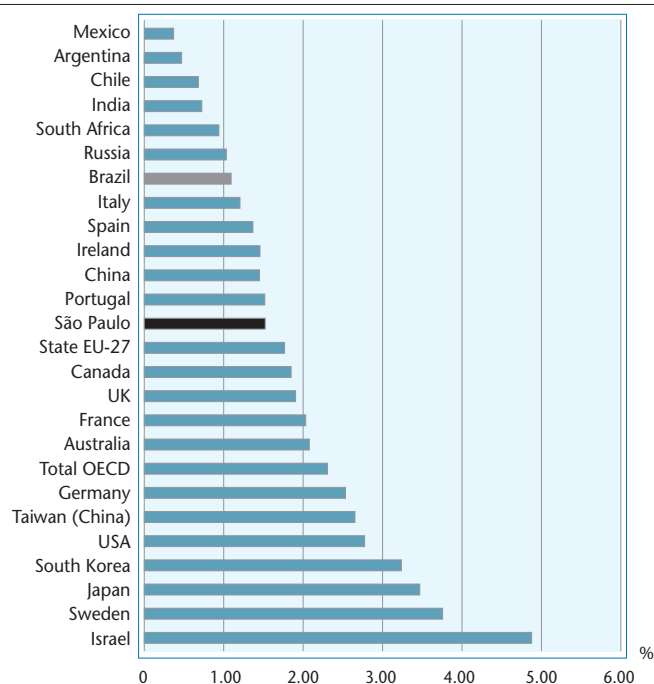


Highlights of Chapter 3 – Part A: R&D Expenditure in São Paulo State

- Total R&D expenditure in São Paulo State reached R\$15.5 billion in 2008, corresponding to 1.52% of the state's GDP.
- São Paulo State's R&D intensity (1.52% of GDP) was higher than those of Spain, Portugal, Italy, Ireland, China, India, and all other Latin American countries, but lower than those of Canada, the U.K., France, Taiwan and the OECD average, which was 2.3%.

Brazil, São Paulo State & selected countries: Total R&D expenditure, 2008 (% GDP)



Source: OECD.

- R&D expenditure in São Paulo State totalled R\$49 billion in the four-year period 2005-08.

São Paulo State: R&D expenditure by institutional and administrative nature of funding source, 2008

Institutional & administrative nature of funding source	R&D expenditure		
	Amount (R\$ m)	% state GDP	% total
Total	15,523.6	1.52	100
Higher education	3,274.1	0.32	21.1
Federal HEIs	425.6	0.04	2.7
State HEIs	2,646.0	0.26	17.0
Private HEIs	202.5	0.02	1.3
Funding agencies	1,457.8	0.14	9.4
CNPq	316.6	0.03	2.0
CAPES	241.2	0.02	1.6
FINEP	262.1	0.03	1.7
FAPESP	637.9	0.06	4.1
Research institutions	1,238.5	0.12	8.0
Federal RIs	789.2	0.08	5.1
State RIs	449.3	0.04	2.9
Business organisations	9,553.3	0.94	61.5

Sources: CNPq, CAPES, FINEP, FAPESP, INEP, INPE, IPEN, CTI-Cenpra, LNLS, IPT, Apta, Ministry of Science & Technology (MCT), São Paulo State Depts. of Health and Environment, IBGE, São Paulo State budget proposal.

- The private sector's share of total R&D expenditure in São Paulo State was 63%, with business organisations accounting for 62% and private higher education institutions (HEIs) for 1%.
- R&D expenditure by the São Paulo State government amounted to R\$3.7 billion in 2008 and corresponded to 24% of total R&D expenditure in the state.

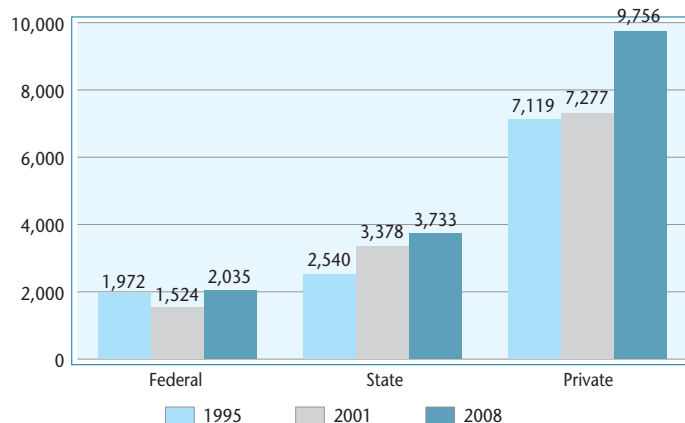
São Paulo State: R&D expenditure by administrative nature of funding source, 2008

Administrative nature of funding source	R&D expenditure	
	Amount (R\$ m)	% total
Total	15,523,6	100,0
Federal	2,034,7	13,1
State	3,733,2	24,0
Private	9,755,8	62,8

Source: CNPq, CAPES, FINEP, FAPESP, INEP, INPE, IPEN, CTI-Cenpra, LNLS, IPT, Apta, Ministry of Science & Technology (MCT), São Paulo State Depts. of Health and Environment, IBGE, São Paulo State budget proposal.

- Federal R&D expenditure in São Paulo State was slightly over half of state R&D expenditure and corresponded to 13% of the total, amounting to R\$2 billion.
- Federal R&D expenditure in São Paulo State in 2008 was only 3% greater than in 1995 in real terms (i.e. adjusted for inflation measured by the IGP-DI Index). State R&D expenditure in 2008 was 47% greater than in 1995 in real terms. Business R&D expenditure in 2008 was 37% greater than in 1995 in real terms.

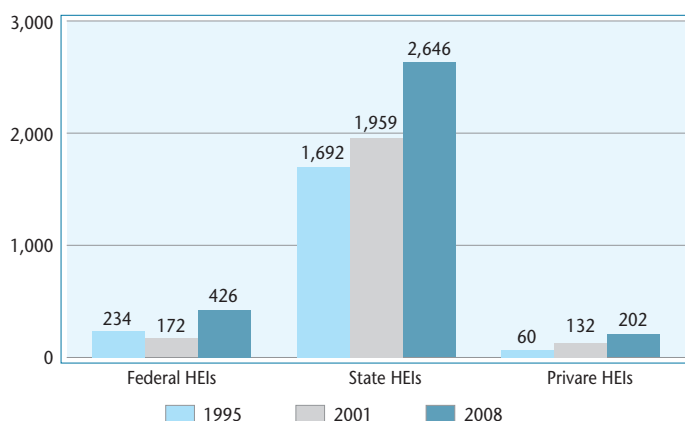
São Paulo State: R&D expenditure by administrative nature of funding source (millions of 2008 R\$, IGP-DI)



Sources: CNPq, CAPES, FINEP, FAPESP, INEP, INPE, IPEN, CTI-Cenpra, LNLS, IPT, Apta, Ministry of Science & Technology (MCT), São Paulo State Depts. of Health and Environment, IBGE, São Paulo State budget proposal.

- Higher education institutions (HEIs) accounted for 21% of total R&D expenditure in São Paulo State in 2008. R&D expenditure by state HEIs amounted to R\$2.7 billion. Federal HEIs and private HEIs spent R\$0.4 billion and R\$0.2 billion respectively.

São Paulo State: R&D expenditure by HEIs according to administrative jurisdiction (millions of 2008 R\$, IGP-DI)

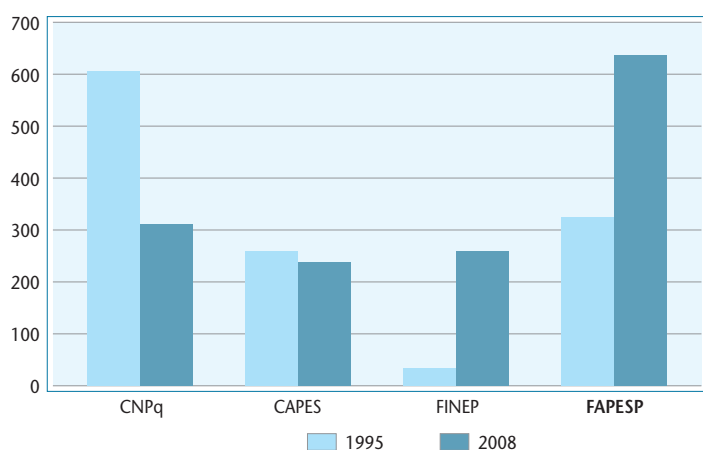


Sources: MCT; INEP.

Research funding agencies spent R\$1.5 billion in São Paulo State in 2008, accounting for 9.4% of total R&D expenditure in the state in that year.

- Measured in real terms (deflated by the IGP-DI Index), in 2008:
 - Spending by CNPq in São Paulo (R\$317 million) fell to 52% of the amount spent in 1995.
 - Spending by CAPES in São Paulo (R\$241 million) fell to 91% of the amount spent in 1995.
 - Spending by FINEP in São Paulo (R\$262 million) rose to 739% of the amount spent in 1995, which was only R\$35 million.
 - Spending by FAPESP (R\$638 million) rose 195% compared with 1995.

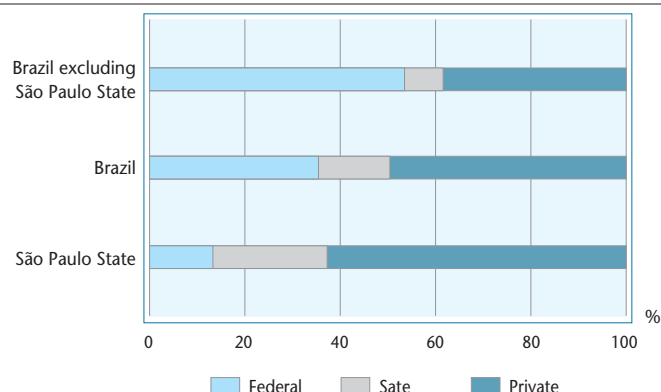
São Paulo State: Spending by government research funding agencies (millions of 2008 R\$, IGP-DI)



Source: CNPq, CAPES, FINEP, FAPESP.

- R&D expenditure breaks down quite differently in São Paulo State, in Brazil overall, and in the other states of Brazil:
 - Federal R&D expenditure accounts for 13% of total R&D expenditure in São Paulo State and 53% of the total in the rest of Brazil.
 - Private R&D expenditure accounts for 61% of total R&D expenditure in São Paulo State and 38% of the total in the rest of Brazil.
 - State R&D expenditure accounts for 24% of total R&D expenditure in São Paulo State and 8.4% of the total in the rest of Brazil.

Breakdown of R&D expenditure by funding source, 2008



Sources: CNPq, CAPES, FINEP, FAPESP, INEP, INPE, IPEN, CTI-Cenpra, LNLS, IPT, Apta, Ministry of Science & Technology (MCT), São Paulo State Depts. of Health and Environment, IBGE, São Paulo State budget proposal.

- The 2008 R&D Scoreboard issued by the UK Department for Business, Innovation & Skills (BIS, then called the Department for Universities, Innovation & Skills) featured five Brazilian companies among the top 850 UK companies and top 1400 global com-

panies by R&D investment: Petrobras, Vale, Embraer, Braskem, and WEG. The latter two were not included in the 2007 edition. The five companies invested £984 million in R&D in 2008.

- Petrobras ranked second among Oil & Gas Producers, with R&D expenditure of £442 million in the year prior to the study (2007), or 1% of sales. This investment corresponded to 124% growth over the average for the previous four years. Petrobras ranked top among the five Brazilian companies featured by the study and 119th in the global rank order.
- Vale came first in Mining, with R&D expenditure of £368 million, or 2.3% of sales, well above the average for the Mining sector, which was 0.4%. This investment corresponded to 156% growth over the average for the previous four years. Vale was placed 145th in the global rank order.
- Embraer came 16th in Aerospace & Defence, with R&D expenditure of £131 million, or 5% of sales, above the average for the sector, which was 4.4%. This investment corresponded to 145% growth over the average for the previous four years. Embraer was placed 327th in the global rank order.
- Braskem came 90th in Chemicals, with R&D expenditure of £22 million, or 0.4% of sales (compared with a sector average of 2.8%). This investment corresponded to 64% growth over the average for the previous four years. Braskem was placed 1,245th in the global rank order.
- WEG came 106th in Electrical & Electronic Equipment, with R&D expenditure of £21 million, or 2.1% of sales (compared with a sector average of 4.1%). This investment corresponded to 93% growth over the average for the previous four years. WEG was placed 1,283rd in the global rank order.
- Among the four BRICs, Brazil outranked only Russia in terms of the number of companies included in the study, with five companies versus Russia's three. China and India performed far better, with nine and 15 companies respectively.
- Business investment in R&D in São Paulo State corresponded to 0.94% of the state's GDP in 2008. This business R&D intensity was higher than for Ireland, Portugal, Spain, Italy, Russia and all other Latin American countries but less than the OECD average (1.58%).

R&D expenditure by business organisations (% GDP), 2008



Source: OECD.