	494	28	521
2005 r Total sciences						
Total	451	74	10	4,170	2,556	7,262
Federal government	441	.	0 ^s	100	703	1,244
Provincial governments	1	74	7	45	260	388
Provincial research organizations	.	.	0	.	.	0
Business enterprise	9	0	3	3,540	227	3,780
Higher education	.	.	.	.	1,180	1,180
Private non-profit organizations	.	.	.	.	158	158
Foreign	.	.	0 ^s	484	28	512

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-6
Provincial gross domestic expenditures on research and development, in the total sciences — Ontario

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	1,811	51	..	6,971	4,555	13,386
Federal government	1,757	0	..	128	1,156	3,040
Provincial governments	3	51	..	36	359	448
Provincial research organizations	.	.	..	.	.	..
Business enterprise	51	0	..	5,638	443	6,132
Higher education	.	.	.	.	2,130	2,130
Private non-profit organizations	.	.	.	.	406	406
Foreign	.	.	..	1,170	61	1,231
2008 r Total sciences						
Total	1,668	62	..	7,746	4,580	14,055
Federal government	1,615	0	..	90	1,091	2,796
Provincial governments	7	62	..	8	398	475
Provincial research organizations	.	.	..	.	.	..
Business enterprise	46	0	..	6,553	413	7,012
Higher education	.	.	.	.	2,199	2,199
Private non-profit organizations	.	.	.	.	425	425
Foreign	.	.	..	1,093	54	1,147
2007 r Total sciences						
Total	1,624	57	..	8,065	4,314	14,059
Federal government	1,572	0	..	85	1,093	2,751
Provincial governments	6	57	..	18	351	431
Provincial research organizations	.	.	..	.	.	..
Business enterprise	45	0	..	6,627	432	7,104
Higher education	.	.	.	.	1,983	1,983
Private non-profit organizations	.	.	.	.	399	399
Foreign	.	.	..	1,334	56	1,390
2006 r Total sciences						
Total	1,514	70	..	8,153	4,088	13,825
Federal government	1,470	0	..	97	1,003	2,571
Provincial governments	5	70	..	48	421	544
Provincial research organizations	.	.	..	.	.	..
Business enterprise	39	0	..	6,856	373	7,269
Higher education	.	.	.	.	1,864	1,864
Private non-profit organizations	.	.	.	.	357	357
Foreign	.	.	..	1,152	69	1,221
2005 Total sciences						
Total	1,435	44	..	8,204	3,980	13,664
Federal government	1,383	0	..	141	997	2,521
Provincial governments	7	44	..	26	402	479
Provincial research organizations	.	.	..	.	.	..
Business enterprise	46	0	..	6,722	378	7,145
Higher education	.	.	.	.	1,794	1,794
Private non-profit organizations	.	.	.	.	342	342
Foreign	.	.	..	1,316	67	1,382

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-7
Provincial gross domestic expenditures on research and development, in the total sciences — Manitoba

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	112	8	0	204	328	653
Federal government	111	.	.	1	82	194
Provincial governments	0 ^s	8	0	1	24	33
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	185	16	202
Higher education	.	.	.	.	165	165
Private non-profit organizations	.	.	.	.	33	33
Foreign	.	.	.	18	9	27
2008 Total sciences						
Total	85	10	0	180	312	586
Federal government	84	.	.	5	73	161
Provincial governments	0 ^s	10	0	0	18	28
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	163	15	180
Higher education	.	.	.	.	149	149
Private non-profit organizations	.	.	.	.	53	53
Foreign	.	.	.	12	4	15
2007 Total sciences						
Total	85	6	0	207	302	600
Federal government	84	.	.	2	77	163
Provincial governments	0 ^s	6	0	1	19	26
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	180	20	201
Higher education	.	.	.	.	142	142
Private non-profit organizations	.	.	.	.	37	37
Foreign	.	.	.	25	7	32
2006 Total sciences						
Total	81	6	0	188	287	562
Federal government	80	.	.	1	70	150
Provincial governments	0 ^s	6	0	1	19	26
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	173	21	194
Higher education	.	.	.	.	136	136
Private non-profit organizations	.	.	.	.	38	38
Foreign	.	.	.	14	4	18
2005 Total sciences						
Total	83	4	0	200	294	582
Federal government	81	.	.	4	72	157
Provincial governments	0 ^s	4	0	1	15	21
Provincial research organizations	.	.	0	.	.	0
Business enterprise	2	.	..	179	19	200
Higher education	.	.	.	.	149	149
Private non-profit organizations	.	.	.	.	38	38
Foreign	.	.	.	17	2	18

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-8
Provincial gross domestic expenditures on research and development, in the total sciences — Saskatchewan

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	72	66	18	129	311	596
Federal government	70	.	1	3	102	175
Provincial governments	0 ^s	66	3	3	33	105
Provincial research organizations	.	.	5	.	.	5
Business enterprise	2	.	9	117	10	138
Higher education	.	.	.	.	152	152
Private non-profit organizations	.	.	.	.	14	14
Foreign	.	.	0 ^s	6	1	7
2008 Total sciences						
Total	65	5	12	140	315	536
Federal government	62	.	0 ^s	4	87	153
Provincial governments	0 ^s	5	4	3	45	58
Provincial research organizations	.	.	0	.	.	0
Business enterprise	2	.	7	130	16	155
Higher education	.	.	.	.	146	146
Private non-profit organizations	.	.	.	.	20	20
Foreign	.	.	0 ^s	3	1	5
2007 Total sciences						
Total	63	6	11	194	230	504
Federal government	62	.	0 ^s	6	68	135
Provincial governments	0 ^s	6	4	2	22	33
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	7	168	10	186
Higher education	.	.	.	.	117	117
Private non-profit organizations	.	.	.	.	13	13
Foreign	.	.	0 ^s	19	1	20
2006 Total sciences						
Total	67	4	12	174	216	473
Federal government	66	.	1	4	53	123
Provincial governments	0 ^s	4	4	1	29	38
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	6	154	8	170
Higher education	.	.	.	.	114	114
Private non-profit organizations	.	.	.	.	12	12
Foreign	.	.	0 ^s	15	1	16
2005 Total sciences						
Total	68	4	11	153	218	454
Federal government	67	.	1	4	54	126
Provincial governments	0 ^s	4	4	2	20	30
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	6	134	13	155
Higher education	.	.	.	.	116	116
Private non-profit organizations	.	.	.	.	14	14
Foreign	.	.	0 ^s	13	0 ^s	13

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 6-9
Provincial gross domestic expenditures on research and development, in the total sciences — Alberta

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	108	138	..	1,420	1,185	2,851
Federal government	106	1	..	8	259	375
Provincial governments	0 ^s	89	..	9	246	344
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	47	..	1,317	83	1,449
Higher education	.	.	.	.	508	508
Private non-profit organizations	.	.	.	.	86	86
Foreign	.	..	..	85	4	89
2008 Total sciences						
Total	126	151	..	1,569	1,122	2,968
Federal government	124	2	..	4	267	397
Provincial governments	0 ^s	109	..	17	241	367
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	41	..	1,473	84	1,600
Higher education	.	.	.	.	447	447
Private non-profit organizations	.	.	.	.	76	76
Foreign	.	..	..	75	6	80
2007 Total sciences						
Total	115	141	..	1,449	1,004	2,709
Federal government	114	2	..	7	224	348
Provincial governments	0 ^s	101	..	5	231	337
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	38	..	1,341	81	1,461
Higher education	.	.	.	.	400	400
Private non-profit organizations	.	.	.	.	63	63
Foreign	.	..	..	96	4	101
2006 Total sciences						
Total	133	125	..	1,422	919	2,599
Federal government	132	4	..	12	223	370
Provincial governments	0 ^s	88	..	3	173	264
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	33	..	1,329	77	1,440
Higher education	.	.	.	.	383	383
Private non-profit organizations	.	.	.	.	57	57
Foreign	.	..	..	78	6	84
2005 Total sciences						
Total	130	122	..	1,208	962	2,422
Federal government	128	4	..	21	252	405
Provincial governments	0 ^s	89	..	4	183	275
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	30	..	1,097	63	1,193
Higher education	.	.	.	.	396	396
Private non-profit organizations	.	.	.	.	61	61
Foreign	.	..	..	86	7	93

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 6-10
Provincial gross domestic expenditures on research and development, in the total sciences — British Columbia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	115	25	..	1,502	1,157	2,798
Federal government	111	.	..	39	365	514
Provincial governments	0 ^s	25	..	15	113	154
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,227	57	1,288
Higher education	.	.	.	.	498	498
Private non-profit organizations	.	.	.	.	105	105
Foreign	.	.	.	221	19	240
2008 r Total sciences						
Total	93	33	..	1,643	1,136	2,906
Federal government	90	.	..	26	375	489
Provincial governments	0 ^s	33	..	4	133	171
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,328	51	1,382
Higher education	.	.	.	.	461	461
Private non-profit organizations	.	.	.	.	94	94
Foreign	.	.	.	285	23	307
2007 r Total sciences						
Total	107	30	..	1,616	1,083	2,838
Federal government	104	.	..	36	313	453
Provincial governments	0 ^s	30	..	29	134	194
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,181	46	1,230
Higher education	.	.	.	.	431	431
Private non-profit organizations	.	.	.	.	148	148
Foreign	.	.	.	370	11	381
2006 Total sciences						
Total	91	18	..	1,364	959	2,432
Federal government	89	.	..	34	296	419
Provincial governments	0 ^s	18	..	12	107	137
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	0	..	991	47	1,040
Higher education	.	.	.	.	398	398
Private non-profit organizations	.	.	.	.	99	99
Foreign	.	.	.	326	13	339
2005 Total sciences						
Total	91	18	..	1,402	904	2,414
Federal government	88	.	..	36	294	418
Provincial governments	0 ^s	18	..	11	81	110
Provincial research organizations	.	.	..	.	.	0
Business enterprise	2	0	..	976	44	1,021
Higher education	.	.	.	.	377	377
Private non-profit organizations	.	.	.	.	98	98
Foreign	.	.	.	380	10	390

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 6-11
Provincial gross domestic expenditures on research and development, in the total sciences — Yukon, Northwest Territories and Nunavut

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Total sciences						
Total	5	.	1	5	.	12
Federal government	5	.	1	0	.	6
Provincial governments	0 ^s	.	0	0	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	0	5	.	5
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	0	.	0
2008 Total sciences						
Total	4	.	16	6	.	25
Federal government	3	.	3	0	.	6
Provincial governments	0 ^s	.	1	0	.	1
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	11	5	.	16
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	1	.	1
2007 Total sciences						
Total	4	.	34	15	.	54
Federal government	4	.	1	0 ^s	.	5
Provincial governments	0 ^s	.	1	0 ^s	.	1
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	32	10	.	42
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	5	.	5
2006 Total sciences						
Total	5	.	0^s	20	.	25
Federal government	4	.	..	0 ^s	.	4
Provincial governments	0 ^s	.	..	0 ^s	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	..	14	.	15
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	6	.	6
2005 Total sciences						
Total	9	.	0^s	10	.	19
Federal government	9	.	..	0 ^s	.	9
Provincial governments	0 ^s	.	..	0	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	..	10	.	10
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	0 ^s	.	0 ^s

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 7
National gross domestic expenditures on research and development, in the natural sciences and engineering, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2011 P Natural sciences							
Total	2,327	298	36	15,646	8,959	104	27,370
Federal government	2,252	0	2	360	2,466	23	5,102
Provincial governments	4	298	13	155	852	38	1,360
Provincial research organizations	.	.	6	.	.	.	6
Business enterprise	71	0	15	13,130	904	4	14,124
Higher education	.	.	.	.	3,860	.	3,860
Private non-profit organizations	.	.	.	.	754	34	789
Foreign	.	..	0 ^s	2,001	123	5	2,130
2010 P Natural sciences							
Total	2,615	278	35	14,895	8,870	110	26,802
Federal government	2,529	0	2	337	2,442	24	5,333
Provincial governments	5	278	13	147	843	40	1,325
Provincial research organizations	.	.	6	.	.	.	6
Business enterprise	81	0	14	12,378	895	4	13,373
Higher education	.	.	.	.	3,821	.	3,821
Private non-profit organizations	.	.	.	.	747	36	783
Foreign	.	..	0 ^s	2,033	122	6	2,161
2009 Natural sciences							
Total	2,546	349	33	15,110	8,765	117	26,920
Federal government	2,468	1	2	312	2,413	25	5,221
Provincial governments	5	300	12	145	833	43	1,338
Provincial research organizations	.	.	5	.	.	.	5
Business enterprise	73	47	14	12,626	884	5	13,649
Higher education	.	.	.	.	3,776	.	3,776
Private non-profit organizations	.	.	.	.	738	38	776
Foreign	.	..	0 ^s	2,027	121	6	2,155
2008 r Natural sciences							
Total	2,388	327	38	16,409	8,715	169	28,047
Federal government	2,308	2	3	298	2,342	49	5,000
Provincial governments	10	284	11	88	884	34	1,311
Provincial research organizations	.	.	0	.	.	.	0
Business enterprise	71	40	22	13,996	856	14	15,003
Higher education	.	.	.	.	3,743	.	3,743
Private non-profit organizations	.	.	.	.	775	58	833
Foreign	.	..	1	2,026	114	14	2,156
2007 r Natural sciences							
Total	2,360	301	57	16,756	8,125	151	27,751
Federal government	2,287	2	2	253	2,272	43	4,859
Provincial governments	9	261	10	97	827	22	1,225
Provincial research organizations	.	.	0	.	.	.	0
Business enterprise	64	38	44	13,744	834	13	14,737
Higher education	.	.	.	.	3,368	.	3,368
Private non-profit organizations	.	.	.	.	725	57	782
Foreign	.	..	1	2,663	99	16	2,779
2006 r Natural sciences							
Total	2,340	280	22	16,474	7,714	137	26,967
Federal government	2,278	4	1	260	2,086	37	4,667
Provincial governments	7	243	10	155	794	26	1,235
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	55	33	10	13,947	775	21	14,841
Higher education	.	.	.	.	3,302	.	3,302
Private non-profit organizations	.	.	.	.	631	40	671
Foreign	.	..	0 ^s	2,113	126	13	2,252

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 7 – continued

National gross domestic expenditures on research and development, in the natural sciences and engineering, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2005 † Natural sciences							
Total	2,289	252	23	15,638	7,627	139	25,968
Federal government	2,217	4	1	323	2,126	40	4,710
Provincial governments	9	219	12	90	779	26	1,134
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	64	30	10	12,899	774	21	13,797
Higher education	.	.	.	.	3,229	.	3,229
Private non-profit organizations	.	.	.	.	603	35	638
Foreign	.	..	0 ^s	2,327	116	17	2,460
2004 † Natural sciences							
Total	1,965	241	25	15,144	7,280	98	24,753
Federal government	1,909	2	1	271	1,960	11	4,154
Provincial governments	7	212	14	59	831	14	1,137
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	49	26	10	12,535	728	12	13,360
Higher education	.	.	.	.	3,110	.	3,110
Private non-profit organizations	.	.	.	.	556	48	604
Foreign	.	..	0 ^s	2,280	96	13	2,388
2003 † Natural sciences							
Total	1,963	229	24	14,094	6,544	87	22,942
Federal government	1,907	2	1	299	1,846	14	4,070
Provincial governments	8	202	14	70	814	15	1,124
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	48	25	9	11,651	654	13	12,400
Higher education	.	.	.	.	2,669	.	2,669
Private non-profit organizations	.	.	.	.	485	37	523
Foreign	.	..	0 ^s	2,073	76	8	2,158
2002 Natural sciences							
Total	2,073	236	26	13,545	6,041	59	21,979
Federal government	2,007	2	1	300	1,588	5	3,904
Provincial governments	11	205	15	53	663	19	966
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	55	29	9	11,370	619	11	12,093
Higher education	.	.	.	.	2,577	.	2,577
Private non-profit organizations	.	.	.	.	493	23	516
Foreign	.	..	1	1,822	101	1	1,924
2001 Natural sciences							
Total	2,010	234	23	14,266	5,150	59	21,742
Federal government	1,951	0	1	457	1,356	6	3,771
Provincial governments	6	203	12	51	570	18	860
Provincial research organizations	.	.	0 ^s	.	.	.	0 ^s
Business enterprise	53	31	9	10,930	578	9	11,610
Higher education	.	.	.	.	2,150	.	2,150
Private non-profit organizations	.	.	.	.	412	25	436
Foreign	.	..	1	2,828	84	1	2,915

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-1
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— Newfoundland and Labrador

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	25	..	..	81	117	223
Federal government	24	.	.	8	27	58
Provincial governments	0 ^s	..	.	1	3	4
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	63	23	87
Higher education	.	.	.	.	61	61
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	10	1	11
2008^r Natural sciences						
Total	19	5	..	88	109	220
Federal government	19	.	.	1	28	48
Provincial governments	0 ^s	5	.	0 ^s	6	11
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	.	.	78	17	96
Higher education	.	.	.	.	54	54
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	8	1	10
2007^r Natural sciences						
Total	28	4	..	89	104	224
Federal government	27	.	.	8	35	70
Provincial governments	0 ^s	4	.	0 ^s	5	9
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	75	12	87
Higher education	.	.	.	.	50	50
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	6	1	6
2006 Natural sciences						
Total	27	4	..	101	101	233
Federal government	27	.	.	8	31	65
Provincial governments	0 ^s	4	.	0 ^s	2	6
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	.	89	15	105
Higher education	.	.	.	.	49	49
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	3	4	7
2005 Natural sciences						
Total	28	5	..	86	117	235
Federal government	27	.	.	8	35	71
Provincial governments	0 ^s	5	.	1	1	7
Provincial research organizations	.	.	.	.	.	0
Business enterprise	1	.	.	74	23	97
Higher education	.	.	.	.	55	55
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	3	2	5

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-2
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— Prince Edward Island

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	15	..	..	9	29	53
Federal government	15	..	..	1	9	26
Provincial governments	0 ^s	..	..	0	1	1
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	..	8	1	9
Higher education	.	.	.	.	17	17
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	0	.	0
2008¹ Natural sciences						
Total	14	..	..	14	25	52
Federal government	13	..	..	0 ^s	8	21
Provincial governments	0 ^s	..	..	0 ^s	1	2
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	..	13	2	14
Higher education	.	.	.	.	14	14
Private non-profit organizations	.	.	.	.	0 ^s	0 ^s
Foreign	.	.	.	1	.	1
2007 Natural sciences						
Total	13	..	..	13	25	51
Federal government	13	..	..	1	9	23
Provincial governments	0 ^s	..	..	0 ^s	1	1
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	..	12	1	14
Higher education	.	.	.	.	13	13
Private non-profit organizations	.	.	.	.	0	0
Foreign	.	.	.	0 ^s	.	0 ^s
2006 Natural sciences						
Total	26	..	..	12	22	60
Federal government	25	..	..	1	7	33
Provincial governments	0 ^s	..	..	0 ^s	1	1
Provincial research organizations	.	.	.	.	.	..
Business enterprise	0 ^s	..	..	11	1	12
Higher education	.	.	.	.	13	13
Private non-profit organizations	.	.	.	.	1	1
Foreign	.	.	.	0 ^s	.	0 ^s
2005 Natural sciences						
Total	28	..	..	11	20	58
Federal government	27	..	..	1	7	36
Provincial governments	0 ^s	..	..	0 ^s	0 ^s	1
Provincial research organizations	.	.	.	.	.	0
Business enterprise	1	..	..	7	0 ^s	8
Higher education	.	.	.	.	12	12
Private non-profit organizations	.	.	.	.	0 ^s	0 ^s
Foreign	.	.	.	2	.	2

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-3
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering — Nova Scotia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	67	..	..	89	259	415
Federal government	66	.	..	3	76	145
Provincial governments	.	..	..	2	7	8
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	76	32	109
Higher education	.	.	.	.	123	123
Private non-profit organizations	.	.	.	.	21	21
Foreign	.	.	..	8	1	9
2008^r Natural sciences						
Total	77	..	..	103	262	442
Federal government	76	.	..	3	74	153
Provincial governments	.	..	..	0 ^s	6	7
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	83	37	121
Higher education	.	.	.	.	120	120
Private non-profit organizations	.	.	.	.	23	23
Foreign	.	.	..	17	0 ^s	18
2007^r Natural sciences						
Total	77	..	..	106	250	432
Federal government	75	.	..	2	65	143
Provincial governments	.	..	..	0 ^s	6	7
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	84	38	124
Higher education	.	.	.	.	114	114
Private non-profit organizations	.	.	.	.	26	26
Foreign	.	.	..	18	0 ^s	18
2006 Natural sciences						
Total	73	6	..	106	246	431
Federal government	72	.	..	3	68	144
Provincial governments	.	6	..	1	4	11
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	.	..	81	35	116
Higher education	.	.	.	.	117	117
Private non-profit organizations	.	.	.	.	21	21
Foreign	.	.	..	22	1	22
2005 Natural sciences						
Total	66	6	..	97	226	394
Federal government	65	.	..	5	64	134
Provincial governments	.	6	..	1	5	11
Provincial research organizations	.	.	..	.	.	0
Business enterprise	1	.	..	68	30	99
Higher education	.	.	.	.	105	105
Private non-profit organizations	.	.	.	.	21	21
Foreign	.	.	..	23	0 ^s	23

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-4
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— New Brunswick

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	37	7	2	119	108	273
Federal government	35	.	0 ^s	4	33	72
Provincial governments	0 ^s	7	0 ^s	1	4	13
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	2	113	9	125
Higher education	.	.	.	.	58	58
Private non-profit organizations	.	.	.	.	2	2
Foreign	.	.	.	1	2	3
2008[†] Natural sciences						
Total	36	9	2	122	103	272
Federal government	35	.	0 ^s	1	28	68
Provincial governments	0 ^s	9	0 ^s	0 ^s	4	13
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	1	119	4	120
Higher education	.	.	.	.	54	54
Private non-profit organizations	.	.	.	.	10	10
Foreign	.	.	.	2	3	5
2007[†] Natural sciences						
Total	46	8	2	122	99	277
Federal government	45	.	0 ^s	5	26	76
Provincial governments	0 ^s	8	0 ^s	0 ^s	6	14
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	2	114	6	123
Higher education	.	.	.	.	52	52
Private non-profit organizations	.	.	.	.	9	9
Foreign	.	.	.	2	0 ^s	2
2006 Natural sciences						
Total	30	2	2	104	91	228
Federal government	29	.	0 ^s	2	26	57
Provincial governments	0 ^s	2	0 ^s	0 ^s	4	6
Provincial research organizations	.	.	.	.	.	..
Business enterprise	1	.	1	99	5	105
Higher education	.	.	.	.	49	49
Private non-profit organizations	.	.	.	.	7	7
Foreign	.	.	.	3	0 ^s	4
2005 Natural sciences						
Total	26	2	2	99	84	213
Federal government	25	.	0 ^s	3	24	53
Provincial governments	0 ^s	2	1	0 ^s	3	6
Provincial research organizations	.	.	.	.	.	0 ^s
Business enterprise	0 ^s	.	1	92	5	99
Higher education	.	.	.	.	46	46
Private non-profit organizations	.	.	.	.	6	6
Foreign	.	.	.	4	0 ^s	4

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-5
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering — Quebec

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	380	65	11	4,581	2,233	7,270
Federal government	368	.	0 ^s	118	625	1,111
Provincial governments	1	65	8	78	198	350
Provincial research organizations	.	.	0	.	.	0
Business enterprise	12	0	3	3,879	230	4,124
Higher education	.	.	.	.	971	971
Private non-profit organizations	.	.	.	.	185	185
Foreign	.	.	0 ^s	508	23	531
2008^r Natural sciences						
Total	399	66	8	4,798	2,258	7,530
Federal government	386	.	0 ^s	164	625	1,175
Provincial governments	2	66	5	54	198	326
Provincial research organizations	.	.	0	.	.	0
Business enterprise	12	0	3	4,051	239	4,305
Higher education	.	.	.	.	983	983
Private non-profit organizations	.	.	.	.	189	189
Foreign	.	.	0 ^s	530	23	554
2007^r Natural sciences						
Total	358	59	9	4,881	2,093	7,400
Federal government	347	.	0 ^s	103	645	1,095
Provincial governments	1	59	4	40	204	308
Provincial research organizations	.	.	0	.	.	0
Business enterprise	10	0	4	3,952	210	4,176
Higher education	.	.	.	.	872	872
Private non-profit organizations	.	.	.	.	143	143
Foreign	.	.	0 ^s	785	19	804
2006^r Natural sciences						
Total	439	54	8	4,830	2,059	7,390
Federal government	431	.	0 ^s	98	580	1,109
Provincial governments	1	54	5	88	184	332
Provincial research organizations	.	.	0	.	.	0
Business enterprise	8	0	2	4,149	213	4,373
Higher education	.	.	.	.	917	917
Private non-profit organizations	.	.	.	.	138	138
Foreign	.	.	0 ^s	494	28	521
2005^r Natural sciences						
Total	439	54	10	4,170	2,064	6,738
Federal government	429	.	0 ^s	100	603	1,133
Provincial governments	1	54	7	45	208	315
Provincial research organizations	.	.	0	.	.	0
Business enterprise	9	0	3	3,540	214	3,766
Higher education	.	.	.	.	890	890
Private non-profit organizations	.	.	.	.	121	121
Foreign	.	.	0 ^s	484	28	512

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 8-6
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering — Ontario

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	1,612	46	..	6,971	3,643	12,270
Federal government	1,558	0	..	128	970	2,655
Provincial governments	3	46	..	36	287	371
Provincial research organizations	.	.	..	.	.	..
Business enterprise	51	0	..	5,638	426	6,115
Higher education	.	.	.	.	1,560	1,560
Private non-profit organizations	.	.	.	.	339	339
Foreign	.	.	..	1,170	61	1,231
2008 r Natural sciences						
Total	1,473	56	..	7,746	3,667	12,941
Federal government	1,420	0	..	90	916	2,427
Provincial governments	7	56	..	8	318	390
Provincial research organizations	.	.	..	.	.	..
Business enterprise	46	0	..	6,553	395	6,994
Higher education	.	.	.	.	1,628	1,628
Private non-profit organizations	.	.	.	.	355	355
Foreign	.	.	..	1,093	54	1,147
2007 r Natural sciences						
Total	1,464	52	..	8,065	3,473	13,054
Federal government	1,412	0	..	85	923	2,420
Provincial governments	6	52	..	18	281	357
Provincial research organizations	.	.	..	.	.	..
Business enterprise	45	0	..	6,627	414	7,086
Higher education	.	.	.	.	1,465	1,465
Private non-profit organizations	.	.	.	.	335	335
Foreign	.	.	..	1,334	56	1,390
2006 r Natural sciences						
Total	1,368	66	..	8,153	3,289	12,876
Federal government	1,324	0	..	97	834	2,255
Provincial governments	5	66	..	48	337	456
Provincial research organizations	.	.	..	.	.	..
Business enterprise	39	0	..	6,856	358	7,253
Higher education	.	.	.	.	1,393	1,393
Private non-profit organizations	.	.	.	.	299	299
Foreign	.	.	..	1,152	69	1,221
2005 Natural sciences						
Total	1,322	41	..	8,204	3,219	12,786
Federal government	1,270	0	..	141	831	2,242
Provincial governments	7	41	..	26	322	395
Provincial research organizations	.	.	..	.	.	..
Business enterprise	46	0	..	6,722	365	7,133
Higher education	.	.	.	.	1,352	1,352
Private non-profit organizations	.	.	.	.	282	282
Foreign	.	.	..	1,316	67	1,382

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Table 8-7
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— Manitoba

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	112	6	0	204	251	573
Federal government	111	.	.	1	67	179
Provincial governments	0 ^s	6	0	1	19	26
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	185	16	201
Higher education	.	.	.	.	114	114
Private non-profit organizations	.	.	.	.	27	27
Foreign	.	.	.	18	9	27
2008^r Natural sciences						
Total	85	4	0	180	241	510
Federal government	84	.	.	5	61	149
Provincial governments	0 ^s	4	0	0 ^s	14	19
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	163	15	179
Higher education	.	.	.	.	103	103
Private non-profit organizations	.	.	.	.	44	44
Foreign	.	.	.	12	4	15
2007^r Natural sciences						
Total	85	5	0	207	236	532
Federal government	84	.	.	2	65	150
Provincial governments	0 ^s	5	0	1	15	21
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	180	19	200
Higher education	.	.	.	.	99	99
Private non-profit organizations	.	.	.	.	31	31
Foreign	.	.	.	25	7	32
2006 Natural sciences						
Total	81	5	0	188	224	498
Federal government	80	.	.	1	58	138
Provincial governments	0 ^s	5	0	1	15	21
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	..	173	20	194
Higher education	.	.	.	.	95	95
Private non-profit organizations	.	.	.	.	32	32
Foreign	.	.	.	14	4	18
2005 Natural sciences						
Total	83	4	0	200	227	514
Federal government	81	.	.	4	59	144
Provincial governments	0 ^s	4	0	1	12	17
Provincial research organizations	.	.	0	.	.	0
Business enterprise	2	.	..	179	18	199
Higher education	.	.	.	.	105	105
Private non-profit organizations	.	.	.	.	32	32
Foreign	.	.	.	17	2	18

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 8-8
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— Saskatchewan

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	72	64	18	129	253	536
Federal government	70	.	1	3	87	160
Provincial governments	0 ^s	64	3	3	26	96
Provincial research organizations	.	.	5	.	.	5
Business enterprise	2	.	9	117	10	138
Higher education	.	.	.	.	115	115
Private non-profit organizations	.	.	.	.	13	13
Foreign	.	.	0 ^s	6	1	7
2008^r Natural sciences						
Total	65	4	12	140	253	474
Federal government	62	.	0 ^s	4	70	136
Provincial governments	0 ^s	4	4	3	36	48
Provincial research organizations	.	.	0	.	.	0
Business enterprise	2	.	7	130	16	155
Higher education	.	.	.	.	110	110
Private non-profit organizations	.	.	.	.	20	20
Foreign	.	.	0 ^s	3	1	5
2007^r Natural sciences						
Total	63	5	11	194	188	461
Federal government	62	.	0 ^s	6	59	127
Provincial governments	0 ^s	5	4	2	18	28
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	7	168	9	186
Higher education	.	.	.	.	88	88
Private non-profit organizations	.	.	.	.	13	13
Foreign	.	.	0 ^s	19	1	20
2006 Natural sciences						
Total	67	4	12	174	174	431
Federal government	66	.	1	4	46	116
Provincial governments	0 ^s	4	4	1	23	32
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	6	154	8	169
Higher education	.	.	.	.	85	85
Private non-profit organizations	.	.	.	.	11	11
Foreign	.	.	0 ^s	15	1	16
2005 Natural sciences						
Total	68	4	11	153	176	412
Federal government	67	.	1	4	47	119
Provincial governments	0 ^s	4	4	2	16	26
Provincial research organizations	.	.	0	.	.	0
Business enterprise	1	.	6	134	13	155
Higher education	.	.	.	.	86	86
Private non-profit organizations	.	.	.	.	14	14
Foreign	.	.	0 ^s	13	0 ^s	13

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-9
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering — Alberta

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	108	137	..	1,420	966	2,630
Federal government	106	1	..	8	220	336
Provincial governments	0 ^s	88	..	9	197	294
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	47	..	1,317	81	1,448
Higher education	.	.	.	.	393	393
Private non-profit organizations	.	.	.	.	71	71
Foreign	.	..	..	85	4	89
2008^r Natural sciences						
Total	126	150	..	1,569	907	2,752
Federal government	124	2	..	4	221	350
Provincial governments	0 ^s	108	..	17	193	319
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	40	..	1,473	82	1,597
Higher education	.	.	.	.	344	344
Private non-profit organizations	.	.	.	.	63	63
Foreign	.	..	..	75	6	80
2007^r Natural sciences						
Total	115	139	..	1,449	809	2,512
Federal government	114	2	..	7	183	306
Provincial governments	0 ^s	99	..	5	185	288
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	38	..	1,341	78	1,459
Higher education	.	.	.	.	306	306
Private non-profit organizations	.	.	.	.	53	53
Foreign	.	..	..	96	4	101
2006 Natural sciences						
Total	133	124	..	1,422	758	2,438
Federal government	132	4	..	12	189	337
Provincial governments	0 ^s	87	..	3	138	229
Provincial research organizations	.	.	..	.	.	..
Business enterprise	1	33	..	1,329	75	1,438
Higher education	.	.	.	.	302	302
Private non-profit organizations	.	.	.	.	48	48
Foreign	.	..	..	78	6	84
2005 Natural sciences						
Total	130	122	..	1,208	786	2,247
Federal government	128	4	..	21	209	362
Provincial governments	0 ^s	89	..	4	146	239
Provincial research organizations	.	.	..	.	.	0
Business enterprise	2	30	..	1,097	62	1,192
Higher education	.	.	.	.	311	311
Private non-profit organizations	.	.	.	.	51	51
Foreign	.	..	..	86	7	93

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-10
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering
— British Columbia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	115	24	..	1,502	905	2,545
Federal government	111	.	..	39	299	448
Provincial governments	0 ^s	24	..	15	91	130
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,227	56	1,287
Higher education	.	.	.	.	364	364
Private non-profit organizations	.	.	.	.	77	77
Foreign	.	.	.	221	19	240
2008^r Natural sciences						
Total	93	32	..	1,643	891	2,660
Federal government	90	.	..	26	312	425
Provincial governments	0 ^s	32	..	4	107	144
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,328	50	1,381
Higher education	.	.	.	.	332	332
Private non-profit organizations	.	.	.	.	68	68
Foreign	.	.	.	285	23	307
2007^r Natural sciences						
Total	107	30	..	1,616	848	2,601
Federal government	104	.	..	36	262	402
Provincial governments	0 ^s	30	..	29	107	166
Provincial research organizations	.	.	..	.	.	..
Business enterprise	3	0	..	1,181	46	1,230
Higher education	.	.	.	.	310	310
Private non-profit organizations	.	.	.	.	113	113
Foreign	.	.	.	370	11	381
2006 Natural sciences						
Total	91	15	..	1,364	749	2,219
Federal government	89	.	..	34	247	370
Provincial governments	0 ^s	15	..	12	85	113
Provincial research organizations	.	.	..	.	.	..
Business enterprise	2	0	..	991	46	1,040
Higher education	.	.	.	.	284	284
Private non-profit organizations	.	.	.	.	73	73
Foreign	.	.	.	326	13	339
2005 Natural sciences						
Total	91	15	..	1,402	707	2,215
Federal government	88	.	..	36	245	369
Provincial governments	0 ^s	15	..	11	65	92
Provincial research organizations	.	.	..	.	.	0
Business enterprise	2	0	..	976	43	1,021
Higher education	.	.	.	.	269	269
Private non-profit organizations	.	.	.	.	75	75
Foreign	.	.	.	380	10	390

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 8-11
Provincial gross domestic expenditures on research and development, in the natural sciences and engineering — Yukon, Northwest Territories and Nunavut

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Natural sciences						
Total	5	.	1	5	.	12
Federal government	5	.	1	0	.	6
Provincial governments	0 ^s	.	0	0	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	0	5	.	5
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	0	.	0
2008¹ Natural sciences						
Total	4	.	16	6	.	25
Federal government	3	.	3	0	.	6
Provincial governments	0 ^s	.	1	0	.	1
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	11	5	.	16
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	1	.	1
2007 Natural sciences						
Total	4	.	34	15	.	54
Federal government	4	.	1	0 ^s	.	5
Provincial governments	0 ^s	.	1	0 ^s	.	1
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	32	10	.	42
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	5	.	5
2006 Natural sciences						
Total	5	.	0^s	20	.	25
Federal government	4	.	..	0 ^s	.	4
Provincial governments	0 ^s	.	..	0 ^s	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	..	14	.	15
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	6	.	6
2005 Natural sciences						
Total	9	.	0^s	10	.	19
Federal government	9	.	..	0 ^s	.	9
Provincial governments	0 ^s	.	..	0	.	0 ^s
Provincial research organizations	.	.	.	.	.	.
Business enterprise	.	.	..	10	.	10
Higher education	.	.	.	.	.	.
Private non-profit organizations	.	.	.	.	.	.
Foreign	.	.	.	0 ^s	.	0 ^s

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 9
National gross domestic expenditures on research and development, in the social sciences and humanities, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2011 P Social sciences							
Total	220	38	..	..	2,298	5	2,561
Federal government	220	..	..	..	487	1	708
Provincial governments	0	38	..	..	213	1	254
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	46	0	46
Higher education	..	..	..	..	1,375	..	1,375
Private non-profit organizations	..	..	..	..	178	2	180
Foreign	..	..	..	..	..	1	1
2010 P Social sciences							
Total	224	33	..	..	2,275	5	2,537
Federal government	224	..	..	..	482	1	707
Provincial governments	0	33	..	..	211	1	245
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	46	0	46
Higher education	..	..	..	..	1,361	..	1,361
Private non-profit organizations	..	..	..	..	176	2	178
Foreign	..	..	..	..	..	1	1
2009 Social sciences							
Total	216	38	..	..	2,248	8	2,510
Federal government	216	..	..	..	476	2	694
Provincial governments	0	38	..	..	208	1	247
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	45	0	45
Higher education	..	..	..	..	1,345	..	1,345
Private non-profit organizations	..	..	..	..	174	4	178
Foreign	..	..	..	..	..	1	1
2008 P Social sciences							
Total	211	37	..	..	2,212	10	2,470
Federal government	211	..	..	..	469	2	682
Provincial governments	0	37	..	..	221	1	259
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	37	0 ^s	37
Higher education	..	..	..	..	1,311	..	1,311
Private non-profit organizations	..	..	..	..	174	8	182
Foreign	..	..	..	..	..	0	0
2007 P Social sciences							
Total	172	34	..	..	2,062	13	2,281
Federal government	172	..	..	..	448	1	621
Provincial governments	0	34	..	..	207	2	242
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	37	0 ^s	37
Higher education	..	..	..	..	1,206	..	1,206
Private non-profit organizations	..	..	..	..	165	10	175
Foreign	..	..	..	..	..	0 ^s	0 ^s
2006 Social sciences							
Total	156	31	..	..	1,911	15	2,113
Federal government	156	..	..	..	401	1	559
Provincial governments	0	31	..	..	199	2	232
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	33	0 ^s	33
Higher education	..	..	..	..	1,133	..	1,133
Private non-profit organizations	..	..	..	..	145	11	156
Foreign	..	..	..	..	..	1	1

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 9 – continued

National gross domestic expenditures on research and development, in the social sciences and humanities, Canada

Funding sector	Performing sector						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations	
millions of dollars							
2005 Social sciences							
Total	124	28	..	..	1,891	10	2,054
Federal government	124	..	..	..	416	2	543
Provincial governments	0	28	..	..	195	2	224
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	30	1	30
Higher education	..	..	..	..	1,111	..	1,111
Private non-profit organizations	..	..	..	..	139	7	146
Foreign	..	..	..	..	..	0 ^s	0 ^s
2004 Social sciences							
Total	118	24	..	..	1,778	5	1,926
Federal government	118	..	..	..	377	1	497
Provincial governments	0	24	..	..	208	1	233
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	27	1	28
Higher education	..	..	..	..	1,037	..	1,037
Private non-profit organizations	..	..	..	..	129	2	131
Foreign	..	..	..	..	..	0 ^s	0 ^s
2003 Social sciences							
Total	120	24	..	..	1,599	5	1,748
Federal government	120	..	..	..	336	1	457
Provincial governments	0	24	..	..	204	2	230
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	25	1	26
Higher education	..	..	..	..	920	..	920
Private non-profit organizations	..	..	..	..	114	1	115
Foreign	..	..	..	..	..	0 ^s	0 ^s
2002 Social sciences							
Total	117	21	..	..	1,414	4	1,556
Federal government	117	..	..	..	229	1	346
Provincial governments	0	21	..	..	165	1	187
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	24	1	24
Higher education	..	..	..	..	885	..	885
Private non-profit organizations	..	..	..	..	111	1	112
Foreign	..	..	..	..	..	0 ^s	0 ^s
2001 Social sciences							
Total	93	19	..	..	1,274	4	1,390
Federal government	93	..	..	..	231	0 ^s	324
Provincial governments	0	19	..	..	142	2	163
Provincial research organizations	..	..	..	..	..	..	..
Business enterprise	..	..	..	..	25	1	26
Higher education	..	..	..	..	778	..	778
Private non-profit organizations	..	..	..	..	98	1	99
Foreign	..	..	..	..	..	0 ^s	0 ^s

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-1
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— Newfoundland and Labrador

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	37	37
Federal government	8	8
Provincial governments	1	1
Provincial research organizations
Business enterprise
Higher education	25	25
Private non-profit organizations	3	3
Foreign
2008 Social sciences						
Total	..	0 ^s	..	..	37	37
Federal government	8	8
Provincial governments	..	0 ^s	..	..	2	2
Provincial research organizations
Business enterprise
Higher education	23	23
Private non-profit organizations	4	4
Foreign
2007 Social sciences						
Total	..	0 ^s	..	..	36	37
Federal government	10	10
Provincial governments	..	0 ^s	..	..	1	2
Provincial research organizations
Business enterprise
Higher education	21	21
Private non-profit organizations	4	4
Foreign
2006 Social sciences						
Total	..	0 ^s	..	..	31	31
Federal government	9	9
Provincial governments	..	0 ^s	..	..	0 ^s	1
Provincial research organizations
Business enterprise
Higher education	19	19
Private non-profit organizations	2	2
Foreign
2005 Social sciences						
Total	..	0	..	..	32	32
Federal government	10	10
Provincial governments	..	0	..	..	0 ^s	0 ^s
Provincial research organizations
Business enterprise
Higher education	21	21
Private non-profit organizations	1	1
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-2
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— Prince Edward Island

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	12	12
Federal government	4	4
Provincial governments
Provincial research organizations
Business enterprise
Higher education	7	7
Private non-profit organizations	1	1
Foreign
2008 Social sciences						
Total	12	12
Federal government	4	4
Provincial governments
Provincial research organizations
Business enterprise
Higher education	7	7
Private non-profit organizations	0 ^s	0 ^s
Foreign
2007 Social sciences						
Total	9	9
Federal government	3	3
Provincial governments
Provincial research organizations
Business enterprise
Higher education	5	5
Private non-profit organizations	0	0
Foreign
2006 Social sciences						
Total	9	9
Federal government	2	2
Provincial governments
Provincial research organizations
Business enterprise
Higher education	5	5
Private non-profit organizations	1	1
Foreign
2005 Social sciences						
Total	7	7
Federal government	2	2
Provincial governments
Provincial research organizations
Business enterprise
Higher education	5	5
Private non-profit organizations	0 ^s	0 ^s
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-3
Provincial gross domestic expenditures on research and development, in the social sciences and humanities — Nova Scotia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	85	85
Federal government	19	19
Provincial governments	2	2
Provincial research organizations
Business enterprise	1	1
Higher education	63	63
Private non-profit organizations	1	1
Foreign
2008 r Social sciences						
Total	81	81
Federal government	19	19
Provincial governments	2	2
Provincial research organizations
Business enterprise	0 ^s	0 ^s
Higher education	59	59
Private non-profit organizations	1	1
Foreign
2007 r Social sciences						
Total	77	77
Federal government	16	16
Provincial governments	1	1
Provincial research organizations
Business enterprise	1	1
Higher education	56	56
Private non-profit organizations	2	3
Foreign
2006 Social sciences						
Total	71	71
Federal government	14	14
Provincial governments	1	1
Provincial research organizations
Business enterprise	0 ^s	0 ^s
Higher education	54	54
Private non-profit organizations	1	1
Foreign
2005 Social sciences						
Total	71	71
Federal government	16	16
Provincial governments	1	1
Provincial research organizations
Business enterprise	0 ^s	0 ^s
Higher education	53	53
Private non-profit organizations	1	1
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-4
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— New Brunswick

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	..	4	..	..	50	55
Federal government	10	11
Provincial governments	..	4	..	..	1	5
Provincial research organizations
Business enterprise
Higher education	38	38
Private non-profit organizations
Foreign
2008 Social sciences						
Total	..	3	..	..	47	51
Federal government	9	10
Provincial governments	..	3	..	..	1	4
Provincial research organizations
Business enterprise
Higher education	37	37
Private non-profit organizations
Foreign
2007 Social sciences						
Total	..	2	..	..	45	47
Federal government	8	8
Provincial governments	..	2	..	..	1	3
Provincial research organizations
Business enterprise
Higher education	35	35
Private non-profit organizations
Foreign
2006 Social sciences						
Total	..	0	..	..	44	44
Federal government	8	8
Provincial governments	..	0	..	..	1	1
Provincial research organizations
Business enterprise
Higher education	35	35
Private non-profit organizations
Foreign
2005 Social sciences						
Total	..	0	..	..	46	46
Federal government	11	11
Provincial governments	..	0	..	..	1	1
Provincial research organizations
Business enterprise
Higher education	34	34
Private non-profit organizations
Foreign

Note(s): CComponents may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 10-5
Provincial gross domestic expenditures on research and development, in the social sciences and humanities — Quebec

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	16	22	..	..	546	584
Federal government	16	..	..	..	114	130
Provincial governments	..	22	..	..	50	72
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	23	23
Higher education	..	..	..	..	306	306
Private non-profit organizations	..	..	..	..	53	53
Foreign	..	..	..	..	..	..
2008 † Social sciences						
Total	14	20	..	..	528	562
Federal government	14	..	..	..	114	128
Provincial governments	..	20	..	..	50	70
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	14	14
Higher education	..	..	..	..	300	300
Private non-profit organizations	..	..	..	..	50	50
Foreign	..	..	..	..	..	..
2007 † Social sciences						
Total	10	22	..	..	517	549
Federal government	10	..	..	..	126	136
Provincial governments	..	22	..	..	51	73
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	14	14
Higher education	..	..	..	..	283	283
Private non-profit organizations	..	..	..	..	42	42
Foreign	..	..	..	..	..	..
2006 † Social sciences						
Total	10	22	..	..	481	514
Federal government	10	..	..	..	98	108
Provincial governments	..	22	..	..	46	69
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	13	13
Higher education	..	..	..	..	284	284
Private non-profit organizations	..	..	..	..	40	40
Foreign	..	..	..	..	..	..
2005 Social sciences						
Total	12	21	..	..	492	525
Federal government	12	..	..	..	100	112
Provincial governments	..	21	..	..	52	74
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	14	14
Higher education	..	..	..	..	290	290
Private non-profit organizations	..	..	..	..	37	37
Foreign	..	..	..	..	..	..

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Table 10-6
Provincial gross domestic expenditures on research and development, in the social sciences and humanities — Ontario

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	199	6	..	..	912	1,116
Federal government	199	..	..	..	186	385
Provincial governments	..	6	..	..	72	77
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	17	17
Higher education	..	..	..	..	570	570
Private non-profit organizations	..	..	..	..	67	67
Foreign	..	..	..	..	..	..
2008 Social sciences						
Total	195	6	..	..	914	1,114
Federal government	195	..	..	..	175	370
Provincial governments	..	6	..	..	80	85
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	18	18
Higher education	..	..	..	..	571	571
Private non-profit organizations	..	..	..	..	70	70
Foreign	..	..	..	..	..	..
2007 Social sciences						
Total	160	5	..	..	841	1,006
Federal government	160	..	..	..	170	330
Provincial governments	..	5	..	..	70	75
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	18	18
Higher education	..	..	..	..	518	518
Private non-profit organizations	..	..	..	..	64	64
Foreign	..	..	..	..	..	..
2006 Social sciences						
Total	146	4	..	..	799	949
Federal government	146	..	..	..	170	315
Provincial governments	..	4	..	..	84	88
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	16	16
Higher education	..	..	..	..	471	471
Private non-profit organizations	..	..	..	..	58	58
Foreign	..	..	..	..	..	..
2005 Social sciences						
Total	113	4	..	..	761	878
Federal government	113	..	..	..	166	279
Provincial governments	..	4	..	..	80	84
Provincial research organizations	..	..	..	..	..	..
Business enterprise	..	..	..	..	13	13
Higher education	..	..	..	..	442	442
Private non-profit organizations	..	..	..	..	60	60
Foreign	..	..	..	..	..	..

Note(s): Components may not add to totals due to rounding. Quebec and Ontario figures include federal government expenditures on research and development performed in the National Capital Region. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. Data for the National Capital Region (NCR) are now available in Appendix 1 at the end of this publication.

Table 10-7
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— Manitoba

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	..	3	..	..	77	80
Federal government	15	15
Provincial governments	..	3	..	..	5	7
Provincial research organizations
Business enterprise	0	0
Higher education	52	52
Private non-profit organizations	5	5
Foreign
2008 Social sciences						
Total	..	5	..	..	70	76
Federal government	12	12
Provincial governments	..	5	..	..	4	9
Provincial research organizations
Business enterprise	0 ^s	0 ^s
Higher education	46	46
Private non-profit organizations	9	9
Foreign
2007 Social sciences						
Total	..	1	..	..	66	67
Federal government	12	12
Provincial governments	..	1	..	..	4	5
Provincial research organizations
Business enterprise	0 ^s	0 ^s
Higher education	43	43
Private non-profit organizations	6	6
Foreign
2006 Social sciences						
Total	..	1	..	..	63	65
Federal government	12	12
Provincial governments	..	1	..	..	4	5
Provincial research organizations
Business enterprise	1	1
Higher education	41	41
Private non-profit organizations	6	6
Foreign
2005 Social sciences						
Total	..	1	..	..	67	68
Federal government	13	13
Provincial governments	..	1	..	..	3	4
Provincial research organizations
Business enterprise	1	1
Higher education	44	44
Private non-profit organizations	6	6
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-8
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— Saskatchewan

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	..	1	..	..	58	60
Federal government	15	15
Provincial governments	..	1	..	..	7	8
Provincial research organizations
Business enterprise
Higher education	36	36
Private non-profit organizations	0	0
Foreign
2008 Social sciences						
Total	..	1	..	..	63	64
Federal government	17	17
Provincial governments	..	1	..	..	9	10
Provincial research organizations
Business enterprise
Higher education	36	36
Private non-profit organizations	1	1
Foreign
2007 Social sciences						
Total	..	1	..	..	42	42
Federal government	8	8
Provincial governments	..	1	..	..	4	4
Provincial research organizations
Business enterprise
Higher education	29	29
Private non-profit organizations	0 ^s	0 ^s
Foreign
2006 Social sciences						
Total	42	42
Federal government	7	7
Provincial governments	6	6
Provincial research organizations
Business enterprise
Higher education	29	29
Private non-profit organizations	0 ^s	0 ^s
Foreign
2005 Social sciences						
Total	..	0^s	..	..	42	42
Federal government	7	7
Provincial governments	..	0 ^s	..	..	4	4
Provincial research organizations
Business enterprise
Higher education	30	30
Private non-profit organizations	0 ^s	0 ^s
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Gross Domestic Expenditures on Research and Development in Canada (GERD), and the Provinces – National estimates 2001 to 2011 / Provincial estimates 2005 to 2009

Table 10-9
Provincial gross domestic expenditures on research and development, in the social sciences and humanities — Alberta

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	..	1	..	..	219	221
Federal government	39	39
Provincial governments	..	1	..	..	49	50
Provincial research organizations
Business enterprise	1	1
Higher education	114	114
Private non-profit organizations	15	15
Foreign
2008 Social sciences						
Total	..	1	..	..	214	216
Federal government	47	47
Provincial governments	..	0 ^s	..	..	48	49
Provincial research organizations
Business enterprise	2	3
Higher education	104	104
Private non-profit organizations	13	13
Foreign
2007 Social sciences						
Total	..	2	..	..	195	197
Federal government	42	42
Provincial governments	..	2	..	..	46	48
Provincial research organizations
Business enterprise	3	3
Higher education	94	94
Private non-profit organizations	10	10
Foreign
2006 Social sciences						
Total	..	1	..	..	161	161
Federal government	33	33
Provincial governments	..	1	..	..	35	35
Provincial research organizations
Business enterprise	2	2
Higher education	82	82
Private non-profit organizations	9	9
Foreign
2005 Social sciences						
Total	..	0^s	..	..	176	176
Federal government	43	43
Provincial governments	..	0 ^s	..	..	37	37
Provincial research organizations
Business enterprise	1	1
Higher education	85	85
Private non-profit organizations	10	10
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-10
Provincial gross domestic expenditures on research and development, in the social sciences and humanities
— British Columbia

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total	0	1	..	..	252	253
Federal government	0	..	..	..	66	66
Provincial governments	0	1	..	..	23	24
Provincial research organizations	..	..	..	..	..	..
Business enterprise	0	..	..	..	1	1
Higher education	..	..	..	..	134	134
Private non-profit organizations	..	..	..	..	28	28
Foreign	..	..	..	..	..	..
2008 Social sciences						
Total	0^s	1	..	..	245	246
Federal government	0 ^s	..	..	..	63	63
Provincial governments	0	1	..	..	27	27
Provincial research organizations	..	..	..	..	..	..
Business enterprise	0	..	..	..	1	1
Higher education	..	..	..	..	129	129
Private non-profit organizations	..	..	..	..	26	26
Foreign	..	..	..	..	..	..
2007 Social sciences						
Total	1	1	..	..	235	236
Federal government	1	..	..	..	51	52
Provincial governments	0	1	..	..	27	28
Provincial research organizations	..	..	..	..	..	..
Business enterprise	0	..	..	..	1	1
Higher education	..	..	..	..	121	121
Private non-profit organizations	..	..	..	..	35	35
Foreign	..	..	..	..	..	..
2006 Social sciences						
Total	0^s	2	..	..	210	212
Federal government	0 ^s	..	..	..	48	48
Provincial governments	0	2	..	..	21	24
Provincial research organizations	..	..	..	..	..	..
Business enterprise	0	..	..	..	1	1
Higher education	..	..	..	..	113	113
Private non-profit organizations	..	..	..	..	26	26
Foreign	..	..	..	..	..	..
2005 Social sciences						
Total	0	2	..	..	197	199
Federal government	0	..	..	..	49	49
Provincial governments	0	2	..	..	16	18
Provincial research organizations	..	..	..	..	..	..
Business enterprise	0	..	..	..	1	1
Higher education	..	..	..	..	108	108
Private non-profit organizations	..	..	..	..	23	23
Foreign	..	..	..	..	..	..

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

Table 10-11
Provincial gross domestic expenditures on research and development, in the social sciences and humanities — Yukon, Northwest Territories and Nunavut

Funding sector	Performing sector					Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	
millions of dollars						
2009 Social sciences						
Total
Federal government
Provincial governments
Provincial research organizations
Business enterprise
Higher education
Private non-profit organizations
Foreign
2008 Social sciences						
Total
Federal government
Provincial governments
Provincial research organizations
Business enterprise
Higher education
Private non-profit organizations
Foreign
2007 Social sciences						
Total
Federal government
Provincial governments
Provincial research organizations
Business enterprise
Higher education
Private non-profit organizations
Foreign
2006 Social sciences						
Total
Federal government
Provincial governments
Provincial research organizations
Business enterprise
Higher education
Private non-profit organizations
Foreign
2005 Social sciences						
Total
Federal government
Provincial governments
Provincial research organizations
Business enterprise
Higher education
Private non-profit organizations
Foreign

Note(s): Components may not add to totals due to rounding. The private non-profit (PNP) sector appears in both the performing and funding sector for the gross domestic expenditure on research and development (GERD) for Canada. Commencing with reference year 2000 the data for the private non-profit sector performing research and development are not distributed by provinces or territories. The national totals of research and development by performing sector include the PNP sector. The data for the private non-profit sector funding research and development continue to be distributed by provinces and territories. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D.

How to read the gross domestic expenditures on research and development (GERD) matrix

Introduction to GERD terminology - Research and development expenditures in Canada are estimated annually by type of sector, by sources of funds and by science type using a series of surveys supplemented by modelling:

- Type of sector – Research and development (R&D) expenditures can be spent by organizations within six sectors in Canada: federal government organizations; provincial government organizations; provincial research organizations; business enterprises; higher education organizations (including universities and affiliated teaching hospitals); and private non-profit organizations.
- Sources of funds – Intramural research and development (R&D) expenditures are spent within organizations performing the R&D. The organizations can fund their own R&D or undertake R&D on behalf of other organizations. The R&D performing organizations indicate the source of funds, by sector, for their intramural R&D expenditures. In the GERD matrix, the source of funds data are shown by funding sector.
- Science type – Research and development (R&D) expenditures are spent by organizations performing in either the natural sciences and engineering or the social sciences and humanities. Only intramural R&D expenditures in the natural sciences and engineering for the provincial research organisations and business enterprises are included in the GERD.

Organizations of any type can perform and/or fund R&D at any time. GERD data include intramural R&D expenditures only. Therefore, the payments of organisations for R&D performed by other organisations, or extramural R&D expenditures, are not included.

Definition of GERD - Gross domestic expenditures on Research and Development (GERD) is the total value of *intramural* research and development expenditures (R&D) of all organizations in *performing* sectors. As there are two dimensions to the reporting of R&D expenditures (by performing sector and by funding sector) the data are presented in a matrix. GERD data are based on the source of funds provided by the performing sector.

Tabular results - The table below contains total R&D expenditures for each of the performing sectors' columns (federal government, provincial governments, provincial research organizations, business enterprises, higher education and private non-profit organizations).

Each of the performing sectors indicates the funding sectors for their intramural R&D expenditures. This is an important distinction because it explains the financial sources of performers' R&D activities. The funding sectors include all of the performing sectors and foreign sources of funds.

Data sources used to populate the tabular results - Federal government intramural R&D expenditures are estimated by the annual Federal Science Expenditure and Personnel survey. Intramural R&D expenditures represent spending on R&D performed by federal departments and agencies. As the GERD matrices within the publication indicate, federal departments and agencies receive funding for intramural R&D performance from provincial governments and from the business enterprise sector.

The provincial governments' intramural R&D expenditures are derived from annual provincial surveys of scientific activities. The surveys are conducted on a cost-shared basis, and are collected under the authority of the provincial governments, which means each province can choose when to participate. Survey-based expenditures for the most recent reference year are available for the following provinces: Newfoundland and Labrador, New Brunswick, Ontario, Manitoba, Alberta and British Columbia. The provincial government of Quebec conducts a survey of its intramural R&D activities which it shares with Statistics Canada to construct the GERD matrix.

The annual survey of the Research and Development Activities of Provincial Research Organizations is the source of expenditure data displayed in the column for provincial research organizations.

The annual survey of Research and Development in Canadian Industry is the source of the business enterprise sector's R&D expenditure data.

An estimation model is used to populate R&D intramural expenditures for the higher education sector.

The annual survey of Research and Development in Private Non-Profit Organizations provides national R&D expenditure data for this sector.

Reference documents - Users interested in total R&D spending for a sector such as the federal government are referred to the intramural and extramural R&D spending published in Science Statistics (88-001-X), and Federal Scientific Activities (88-204-X).

Tabulation notes - Funding sector R&D expenditures shown in the GERD matrix do not equal extramural R&D spending of individual funding sectors for a number of reasons including: differences in financial years of the organisations funding the R&D and the organisations performing the R&D; the time it takes to perform the R&D; organisations sub-contracting parts of the R&D work to organisations in other sectors; payments for work that is related to the R&D but not part of the contracted R&D; differences in the costs of performing the R&D and the payments for the R&D work; and R&D performing organisations not indicating accurately their sources of funds by funding sector.

GERD data are presented separately for total sciences, for natural sciences and engineering, and for social sciences and humanities. Total sciences is the sum of natural sciences and engineering and social sciences and humanities. Only natural sciences and engineering data are collected and published for the business enterprise sector and provincial research organizations.

GERD data presented in these matrix tables are used to compare Canada's R&D performance internationally. They are assembled based on guidelines presented in the Organisation for Economic Co-operation and Development's *Frascati Manual* (2002). For a graphical representation similar to the one shown below, see page 122 of the manual.

This table is for reference purposes only.

Text table 1 Gross domestic expenditure on research and development (GERD) matrix - Canada

Funding sector	Performing sector Total intramural (domestic) research and development performed by:						Total
	Federal government	Provincial governments	Provincial research organizations	Business enterprise	Higher education	Private non-profit organizations ¹	
Total	millions of dollars						GERD is total intramural (domestic) R&D expenditures provided by the performing sector
	Federal government intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	Provincial governments intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	Provincial research organizations intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	Business enterprise intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	Higher education intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	Private non-profit organizations intramural (domestic) R&D expenditures provided by this performing sector and identifying the funding sector	
Federal government							Federal government
Provincial governments							Provincial governments
Provincial research organizations							Provincial research organizations
Business enterprise							Business enterprise
Higher education							Higher education
Private non-profit organizations							Private non-profit organizations
Foreign ²							Foreign

1. These data are not distributed provincially.

2. Foreign enterprises within same group or other foreign governments or international organizations.

Data sources and methodology

Definitions

Gross domestic expenditure on research and development (GERD) is a statistical series, constructed by adding together the intramural expenditures on research and development (R&D) as reported by the performing sectors. As a term used by OECD Member countries, it is defined as "total intramural expenditure on R&D performed on the national territory during a given period. GERD includes R&D performed within a country and funded from abroad but excludes payments for R&D performed abroad".¹ GERD is constructed by adding together the intramural expenditures of the performing sectors.

GERD is often displayed as a matrix of performing and funding sectors. The GERD and GERD matrix are fundamental to the national and international examination of R&D expenditures.

The matrix illustrates three aspects of a country's R&D effort:

- it shows how much R&D each sector performed over a 12-month period;
- it shows the amount of R&D each sector financed over a 12-month period (as indicated by the R&D performing sector); and
- it indicates the flow of funds between sectors.

The GERD is an indicator of science and technology (S&T) activities; it is appropriately used as a summary of R&D activities and the basic flow of funds. General guidelines to follow when using a summary statistical series such as the GERD, include:

- Such series provide only a summary of very complex patterns of activities. The series should, therefore, be used in conjunction with other relevant information;
- Users generally refer to R&D data with a question in mind: "Is our national university research effort declining?" "Does my firm spend a higher proportion of its funds on R&D than the average for my industry?" etc. It is, therefore, necessary to identify the basic data relevant to each question in order to know which R&D indicator is best suited to answering the question. The user should keep in mind that the data used for the R&D indicator may be accurate enough to answer one question but not another.

Provincial estimates of GERD

In a country as large as Canada it is useful to have a general idea of where R&D activities are located to indicate the level of scientific and technical endeavour in a particular area and to use the statistics in association with other provincial data. For these reasons, an estimate of the provincial distribution of the Canadian GERD has been prepared.

The definition of GERD in a provincial context is similar to that provided above.

The expenditures are assigned to the province in which the performing establishment is located. Personnel may live in an adjoining province (e.g., the National Capital Region) and materials and equipment will often come from another province or country; these factors must be taken into consideration when using GERD as a provincial indicator of S&T activity.

1. The Measurement of Scientific and Technological Activities - Proposed Standard Practice for Surveys of Research and Experimental Development, Frascati Manual 2002. OECD, Paris, 2002, p. 121.

The funding shown is of R&D carried out in a province; it is not R&D funding from a province. For example, when the federal government is shown as the funder for R&D in a province, the funds are received from the central government and are to be spent on R&D in an establishment in that province. The federal government, of course, raises funds from many sources, outside of that province. Similarly, when R&D is shown as being funded by the business enterprise sector, the funds are not necessarily raised from activities within the province. Most provincial governments provide minimal funding towards federal government performance, so statistical zeros are applied.

The provincial and territorial R&D expenditures for the business enterprise sector are collected on the Research and Development in Canadian Industry Survey. This survey does not collect sources of funds by province or territory. The provincial and territorial distribution by sources of funds of the business enterprise sector R&D expenditures is derived through a modeling system, which prorates values based on reported business enterprise provincial and territorial R&D. The provincial and territorial distribution of total R&D is proportionally distributed to the reported national sources of funds.

Limitations of GERD

The GERD, like any other social or economic statistic, can only be approximately true. Different components are of different accuracy: sector estimates probably vary from 5% to 15% in accuracy. However, the GERD estimates are sufficiently reliable for their main use as an aggregate indicator for science policy.

One of the most important problems relating to GERD concerns its definition. There remains some ambiguity in defining precisely what constitutes R&D or, for example, in a continuing project, determining the precise point at which the project passes the boundary of R&D and becomes exploitation of a process or product on which it may be said that the R&D stage has been completed. This ambiguity is perhaps less serious in internal time series, where it may be expected that the year-to-year application of the definitions by the same reporting units are at least consistent.

A second difficulty arises with regards to survey design. The people best qualified to apply the R&D definitions and classifications - scientific and technical personnel engaged in the direct management of S&T activity - rarely participate in the statistical agency's data collection process. Because the data collected are concerned not with scientific and technical content, but financial and labour inputs to achieving this content, the questionnaires tend to be addressed to and completed by financial and management staff. This is a fundamental problem of all surveys addressed to large organizations, whether they are public or private.

These two problems account for the limited amount of geographic and scientific detail in the published GERD. The amount of detail presented, for example, in the Canadian GERD as published by Statistics Canada is limited by the nature of the surveys, and the other data collection and analysis instruments. Nor is it possible to increase the amount of detail because this would require switching to new kinds of data collection instruments in a vastly expanded survey operation.

Another reason for the limited detail about sectors stems from the fact that R&D is often a secretive endeavour. Private sector companies usually want to surprise competitors with a new product. Thus the money spent on the R&D may be reported, but details about R&D projects would not. Similarly, a government department such as National Defence might report R&D expenditures but not the nature and detail of the respective R&D projects.

To summarize, the GERD serves as a general indicator of R&D activity and not as a detailed inventory of R&D projects within an organization, sector, or province. It is an estimate and as such can show trends in R&D expenditures by sector and sub-sector, by province and country, from year-to-year. In this capacity, the GERD estimates are sufficiently reliable for their main use as an aggregate indicator for science policy.

R&D performers and funders categorized

Sectoring

Considering that the GERD is the aggregate of the total R&D expenditures of the performing sectors, it is useful now to look at these sectors individually. Sectors are reviewed in terms of an international (OECD) framework for measuring R&D expenditures. There are four major sectors of R&D performance and five for funding:

- Government;
- Business enterprises;
- Higher education;
- Private non-profit organizations;
- Foreign (funding only).

The sectors for the GERD, as chosen and defined by the OECD, are based largely on existing United Nations classifications and in particular, the System for National Accounts (SNA). Under the general heading of "Institutional classifications", the OECD approach focuses on the characteristic properties of the performing and funding institutions. Each statistical unit is classified according to its principal economic activity and, consequently, the whole of the R&D resources of the unit classified are allocated to one sector or sub-sector.

Government

The OECD definition of this sector is: "All departments, offices and other bodies which furnish, but normally do not sell to the community, those common services, other than higher education, which cannot otherwise be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community. (Public enterprises are included in the business enterprise sector)".²

Public enterprises such as Petro-Canada and Ontario Hydro are excluded from this sector and included in the business enterprise sector. Many non-profit organizations and bodies, however, are included in this sector if they either serve or are controlled by government, or both.

In Canada the distribution of GERD amongst the government sub-sectors is published. The sub-sectors are the federal government, the provincial governments and the provincial research organizations (PRO's). Currently Canada has seven PRO's. They are the New Brunswick Research and Productivity Council, the "Centre de recherche industrielle du Québec (CRIQ)", the Industrial Technology Centre (Manitoba), the Saskatchewan Research Council, the Northern Research Institute (Yukon), the Nunavut Research Institute and the Aurora Research Institute (Northwest Territory).

Business enterprise

This sector is composed of all firms, organizations and institutions whose primary activity is the production of goods or services for sale to the general public at a price intended approximately to cover at least the cost of production as well as non-profit institutes serving such firms. Included are government-owned enterprises such as Ontario Hydro and Canadian National Railways.

2. Ibid., p. 62.

Higher education

This sector is composed of all universities, colleges of technology and other institutes of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating **under the direct control of or administered by** higher education establishments.

A major source of data for the HERD estimation model is the Canadian Association of University Business Officers (CAUBO) Financial Information on Universities and Colleges (FIUC) survey. Of particular importance is sponsored research. At the time of publication, key data for 2009/2010 for the province of Quebec were unavailable. Therefore, Quebec data were estimated for 2009/2010 and will be revised in the next publication, when data become available.

Private non-profit organizations

This sector comprises private or semi-private organizations which are not established primarily with the aim of making a profit.

It consists of voluntary associations (scientific and professional societies, health-oriented groups), philanthropic foundations and research institutes supported by the associations and foundations. These kinds of institutions are usually maintained by fees, dues and donations from members and sponsors and by grants from governments and enterprises. They may also obtain revenue from the sale of their products such as publications or special studies.

Non-profit institutes and organizations excluded from this sector are those which are controlled by enterprises, government, or higher education. Such non-profit institutes and organizations are included with the respective sectors whose interests they mainly serve.

The PNP sector appears in both the performing and funding sector for the GERD for Canada. Commencing with reference year 2000, the data for the PNP sector performing research and development are not distributed by provinces, territories or the NCR. However, the national totals of research and development by performing sector include the PNP sector. The PNP sector continues to be distributed for the funding sector.

Foreign

This sector consists of: "All institutions and individuals located outside the political borders of a country, except vehicles, ships, aircraft and space satellites operated by domestic entities and testing grounds acquired by such entities.³

This sector also includes all international organizations (except business enterprises), including facilities and operations within the country's borders. Foreign-owned subsidiaries are not included in this sector (e.g., Ford Canada is, for the purposes for measuring R&D expenditures, a domestic organization in the Canadian business enterprise sector, even though its parent company is the Ford Motor Company of the United States).

The foreign sector is included in the GERD only as a funding sector (see matrix), since by definition the GERD includes R&D performed within a country and **funded from abroad** but excludes payments made abroad for R&D. Thus, funding from the foreign sector is implicitly included in the intramural expenditures of the four performing sectors.

Science type

Definition of natural sciences and engineering

The natural sciences and engineering field embraces the disciplines of study concerned with understanding, exploring, developing or utilizing the natural world. Included are the engineering, mathematical, life and physical sciences.

3. Op cit., p.72.

Definition of social sciences and humanities

The social sciences and humanities field embraces all disciplines involved in studying human actions and conditions and the social, economic and institutional mechanisms affecting humans. Included are such disciplines as anthropology, demography, economics, geography, history, languages, literature and linguistics, law, library science, philosophy, political science, psychology, religious studies, social work, sociology, and urban and regional studies.

Appendix I

National Capital Region table

Text table A

Gross domestic expenditures on research and development - National Capital Region (NCR) Quebec/Ontario

	National Capital Region		Total
	Quebec	Ontario	
	millions of dollars		
Total sciences			
2005	83	1,040	1,123
2006	85	1,021	1,105
2007	58	1,076	1,134
2008	105	1,041	1,146
2009	174	1,090	1,264
Natural sciences and engineering			
2005	72	930	1,002
2006	75	878	953
2007	48	919	968
2008	93	851	944
2009	162	896	1,057
Social sciences and humanities			
2005	11	110	121
2006	9	143	153
2007	10	157	166
2008	12	191	202
2009	12	194	206