Detailed Tables

Chapter 8

List of Detailed Charts

Detailed Table 8.1
Occupational base groups in ST&I by educational attainment and occupational category – São Paulo State, 2006

Code of Occupational Base Group (OBG)	No. of OBGs	Occupational base groups in ST&I by educational attainment and occupational category									
		Total		Post-graduates		Tertiary education		Secondary education		Primary education	
		No. de employees	%	No. de employees	%	No. de employees	%	No. de employees	%	No. de employees	%
Total	**152**	**1,274,617**		**16,331**		**526,490**		**487,874**		**243,922**	
Technological occupations											
1236, 1237, 1411, 1412, 1425, 1426, 2011, 2012, 2021, 2030, 2031, 2032, 2033, 2034, 2035, 2111, 2112, 2122, 2123, 2124, 2131, 2132, 2133, 2134, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2211, 2221, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2241, 2341, 2342, 2343, 2344, 2347, 2348, 2349, 2410, 2511, 2512, 2513, 2612, 2624, 3185, 3186, 3187, 3188	61	440,523	100.0	15,294	3.5	386,354	87.7	29,374	6.7	9,501	2.2
Technical occupations											
2321, 2331, 2332, 3001, 3003, 3011,3012, 3111, 3112, 3116, 3121, 3122, 3123, 3131 3132, 3133, 3134, 3135, 3141, 3142, 3143, 3144, 3146, 3147, 3161, 3163, 3171, 3172, 3180, 3181, 3182, 3183, 3184, 3192, 3201, 3211, 3212, 3213, 3223, 3224, 3225, 3226, 3231, 3241, 3251, 3252, 3253, 3322, 3511, 3513, 3911, 3912, 3951, 7254, 9111, 9112, 9113, 9131, 9141, 9142, 9143, 9144	62	491,215	100.0	999	0.2	126,228	25.7	259,439	52.8	104,549	21.3

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Detailed Table 8.1 (continued)
Occupational base groups in ST&I by educational attainment and occupational category – São Paulo State, 2006

Code of Occupational Base Group (OBG)	No. of OBG	Occupational base groups in ST&I by educational attainment									
		Total		Post-graduates		Tertiary education		Secondary education		Primary education	
		No. de employees	%	No. de employees	%	No. de employees	%	No. de employees	%	No. de employees	%
Operational occupations											
4121, 7156, 7211, 7213, 7214, 7221, 7245, 7250, 7251, 7252, 7253, 7255, 7256, 7257, 7311, 7312, 7313, 7321, 7411, 7734, 7735, 8214, 9192, 9193, 9511, 9513, 9531, 9541, 9542	29	342,879	100.0	38	0.0	13,908	4.1	199,061	58.1	129,872	37.9

Source: Ministério do Trabalho e Emprego (MTE), Classificação Brasileira de Ocupações (CBO) 2002.

Note: Level of schooling or educational attainment is called "competency level" in CBO 2002. CBO base groups (grupos de base) roughly correspond to four-digit ISCO-88 occupations at the unit-group level.

Detailed Table 8.2
Employment density and occupational location quotient (OLQ) by occupational category and microregion – São Paulo State, 2006

Microregion	Grand total		Total ST&I occupations				Technological occupations				Technical occupations				Operational occupations			
	No. of jobs	%	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)
Total	**10,315,118**	**100.0**	**1,274,617**	**100.0**	**123.57**	**1.00**	**440,523**	**100.0**	**42.71**	**1.00**	**491,215**	**100.0**	**47.62**	**1.00**	**342,879**	**100.0**	**33.24**	**1.00**
São Paulo	4,548,623	44.1	570,099	44.7	125.33	1.01	237,324	53.9	52.17	1.22	199,831	40.7	43.93	0.92	132,944	38.8	29.23	0.88
São José dos Campos	293,758	2.8	55,613	4.4	189.32	1.53	15,063	3.4	51.28	1.20	21,710	4.4	73.90	1.55	18,840	5.5	64.13	1.93
Osasco	471,836	4.6	64,297	5.0	136.27	1.10	23,718	5.4	50.27	1.18	27,984	5.7	59.31	1.25	12,595	3.7	26.69	0.80
Campinas	675,182	6.5	99,694	7.8	147.66	1.19	29,465	6.7	43.64	1.02	41,537	8.5	61.52	1.29	28,692	8.4	42.50	1.28
Marília	67,858	0.7	8,832	0.7	130.15	1.05	2,913	0.7	42.93	1.01	2,841	0.6	41.87	0.88	3,078	0.9	45.36	1.36
Bananal	3,450	0.0	228	0.0	66.09	0.53	142	0.0	41.16	0.96	51	0.0	14.78	0.31	35	0.0	10.14	0.31
Ribeirão Preto	242,150	2.3	28,042	2.2	115.80	0.94	9,387	2.1	38.77	0.91	12,737	2.6	52.60	1.10	5,918	1.7	24.44	0.74
São Carlos	76,836	0.7	10,371	0.8	134.98	1.09	2,889	0.7	37.60	0.88	4,148	0.8	53.99	1.13	3,334	1.0	43.39	1.31
Sorocaba	270,227	2.6	42,206	3.3	156.19	1.26	9,923	2.3	36.72	0.86	16,622	3.4	61.51	1.29	15,661	4.6	57.95	1.74
São José do Rio Preto	155,128	1.5	15,773	1.2	101.68	0.82	5,660	1.3	36.49	0.85	6,448	1.3	41.57	0.87	3,665	1.1	23.63	0.71
Araçatuba	51,157	0.5	5,048	0.4	98.68	0.80	1,849	0.4	36.14	0.85	2,146	0.4	41.95	0.88	1,053	0.3	20.58	0.62
Fernandópolis	19,059	0.2	1,732	0.1	90.88	0.74	687	0.2	36.05	0.84	672	0.1	35.26	0.74	373	0.1	19.57	0.59
Itapecerica da Serra	180,974	1.8	22,828	1.8	126.14	1.02	6,434	1.5	35.55	0.83	8,452	1.7	46.70	0.98	7,942	2.3	43.88	1.32
Nhandeara	11,283	0.1	1,269	0.1	112.47	0.91	401	0.1	35.54	0.83	355	0.1	31.46	0.66	513	0.1	45.47	1.37
Bauru	124,393	1.2	13,973	1.1	112.33	0.91	4,409	1.0	35.44	0.83	5,963	1.2	47.94	1.01	3,601	1.1	28.95	0.87
Catanduva	48,542	0.5	5,029	0.4	103.60	0.84	1,700	0.4	35.02	0.82	1,785	0.4	36.77	0.77	1,544	0.5	31.81	0.96
Jaú	85,521	0.8	8,297	0.7	97.02	0.79	2,981	0.7	34.86	0.82	3,142	0.6	36.74	0.77	2,174	0.6	25.42	0.76
Batatais	20,185	0.2	2,230	0.2	110.48	0.89	702	0.2	34.78	0.81	647	0.1	32.05	0.67	881	0.3	43.65	1.31
Santos	281,594	2.7	28,395	2.2	100.84	0.82	9,681	2.2	34.38	0.81	13,739	2.8	48.79	1.02	4,975	1.5	17.67	0.53
Piracicaba	141,868	1.4	21,616	1.7	152.37	1.23	4,775	1.1	33.66	0.79	8,459	1.7	59.63	1.25	8,382	2.4	59.08	1.78
Tupã	20,080	0.2	1,809	0.1	90.09	0.73	671	0.2	33.42	0.78	684	0.1	34.06	0.72	454	0.1	22.61	0.68
Mogi das Cruzes	202,637	2.0	26,092	2.0	128.76	1.04	6,661	1.5	32.87	0.77	10,792	2.2	53.26	1.12	8,639	2.5	42.63	1.28

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Detailed Table 8.2 (continued)
Employment density and occupational location quotient (OLQ) by occupational category and microregion – São Paulo State, 2006

Microregion	Grand total		Total ST&I occupations				Technological occupations				Technical occupations				Operational occupations			
	No. of jobs	%	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)
Jundiaí	158,230	1.5	20,750	1.6	131.14	1.06	5,199	1.2	32.86	0.77	9,104	1.9	57.54	1.21	6,447	1.9	40.74	1.23
Auriflama	6,070	0.1	392	0.0	64.58	0.52	194	0.0	31.96	0.75	145	0.0	23.89	0.50	53	0.0	8.73	0.26
Dracena	18,572	0.2	1,788	0.1	96.27	0.78	593	0.1	31.93	0.75	726	0.1	39.09	0.82	469	0.1	25.25	0.76
Adamantina	24,822	0.2	1,962	0.2	79.04	0.64	774	0.2	31.18	0.73	724	0.1	29.17	0.61	464	0.1	18.69	0.56
Rio Claro	70,758	0.7	11,095	0.9	156.80	1.27	2,188	0.5	30.92	0.72	4,271	0.9	60.36	1.27	4,636	1.4	65.52	1.97
Barretos	32,087	0.3	3,251	0.3	101.32	0.82	988	0.2	30.79	0.72	1,793	0.4	55.88	1.17	470	0.1	14.65	0.44
Franco da Rocha	41,888	0.4	4,930	0.4	117.69	0.95	1,282	0.3	30.61	0.72	2,066	0.4	49.32	1.04	1,582	0.5	37.77	1.14
Limeira	131,612	1.3	16,963	1.3	128.89	1.04	4,019	0.9	30.54	0.72	6,924	1.4	52.61	1.10	6,020	1.8	45.74	1.38
Assis	52,145	0.5	4,542	0.4	87.10	0.70	1,580	0.4	30.30	0.71	2,139	0.4	41.02	0.86	823	0.2	15.78	0.47
Franca	79,308	0.8	5,592	0.4	70.51	0.57	2,369	0.5	29.87	0.70	2,078	0.4	26.20	0.55	1,145	0.3	14.44	0.43
Paraibuna/Paraitinga	9,229	0.1	993	0.1	107.60	0.87	265	0.1	28.71	0.67	350	0.1	37.92	0.80	378	0.1	40.96	1.23
Araraquara	123,868	1.2	12,912	1.0	104.24	0.84	3,547	0.8	28.64	0.67	5,659	1.2	45.69	0.96	3,706	1.1	29.92	0.90
Guaratinguetá	67,335	0.7	8,924	0.7	132.53	1.07	1,924	0.4	28.57	0.67	3,320	0.7	49.31	1.04	3,680	1.1	54.65	1.64
Novo Horizonte	12,864	0.1	1,139	0.1	88.54	0.72	366	0.1	28.45	0.67	434	0.1	33.74	0.71	339	0.1	26.35	0.79
Guarulhos	275,846	2.7	38,065	3.0	137.99	1.12	7,771	1.8	28.17	0.66	13,794	2.8	50.01	1.05	16,500	4.8	59.82	1.80
Ituverava	13,961	0.1	948	0.1	67.90	0.55	392	0.1	28.08	0.66	369	0.1	26.43	0.56	187	0.1	13.39	0.40
Registro	29,940	0.3	2,246	0.2	75.02	0.61	832	0.2	27.79	0.65	937	0.2	31.30	0.66	477	0.1	15.93	0.48
Mogi Mirim	93,798	0.9	10,889	0.9	116.09	0.94	2,554	0.6	27.23	0.64	4,899	1.0	52.23	1.10	3,436	1.0	36.63	1.10
Jales	22,222	0.2	2,040	0.2	91.80	0.74	605	0.1	27.23	0.64	1,146	0.2	51.57	1.08	289	0.1	13.01	0.39
Presidente Prudente	103,350	1.0	8,573	0.7	82.95	0.67	2,797	0.6	27.06	0.63	3,957	0.8	38.29	0.80	1,819	0.5	17.60	0.53
Lins	38,136	0.4	3,177	0.2	83.31	0.67	1,016	0.2	26.64	0.62	1,602	0.3	42.01	0.88	559	0.2	14.66	0.44
Jaboticabal	90,158	0.9	8,263	0.6	91.65	0.74	2,383	0.5	26.43	0.62	3,434	0.7	38.09	0.80	2,446	0.7	27.13	0.82
Itanhaém	19,786	0.2	1,182	0.1	59.74	0.48	513	0.1	25.93	0.61	408	0.1	20.62	0.43	261	0.1	13.19	0.40

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Detailed Table 8.2 (continued)
Employment density and occupational location quotient (OLQ) by occupational category and microregion – São Paulo State, 2006

Microregion	Grand total		Total ST&I occupations				Technological occupations				Technical occupations				Operational occupations			
	No. of jobs	%	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)	No. of jobs	%	Density per 1000 jobs (1)	OLQ (2)
Tatuí	60,278	0.6	7,101	0.6	117.80	0.95	1,546	0.4	25.65	0.60	2,614	0.5	43.37	0.91	2,941	0.9	48.79	1.47
Caraguatatuba	42,257	0.4	2,261	0.2	53.51	0.43	1,075	0.2	25.44	0.60	821	0.2	19.43	0.41	365	0.1	8.64	0.26
Botucatu	52,774	0.5	5,941	0.5	112.57	0.91	1,340	0.3	25.39	0.59	2,417	0.5	45.80	0.96	2,184	0.6	41.38	1.24
São João da Boa Vista	81,286	0.8	6,592	0.5	81.10	0.66	2,062	0.5	25.37	0.59	2,910	0.6	35.80	0.75	1,620	0.5	19.93	0.60
Itapetininga	35,530	0.3	2,665	0.2	75.01	0.61	895	0.2	25.19	0.59	1,299	0.3	36.56	0.77	471	0.1	13.26	0.40
Birigui	56,379	0.5	4,422	0.3	78.43	0.63	1,416	0.3	25.12	0.59	1,801	0.4	31.94	0.67	1,205	0.4	21.37	0.64
Andradina	34,313	0.3	3,511	0.3	102.32	0.83	855	0.2	24.92	0.58	2,093	0.4	61.00	1.28	563	0.2	16.41	0.49
Ourinhos	53,651	0.5	4,074	0.3	75.94	0.61	1,323	0.3	24.66	0.58	1,747	0.4	32.56	0.68	1,004	0.3	18.71	0.56
Amparo	37,220	0.4	2,806	0.2	75.39	0.61	876	0.2	23.54	0.55	1,244	0.3	33.42	0.70	686	0.2	18.43	0.55
Itapeva	33,748	0.3	2,612	0.2	77.40	0.63	773	0.2	22.91	0.54	1,075	0.2	31.85	0.67	764	0.2	22.64	0.68
Votuporanga	23,232	0.2	2,053	0.2	88.37	0.72	525	0.1	22.60	0.53	767	0.2	33.01	0.69	761	0.2	32.76	0.99
Bragança Paulista	122,883	1.2	13,616	1.1	110.80	0.90	2,769	0.6	22.53	0.53	5,510	1.1	44.84	0.94	5,337	1.6	43.43	1.31
Campos do Jordão	12,092	0.1	617	0.0	51.03	0.41	257	0.1	21.25	0.50	253	0.1	20.92	0.44	107	0.0	8.85	0.27
Avaré	29,480	0.3	1,803	0.1	61.16	0.49	623	0.1	21.13	0.49	789	0.2	26.76	0.56	391	0.1	13.26	0.40
São Joaquim da Barra	48,559	0.5	4,059	0.3	83.59	0.68	972	0.2	20.02	0.47	2,213	0.5	45.57	0.96	874	0.3	18.00	0.54
Piedade	25,474	0.2	1,740	0.1	68.30	0.55	507	0.1	19.90	0.47	668	0.1	26.22	0.55	565	0.2	22.18	0.67
Capão Bonito	16,039	0.2	973	0.1	60.66	0.49	319	0.1	19.89	0.47	499	0.1	31.11	0.65	155	0.0	9.66	0.29
Pirassununga	41,597	0.4	3,682	0.3	88.52	0.72	804	0.2	19.33	0.45	1,471	0.3	35.36	0.74	1,407	0.4	33.82	1.02

Source: Ministério do Trabalho e Emprego, RAIS 2006.

(1) Density corresponds to the number of jobs per occupation for every 1,000 jobs in all categories in a given microregion of the state.

(2) Occupational location quotient (OLQ) was calculated in a similar manner to traditional LQ, comparing employment in the occupations concerned as a share of total employment in a given microregion with their share of total employment in São Paulo State. Thus a high OLQ indicates that the productive structure of the microregion specializes in the activity analyzed: OLQ = [(NTij/NTj)/(NTiSP/NTSP)], where NTij = number of employees in sector i in microregion j; NTj = total employees in microregion j; NTiSP = number of employees in sector i in São Paulo; NTSP = total employees in São Paulo State.

Detailed Table 8.3
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – absolute numbers																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Total state	**Total**	**1,271,258**	**33,824**	**137,907**	**202,422**	**21,495**	**49,419**	**90,326**	**48,070**	**34,652**	**22,014**	**36,187**	**45,490**	**21,770**	**45,687**	**91,860**	**106,011**	**55,755**	**80,940**	**32,686**	**40,408**	**14,254**	**25,776**	**34,305**
	Technological	440,523	9,623	84,604	66,516	6,823	8,940	17,732	9,544	26,784	16,563	6,588	8,233	3,835	21,193	72,323	38,961	6,548	11,940	5,293	6,377	4,124	2,693	4,807
	Technical	491,215	12,165	35,503	68,540	6,560	17,968	49,611	26,962	4,761	4,748	16,371	16,422	11,543	16,649	14,239	49,940	21,927	32,699	18,397	15,756	8,192	21,699	19,522
	Operational	342,879	12,036	17,800	67,366	8,112	22,511	22,983	11,564	3,107	703	13,228	20,835	6,392	7,845	5,298	17,110	27,280	36,301	8,996	18,275	1,938	1,384	9,976
			Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Average state	**Total**	**99.7**	**2.7**	**10.8**	**15.9**	**1.7**	**3.9**	**7.1**	**3.8**	**2.7**	**1.7**	**2.8**	**3.6**	**1.7**	**3.6**	**7.2**	**8.3**	**4.4**	**6.4**	**2.6**	**3.2**	**1.1**	**2.0**	**2.7**
São Paulo	**Total**	**100.0**	**1.2**	**13.7**	**19.3**	**0.7**	**4.6**	**7.3**	**4.4**	**1.1**	**0.5**	**1.6**	**3.3**	**0.9**	**4.3**	**10.9**	**6.3**	**3.0**	**8.5**	**1.7**	**2.4**	**0.1**	**3.2**	**1.0**
	Technological	41.6	0.5	11.8	6.0	0.4	0.2	0.9	1.0	0.9	0.3	0.6	0.6	0.2	2.8	9.1	2.6	0.5	1.4	0.4	0.7	0.0	0.4	0.6
	Technical	35.1	0.7	1.5	5.5	0.3	1.9	4.4	2.9	0.0	0.2	0.6	0.5	0.6	1.5	1.3	3.2	2.1	3.3	0.7	0.7	0.0	2.8	0.4
	Operational	23.1	0.1	0.4	7.9	0.0	2.5	1.9	0.5	0.1	0.0	0.4	2.2	0.1	0.1	0.6	0.5	0.5	3.7	0.7	1.0	0.0	0.0	0.0
Campinas	**Total**	**100.0**	**7.0**	**6.3**	**10.4**	**6.7**	**0.6**	**7.2**	**1.4**	**4.6**	**4.5**	**1.6**	**4.4**	**3.2**	**2.2**	**2.7**	**14.4**	**9.4**	**2.0**	**4.4**	**3.5**	**1.9**	**0.1**	**1.4**
	Technological	29.6	1.9	2.1	6.0	1.8	0.3	1.9	0.4	4.5	3.7	0.2	0.3	0.6	0.2	2.0	2.2	0.3	0.4	0.4	0.2	0.1	0.0	0.0
	Technical	41.7	0.1	3.4	2.7	0.2	0.0	4.9	0.9	0.1	0.7	1.3	3.9	1.7	0.6	0.5	10.1	0.8	0.1	3.6	3.0	1.8	0.0	1.4
	Operational	28.5	5.0	0.8	1.6	4.7	0.3	0.4	0.0	0.1	0.0	0.0	0.2	0.9	1.4	0.2	2.2	8.4	1.6	0.4	0.3	0.0	0.0	0.0
Osasco	**Total**	**100.0**	**3.5**	**14.4**	**27.0**	**0.5**	**3.1**	**3.3**	**3.9**	**0.5**	**0.3**	**5.6**	**2.1**	**0.8**	**6.3**	**2.6**	**11.6**	**2.7**	**2.9**	**2.2**	**3.3**	**0.1**	**2.8**	**0.5**
	Technological	36.9	0.5	9.5	13.9	0.3	0.2	1.0	0.8	0.1	0.2	0.5	0.4	0.2	3.2	0.2	3.2	0.5	1.3	0.3	0.6	0.0	0.1	0.0
	Technical	43.5	2.1	2.0	9.6	0.1	0.7	2.1	2.8	0.0	0.1	0.7	1.4	0.3	2.8	1.6	7.9	0.8	1.5	1.9	2.5	0.0	2.6	0.3
	Operational	19.6	1.0	3.0	3.5	0.1	2.2	0.2	0.3	0.4	0.1	4.4	0.4	0.4	0.3	0.7	0.5	1.5	0.1	0.0	0.3	0.0	0.1	0.2
São José dos Campos	**Total**	**100.0**	**1.5**	**3.5**	**6.8**	**2.0**	**8.1**	**6.0**	**1.7**	**1.3**	**0.3**	**2.9**	**10.7**	**3.5**	**7.6**	**6.7**	**8.5**	**8.2**	**6.1**	**0.9**	**2.2**	**0.4**	**1.9**	**9.1**
	Technological	27.1	0.6	0.5	1.7	1.7	7.6	0.6	0.3	0.7	0.2	0.2	0.1	0.3	0.1	6.6	3.0	0.3	0.8	0.6	0.8	0.2	0.0	0.2
	Technical	39.0	0.2	0.7	4.3	0.3	0.5	5.0	0.4	0.6	0.0	2.7	2.0	3.2	0.2	0.1	4.2	2.1	2.6	0.2	1.3	0.2	1.8	6.5
	Operational	33.9	0.7	2.3	0.9	0.0	0.1	0.4	1.0	0.0	0.1	0.0	8.6	0.0	7.3	0.0	1.4	5.8	2.7	0.1	0.2	0.0	0.0	2.3
Santos	**Total**	**100.0**	**0.9**	**11.0**	**12.5**	**0.6**	**8.8**	**18.1**	**4.1**	**0.4**	**0.2**	**3.4**	**0.9**	**3.2**	**1.7**	**3.8**	**6.3**	**1.5**	**10.7**	**4.9**	**3.6**	**1.8**	**1.0**	**0.4**
	Technological	34.1	0.1	1.1	1.1	0.0	2.9	16.8	0.0	0.3	0.2	1.7	0.1	0.5	0.5	0.9	3.9	0.1	1.3	0.2	0.2	1.8	0.2	0.2

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	48.4	0.7	7.2	8.6	0.5	5.6	0.9	3.9	0.1	0.1	1.3	0.5	2.7	1.0	2.3	1.7	0.1	5.8	4.7	0.7	0.0	0.1	0.1
	Operational	17.5	0.1	2.7	2.8	0.1	0.3	0.4	0.2	0.1	0.0	0.5	0.2	0.1	0.1	0.7	0.7	1.3	3.6	0.0	2.7	0.0	0.8	0.1
Guarulhos	**Total**	**100.0**	**3.7**	**7.2**	**4.9**	**1.8**	**0.9**	**16.4**	**4.1**	**0.5**	**0.1**	**5.9**	**2.0**	**2.9**	**1.9**	**0.6**	**12.4**	**12.1**	**3.1**	**2.2**	**14.5**	**0.6**	**0.3**	**1.9**
	Technological	20.4	0.9	1.0	0.9	0.6	0.4	1.4	0.8	0.2	0.1	0.7	1.4	1.0	0.1	0.1	8.2	0.7	0.3	0.4	0.5	0.5	0.0	0.0
	Technical	36.2	2.8	3.7	2.6	0.9	0.4	6.0	1.1	0.0	0.0	4.3	0.3	0.1	1.5	0.5	1.7	3.2	2.2	1.3	1.6	0.0	0.3	1.6
	Operational	43.3	0.0	2.6	1.3	0.2	0.1	8.9	2.2	0.2	0.0	0.9	0.4	1.8	0.3	0.0	2.5	8.1	0.6	0.5	12.4	0.0	0.0	0.3
Sorocaba	**Total**	**100.0**	**2.1**	**7.0**	**18.1**	**0.7**	**1.7**	**1.8**	**3.1**	**0.8**	**0.1**	**1.8**	**4.1**	**0.8**	**2.0**	**7.0**	**9.4**	**2.9**	**19.2**	**11.6**	**0.7**	**0.6**	**2.1**	**2.2**
	Technological	23.5	0.8	0.9	1.7	0.5	0.6	0.7	0.1	0.2	0.1	0.4	0.5	0.1	0.0	6.1	6.6	1.7	1.4	0.2	0.2	0.4	0.1	0.0
	Technical	39.4	0.5	5.8	8.2	0.0	0.5	0.7	0.3	0.6	0.0	1.3	2.2	0.7	1.9	0.1	2.3	0.6	2.3	6.9	0.5	0.2	2.0	1.6
	Operational	37.1	0.8	0.3	8.1	0.2	0.5	0.4	2.7	0.0	0.0	0.1	1.4	0.0	0.1	0.8	0.5	0.6	15.5	4.5	0.1	0.0	0.1	0.6
Ribeirão Preto	**Total**	**100.0**	**3.3**	**9.8**	**8.8**	**0.8**	**1.0**	**8.6**	**6.0**	**8.5**	**9.3**	**6.6**	**2.4**	**1.0**	**0.8**	**8.0**	**2.8**	**2.2**	**0.7**	**0.4**	**6.2**	**1.6**	**0.9**	**7.7**
	Technological	33.4	1.8	3.2	1.2	0.0	0.4	0.7	0.7	6.7	6.7	0.2	1.2	0.1	0.5	7.3	1.2	0.4	0.1	0.1	0.2	0.6	0.1	0.0
	Technical	43.5	0.8	6.2	6.9	0.6	0.0	6.3	0.5	1.7	2.6	1.1	1.2	0.7	0.3	0.4	1.1	1.3	0.5	0.3	3.2	0.9	0.5	6.4
	Operational	20.4	0.7	0.5	0.8	0.2	0.6	1.6	4.8	0.1	0.0	5.3	0.0	0.1	0.0	0.2	0.5	0.6	0.1	0.0	2.8	0.2	0.2	1.3
Mogi das Cruzes	**Total**	**100.0**	**1.8**	**5.3**	**29.6**	**1.1**	**1.7**	**4.4**	**3.6**	**1.2**	**0.1**	**2.4**	**1.3**	**6.6**	**0.8**	**1.5**	**9.4**	**1.2**	**6.4**	**6.1**	**7.7**	**1.9**	**0.6**	**5.4**
	Technological	25.5	1.0	1.2	15.7	0.2	0.4	1.2	0.1	0.1	0.1	0.2	0.1	0.5	0.4	0.1	0.7	0.4	0.9	0.7	0.9	0.2	0.2	0.3
	Technical	41.4	0.4	0.5	5.2	0.9	1.3	2.8	3.4	0.8	0.0	1.9	0.9	1.0	0.4	1.2	5.9	0.8	2.4	3.2	3.3	1.6	0.4	3.4
	Operational	33.1	0.4	3.6	8.6	0.0	0.0	0.4	0.1	0.3	0.0	0.3	0.3	5.1	0.0	0.2	2.9	0.0	3.1	2.3	3.6	0.2	0.0	1.7
Itapecerica da Serra	**Total**	**100.0**	**1.5**	**6.8**	**19.0**	**3.8**	**4.4**	**4.5**	**1.0**	**0.2**	**2.1**	**2.6**	**1.8**	**0.5**	**1.1**	**9.4**	**14.7**	**8.5**	**2.4**	**4.8**	**0.9**	**1.1**	**0.8**	**8.0**
	Technological	28.2	0.5	1.2	4.0	0.1	2.7	1.7	0.1	0.0	0.2	0.7	0.2	0.1	0.2	8.5	5.2	0.5	0.4	0.7	0.1	0.1	0.1	0.9
	Technical	37.0	1.0	5.4	5.8	0.3	0.4	2.7	0.9	0.1	1.3	1.9	1.5	0.2	0.4	0.7	3.6	1.2	1.7	3.4	0.8	0.1	0.4	3.2
	Operational	34.8	0.1	0.2	9.3	3.3	1.3	0.2	0.0	0.1	0.7	0.0	0.1	0.1	0.5	0.2	5.9	6.7	0.4	0.7	0.0	0.8	0.2	3.9

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Jundiaí	**Total**	**100.0**	**2.5**	**6.2**	**20.4**	**5.3**	**1.8**	**3.7**	**1.0**	**3.2**	**0.9**	**2.8**	**3.9**	**2.6**	**1.1**	**1.8**	**19.7**	**4.3**	**4.4**	**1.3**	**2.3**	**5.5**	**0.3**	**5.0**
	Technological	25.1	0.4	1.4	2.8	0.6	1.4	1.3	0.2	0.2	0.2	0.2	0.4	0.6	0.2	0.5	10.9	1.1	0.1	0.9	0.3	0.0	0.1	1.6
	Technical	43.9	1.7	3.1	4.9	3.8	0.1	2.5	0.0	0.4	0.5	1.3	3.5	1.2	0.8	1.0	2.9	3.2	2.3	0.3	1.6	5.4	0.2	3.1
	Operational	31.1	0.4	1.7	12.7	0.9	0.3	0.0	0.8	2.6	0.2	1.4	0.0	0.8	0.1	0.3	5.9	0.0	2.0	0.1	0.4	0.0	0.0	0.3
São José do Rio Preto	**Total**	**100.0**	**2.8**	**18.4**	**21.3**	**3.9**	**3.5**	**2.7**	**0.9**	**1.1**	**1.2**	**1.2**	**5.5**	**1.5**	**9.4**	**4.2**	**1.8**	**5.3**	**0.5**	**1.3**	**7.5**	**4.4**	**0.5**	**1.0**
	Technological	35.9	0.5	2.9	15.8	0.4	0.5	0.6	0.1	0.3	0.8	0.2	0.9	0.5	7.5	0.8	0.4	0.4	0.1	0.4	1.1	1.4	0.1	0.1
	Technical	40.8	0.6	12.8	5.0	0.4	0.5	1.3	0.8	0.8	0.4	0.7	4.6	0.6	1.3	3.1	1.0	0.7	0.2	0.8	2.0	2.9	0.3	0.0
	Operational	23.1	1.7	2.7	0.5	3.1	2.5	0.8	0.0	0.0	0.0	0.2	0.0	0.5	0.6	0.4	0.4	4.3	0.1	0.1	4.4	0.0	0.0	0.9
Piracicaba	**Total**	**100.0**	**1.5**	**7.4**	**4.4**	**1.0**	**2.0**	**11.9**	**1.0**	**1.9**	**7.9**	**5.8**	**4.4**	**1.8**	**6.1**	**2.9**	**15.8**	**0.9**	**0.9**	**0.8**	**3.3**	**0.8**	**0.7**	**16.7**
	Technological	22.1	1.3	2.2	1.1	0.6	1.0	0.4	0.5	1.6	6.0	0.2	1.7	0.4	0.1	2.0	1.7	0.6	0.0	0.2	0.0	0.2	0.1	0.1
	Technical	39.1	0.0	1.9	2.3	0.1	0.9	7.1	0.4	0.3	1.9	5.4	2.1	0.6	5.8	0.9	0.9	0.2	0.9	0.3	0.6	0.5	0.4	5.6
	Operational	38.7	0.2	3.4	0.9	0.4	0.2	4.4	0.1	0.0	0.0	0.2	0.5	0.8	0.2	0.0	13.2	0.0	0.0	0.4	2.7	0.1	0.2	10.9
Limeira	**Total**	**100.0**	**0.7**	**9.1**	**10.1**	**5.4**	**3.6**	**6.0**	**5.0**	**5.8**	**3.8**	**6.1**	**0.5**	**0.5**	**2.8**	**3.7**	**4.9**	**2.8**	**9.2**	**1.7**	**1.8**	**3.3**	**2.8**	**10.0**
	Technological	23.7	0.7	1.9	0.6	1.9	0.4	1.3	0.5	5.6	3.7	0.1	0.5	0.1	0.2	2.8	1.8	0.8	0.1	0.1	0.1	0.4	0.0	0.1
	Technical	40.8	0.0	5.2	8.1	1.3	1.4	4.5	3.7	0.0	0.0	0.1	0.0	0.4	2.4	0.9	3.0	1.2	3.4	0.5	1.6	0.9	0.9	1.3
	Operational	35.3	0.0	2.0	1.4	2.1	1.9	0.2	0.9	0.2	0.1	6.0	0.0	0.0	0.1	0.0	0.1	0.8	5.8	1.2	0.1	2.1	1.9	8.5
Bauru	**Total**	**100.0**	**2.9**	**11.5**	**5.0**	**0.2**	**1.3**	**5.3**	**7.7**	**8.5**	**7.8**	**12.1**	**6.1**	**1.2**	**1.2**	**7.1**	**6.8**	**3.7**	**6.0**	**1.1**	**1.3**	**1.4**	**0.3**	**1.6**
	Technological	31.6	0.9	2.4	0.7	0.0	0.1	0.6	1.6	6.8	6.5	0.1	0.6	0.5	0.5	5.1	2.4	0.9	0.8	0.2	0.1	0.7	0.0	0.1
	Technical	42.7	1.9	7.7	2.6	0.2	1.2	1.6	5.2	1.3	1.3	1.9	1.7	0.3	0.5	1.7	3.6	1.8	4.4	0.8	0.8	0.7	0.3	1.0
	Operational	25.8	0.1	1.4	1.7	0.0	0.0	3.1	0.9	0.4	0.1	10.0	3.8	0.4	0.2	0.2	0.7	0.9	0.8	0.1	0.3	0.1	0.0	0.6
Araraquara	**Total**	**100.0**	**3.1**	**1.3**	**22.6**	**2.1**	**2.6**	**9.2**	**1.8**	**0.3**	**0.2**	**2.1**	**2.8**	**6.4**	**6.3**	**3.9**	**5.2**	**13.7**	**0.8**	**2.6**	**2.2**	**4.4**	**1.9**	**4.1**
	Technological	27.4	0.9	0.5	10.8	0.2	0.1	2.5	1.4	0.1	0.1	0.1	1.6	0.1	6.2	0.7	0.2	0.3	0.2	0.5	0.1	0.5	0.2	0.1

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	43.7	0.5	0.5	8.8	0.0	2.0	4.7	0.3	0.1	0.1	1.9	0.8	6.0	0.0	2.6	3.2	0.4	0.1	0.4	2.0	3.9	1.6	3.7
	Operational	28.6	1.7	0.4	3.0	1.9	0.5	2.0	0.1	0.1	0.0	0.1	0.5	0.3	0.1	0.5	1.8	13.0	0.6	1.7	0.1	0.0	0.1	0.2
Bragança Paulista	**Total**	**100.0**	**5.6**	**7.2**	**7.7**	**3.3**	**2.0**	**22.8**	**4.8**	**5.2**	**0.9**	**8.0**	**1.9**	**2.1**	**4.3**	**5.2**	**3.4**	**9.2**	**1.8**	**2.6**	**0.5**	**1.1**	**0.2**	**0.3**
	Technological	20.3	2.8	1.8	1.2	1.2	0.3	1.3	0.3	5.1	0.9	0.0	0.3	0.4	0.0	2.2	1.1	0.2	0.1	0.4	0.2	0.5	0.0	0.0
	Technical	40.5	1.2	1.8	4.6	1.9	1.7	2.4	0.5	0.0	0.0	3.6	1.0	1.7	4.3	2.9	1.7	8.0	1.1	1.2	0.0	0.6	0.1	0.0
	Operational	39.1	1.5	3.6	1.9	0.2	0.0	19.1	4.0	0.0	0.0	4.4	0.6	0.0	0.0	0.1	0.6	1.0	0.6	0.9	0.2	0.1	0.0	0.2
Presidente Prudente	**Total**	**100.0**	**1.3**	**15.9**	**5.3**	**1.0**	**2.5**	**3.8**	**11.2**	**15.1**	**2.8**	**3.3**	**9.0**	**1.6**	**1.2**	**5.9**	**3.6**	**2.1**	**2.9**	**3.2**	**1.4**	**1.6**	**0.2**	**1.8**
	Technological	32.6	0.2	3.2	0.4	0.1	0.1	0.5	0.6	12.3	1.9	0.2	1.5	1.0	0.5	5.4	3.1	0.2	0.0	0.5	0.2	0.8	0.0	0.0
	Technical	43.1	0.3	9.7	3.6	0.8	2.4	3.3	7.2	0.1	0.7	2.4	7.3	0.5	0.7	0.3	0.2	0.6	0.9	0.9	0.3	0.6	0.2	0.0
	Operational	21.2	0.8	2.9	1.3	0.1	0.0	0.0	3.5	2.7	0.2	0.7	0.2	0.1	0.0	0.2	0.3	1.3	2.0	1.8	1.0	0.2	0.0	1.8
Mogi Mirim	**Total**	**100.0**	**6.0**	**3.7**	**13.2**	**1.8**	**8.2**	**3.3**	**1.3**	**7.0**	**1.7**	**3.5**	**1.8**	**1.8**	**0.2**	**6.9**	**10.0**	**5.3**	**13.9**	**2.0**	**1.9**	**2.8**	**0.0**	**3.7**
	Technological	23.5	0.6	1.7	0.7	1.8	0.3	0.7	0.8	6.4	1.1	0.2	0.6	1.0	0.1	2.9	1.6	1.3	0.3	0.3	0.4	0.9	0.0	0.1
	Technical	45.0	3.8	1.6	3.9	0.0	0.3	2.3	0.0	0.6	0.6	2.2	0.7	0.7	0.1	3.7	6.3	0.2	10.3	1.4	1.1	1.9	0.0	3.3
	Operational	31.6	1.7	0.4	8.6	0.0	7.7	0.3	0.5	0.0	0.0	1.1	0.5	0.1	0.1	0.4	2.1	3.8	3.2	0.3	0.5	0.0	0.0	0.3
Jaboticabal	**Total**	**100.0**	**0.9**	**12.1**	**3.2**	**4.4**	**0.2**	**2.1**	**7.8**	**11.9**	**4.4**	**0.8**	**11.4**	**1.0**	**5.4**	**2.4**	**10.5**	**10.2**	**1.1**	**1.3**	**3.1**	**3.5**	**0.2**	**2.2**
	Technological	28.8	0.6	2.9	1.0	0.0	0.2	1.1	0.4	10.7	3.9	0.1	3.1	0.1	0.3	2.0	1.0	0.0	0.0	0.1	0.0	1.1	0.0	0.0
	Technical	41.5	0.2	9.2	0.9	1.8	0.0	0.9	0.8	0.1	0.4	0.6	2.2	0.4	0.2	0.4	9.2	9.7	0.5	0.0	1.9	0.0	0.1	2.0
	Operational	29.6	0.1	0.0	1.4	2.5	0.0	0.0	6.7	1.1	0.1	0.1	6.1	0.5	4.8	0.1	0.3	0.5	0.5	1.1	1.2	2.4	0.1	0.1
Jaú	**Total**	**100.0**	**0.7**	**2.9**	**13.7**	**6.4**	**0.3**	**4.9**	**0.6**	**8.8**	**3.4**	**2.1**	**4.2**	**2.6**	**0.1**	**3.4**	**11.5**	**2.9**	**4.5**	**2.6**	**5.0**	**5.5**	**0.0**	**13.3**
	Technological	35.9	0.5	1.7	9.2	0.1	0.1	0.4	0.0	8.8	2.0	0.2	3.6	0.1	0.0	3.4	2.7	0.3	0.0	0.6	0.2	2.0	0.0	0.1
	Technical	37.6	0.0	1.1	2.3	6.3	0.1	2.2	0.4	0.0	1.3	1.9	0.1	0.7	0.1	0.1	8.1	0.7	4.3	1.2	2.0	0.1	0.0	4.5
	Operational	26.1	0.2	0.1	2.2	0.0	0.1	2.2	0.1	0.0	0.0	0.0	0.5	1.9	0.0	0.0	0.7	1.9	0.2	0.9	2.8	3.4	0.0	8.8

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
São João da Boa Vista	**Total**	**100.0**	**1.6**	**7.4**	**27.0**	**0.5**	**2.0**	**1.8**	**0.5**	**10.5**	**6.8**	**1.1**	**3.4**	**3.1**	**6.1**	**4.0**	**8.1**	**4.3**	**0.3**	**1.1**	**1.1**	**4.3**	**4.2**	**1.0**
	Technological	31.3	0.4	2.5	0.3	0.3	0.7	1.0	0.2	9.8	5.6	0.0	0.4	0.2	0.3	3.8	3.6	0.0	0.0	0.2	0.1	1.5	0.1	0.0
	Technical	44.1	0.2	3.4	17.6	0.2	0.4	0.5	0.3	0.7	0.0	0.1	2.9	2.6	5.7	0.2	0.9	0.1	0.3	0.8	0.7	2.3	4.1	0.3
	Operational	24.6	1.0	1.5	9.1	0.0	0.8	0.3	0.1	0.1	1.2	0.9	0.0	0.3	0.0	0.0	3.6	4.1	0.0	0.1	0.2	0.5	0.0	0.7
Franca	**Total**	**100.0**	**0.3**	**4.9**	**16.3**	**0.7**	**1.3**	**2.3**	**1.5**	**0.6**	**0.6**	**2.9**	**5.4**	**3.4**	**1.5**	**10.6**	**27.0**	**3.3**	**2.8**	**5.6**	**3.6**	**1.7**	**0.9**	**2.5**
	Technological	42.4	0.1	1.2	2.8	0.1	0.1	1.3	0.1	0.2	0.6	0.5	0.3	0.2	0.5	9.6	14.5	2.9	0.3	3.0	0.0	1.1	0.3	2.5
	Technical	37.2	0.2	1.1	6.0	0.6	1.0	0.8	1.4	0.3	0.0	2.4	4.8	0.2	0.4	1.1	12.3	0.2	1.3	1.7	0.5	0.6	0.2	0.0
	Operational	20.5	0.0	2.6	7.5	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.3	2.9	0.6	0.0	0.3	0.2	1.2	0.9	3.1	0.0	0.4	0.0
São Carlos	**Total**	**100.0**	**12.1**	**23.3**	**6.6**	**1.6**	**1.6**	**2.3**	**0.8**	**5.6**	**12.7**	**5.1**	**2.4**	**1.3**	**0.5**	**2.0**	**3.2**	**8.4**	**0.6**	**2.3**	**3.6**	**2.3**	**0.9**	**0.7**
	Technological	27.9	3.8	1.5	1.4	0.3	0.3	0.6	0.5	4.8	8.9	0.4	0.7	0.1	0.4	1.5	1.2	0.0	0.0	0.2	0.5	0.6	0.0	0.2
	Technical	40.0	8.0	4.2	4.9	1.2	1.1	1.1	0.3	0.8	3.8	0.5	1.7	0.8	0.1	0.5	1.3	1.8	0.4	1.6	2.8	1.6	0.9	0.5
	Operational	32.1	0.3	17.6	0.2	0.0	0.2	0.7	0.0	0.0	0.0	4.3	0.0	0.4	0.0	0.0	0.6	6.5	0.2	0.4	0.3	0.1	0.0	0.0
Rio Claro	**Total**	**100.0**	**33.4**	**8.8**	**3.2**	**0.6**	**8.5**	**6.6**	**2.7**	**17.3**	**2.4**	**0.9**	**2.4**	**1.5**	**0.2**	**2.0**	**2.9**	**0.6**	**0.2**	**0.3**	**3.1**	**1.9**	**0.1**	**0.2**
	Technological	19.7	4.9	1.3	0.5	0.0	0.1	0.9	0.3	6.4	0.4	0.1	0.5	0.0	0.1	1.2	1.5	0.2	0.1	0.2	0.3	0.7	0.0	0.1
	Technical	38.5	9.6	5.0	1.1	0.2	1.6	4.1	0.7	6.9	2.0	0.6	1.7	0.4	0.1	0.7	1.1	0.2	0.1	0.1	1.0	1.1	0.1	0.1
	Operational	41.8	18.9	2.5	1.7	0.4	6.8	1.6	1.7	4.0	0.0	0.2	0.3	1.0	0.0	0.1	0.3	0.2	0.0	0.0	1.8	0.1	0.1	0.0
Marília	**Total**	**100.0**	**2.5**	**4.8**	**6.6**	**0.6**	**1.9**	**0.8**	**18.0**	**6.7**	**7.7**	**7.9**	**0.9**	**0.2**	**0.5**	**9.5**	**7.3**	**1.6**	**4.0**	**1.0**	**11.5**	**1.1**	**0.2**	**4.6**
	Technological	33.0	1.6	2.0	0.8	0.0	0.3	0.6	0.7	5.8	7.7	0.0	0.8	0.2	0.1	9.0	1.3	0.8	0.0	0.1	0.0	0.9	0.1	0.1
	Technical	32.2	0.7	2.0	5.3	0.6	0.1	0.2	2.1	0.0	0.0	4.2	0.1	0.0	0.3	0.3	5.3	0.8	3.9	0.7	1.1	0.2	0.1	4.1
	Operational	34.9	0.2	0.8	0.5	0.1	1.5	0.0	15.1	0.9	0.0	3.7	0.0	0.0	0.0	0.2	0.7	0.0	0.1	0.2	10.4	0.0	0.0	0.4
Guaratinguetá	**Total**	**100.0**	**1.3**	**3.5**	**15.3**	**1.0**	**29.1**	**4.5**	**2.8**	**0.4**	**0.1**	**3.3**	**1.7**	**3.4**	**0.3**	**1.3**	**11.0**	**4.0**	**4.5**	**4.9**	**2.8**	**0.2**	**3.2**	**1.2**
	Technological	21.6	0.3	0.3	3.7	0.5	0.3	1.0	1.4	0.1	0.1	0.3	0.2	1.2	0.1	0.5	7.9	0.3	0.4	0.7	0.6	0.1	1.5	0.1

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	37.2	0.3	2.7	11.2	0.3	0.0	2.9	0.8	0.3	0.0	1.5	1.4	0.2	0.1	0.2	1.2	2.5	3.9	3.8	1.6	0.1	1.7	0.4
	Operational	41.2	0.7	0.5	0.5	0.2	28.8	0.7	0.6	0.0	0.0	1.5	0.1	2.0	0.1	0.6	1.9	1.2	0.2	0.4	0.6	0.0	0.0	0.7
Tatuí	**Total**	**100.0**	**4.3**	**7.1**	**11.0**	**2.2**	**2.7**	**7.1**	**9.9**	**1.1**	**1.6**	**3.4**	**1.0**	**3.5**	**2.6**	**1.2**	**17.5**	**4.4**	**1.2**	**2.9**	**7.9**	**1.8**	**1.0**	**4.2**
	Technological	21.7	0.7	1.0	7.7	0.3	1.0	2.1	0.5	0.5	1.1	0.6	0.8	0.9	1.0	0.1	0.2	0.5	0.0	0.3	0.4	1.3	0.4	0.4
	Technical	36.5	3.1	4.9	2.7	1.6	1.6	3.5	4.1	0.6	0.5	1.0	0.0	0.7	0.7	1.1	0.7	3.2	0.8	2.5	0.2	0.5	0.6	2.1
	Operational	41.4	0.6	1.3	0.5	0.3	0.1	1.5	5.4	0.0	0.1	1.8	0.2	1.9	0.9	0.0	16.6	0.7	0.3	0.1	7.3	0.1	0.0	1.8
Birigui	**Total**	**100.0**	**1.0**	**6.0**	**6.1**	**4.8**	**10.0**	**3.5**	**0.9**	**9.7**	**1.9**	**6.6**	**3.3**	**4.1**	**1.2**	**4.5**	**6.3**	**2.0**	**7.9**	**4.1**	**9.8**	**1.1**	**2.0**	**3.2**
	Technological	32.0	0.3	3.3	0.2	0.0	0.2	0.7	0.4	9.6	1.9	0.0	0.8	0.4	0.1	4.4	2.4	0.7	0.0	2.6	3.1	0.7	0.0	0.0
	Technical	40.7	0.5	0.9	3.9	1.2	7.8	2.8	0.2	0.1	0.0	5.8	2.2	0.3	1.0	0.0	2.9	1.2	2.7	1.5	1.8	0.0	2.0	1.8
	Operational	27.3	0.2	1.7	2.0	3.6	2.0	0.0	0.3	0.0	0.0	0.8	0.2	3.4	0.1	0.0	1.0	0.1	5.2	0.0	4.9	0.3	0.0	1.4
Ourinhos	**Total**	**100.0**	**4.2**	**6.3**	**5.3**	**0.2**	**2.4**	**6.0**	**3.8**	**12.0**	**6.0**	**1.6**	**2.6**	**8.2**	**1.4**	**7.8**	**7.8**	**11.9**	**1.3**	**5.6**	**0.9**	**2.4**	**0.4**	**2.0**
	Technological	32.5	0.6	2.2	0.7	0.0	0.2	0.3	0.4	7.9	5.9	0.0	2.2	0.8	1.1	5.4	1.8	0.1	0.6	0.4	0.3	1.3	0.1	0.1
	Technical	42.9	3.6	3.8	4.3	0.1	1.6	2.8	3.1	0.7	0.0	1.1	0.3	1.9	0.3	2.3	3.3	7.2	0.4	5.2	0.2	0.4	0.0	0.2
	Operational	24.6	0.0	0.3	0.2	0.0	0.6	2.8	0.3	3.5	0.0	0.5	0.1	5.5	0.0	0.0	2.7	4.7	0.3	0.0	0.4	0.7	0.3	1.7
Botucatu	**Total**	**100.0**	**2.0**	**22.5**	**10.6**	**3.4**	**4.7**	**2.0**	**2.8**	**4.6**	**3.4**	**1.6**	**1.6**	**6.4**	**0.4**	**8.0**	**2.8**	**1.8**	**5.4**	**1.1**	**1.1**	**2.8**	**9.2**	**2.2**
	Technological	22.6	0.1	1.3	0.9	1.0	0.1	0.6	0.3	4.5	3.3	0.7	0.6	0.2	0.1	4.8	1.1	0.9	0.4	0.7	0.1	0.8	0.0	0.0
	Technical	40.7	2.0	2.3	4.5	1.9	4.6	1.2	0.3	0.0	0.0	0.5	0.9	4.0	0.3	2.9	1.4	0.8	4.4	0.3	0.8	1.9	3.5	2.2
	Operational	36.7	0.0	18.9	5.2	0.5	0.0	0.2	2.2	0.1	0.0	0.3	0.1	2.3	0.0	0.2	0.2	0.0	0.6	0.0	0.3	0.1	5.7	0.0
Assis	**Total**	**100.0**	**0.6**	**16.5**	**5.3**	**1.9**	**5.5**	**1.4**	**0.5**	**15.9**	**7.4**	**1.1**	**7.4**	**2.6**	**0.5**	**3.7**	**8.2**	**3.2**	**2.2**	**1.0**	**1.5**	**4.4**	**0.1**	**9.4**
	Technological	34.8	0.1	3.3	0.8	0.1	0.0	0.3	0.2	13.6	6.9	0.0	2.7	0.2	0.2	1.7	2.0	0.0	0.0	0.0	0.1	2.4	0.0	0.0
	Technical	47.1	0.2	8.7	3.6	0.4	4.8	0.7	0.2	2.3	0.2	0.8	4.7	0.3	0.1	2.0	3.7	0.6	2.1	0.2	0.1	2.0	0.1	9.4
	Operational	18.1	0.2	4.5	0.9	1.4	0.6	0.4	0.0	0.0	0.2	0.2	0.0	2.0	0.2	0.0	2.5	2.6	0.0	0.8	1.3	0.0	0.0	0.0

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Araçatuba	**Total**	**100.0**	**2.8**	**5.6**	**4.5**	**0.4**	**6.3**	**8.5**	**7.8**	**8.1**	**6.5**	**1.9**	**4.4**	**2.5**	**0.4**	**4.1**	**9.8**	**1.4**	**2.6**	**3.6**	**2.9**	**14.0**	**0.3**	**1.5**
	Technological	36.6	0.4	2.3	1.0	0.0	0.1	1.6	0.6	8.0	6.5	0.1	2.7	0.2	0.2	3.8	6.4	0.1	0.2	0.3	0.3	1.8	0.0	0.0
	Technical	42.5	2.5	2.9	1.3	0.4	2.9	3.4	4.5	0.0	0.0	1.8	0.1	2.3	0.2	0.2	3.2	0.4	2.3	0.1	1.6	11.8	0.3	0.3
	Operational	20.9	0.0	0.4	2.2	0.0	3.3	3.5	2.7	0.0	0.0	0.0	1.6	0.1	0.0	0.1	0.2	1.0	0.1	3.2	1.0	0.4	0.0	1.2
São Joaquim da Barra	**Total**	**100.0**	**1.3**	**3.4**	**16.8**	**0.3**	**2.6**	**12.4**	**2.0**	**0.4**	**0.0**	**4.6**	**5.9**	**1.9**	**0.2**	**0.2**	**7.9**	**1.1**	**12.7**	**6.9**	**0.4**	**4.8**	**0.1**	**14.1**
	Technological	23.9	0.5	0.7	11.1	0.1	0.7	0.7	0.1	0.1	0.0	0.2	1.0	0.0	0.0	0.0	3.1	0.0	1.3	1.6	0.0	2.7	0.0	0.0
	Technical	54.5	0.8	0.0	3.7	0.2	1.9	11.5	1.8	0.0	0.0	0.2	0.0	1.9	0.2	0.1	4.6	0.3	8.5	5.3	0.4	0.7	0.1	12.0
	Operational	21.5	0.0	2.7	2.1	0.0	0.0	0.2	0.0	0.2	0.0	4.2	4.9	0.0	0.0	0.0	0.2	0.7	2.9	0.0	0.0	1.4	0.0	2.1
Catanduva	**Total**	**100.0**	**1.9**	**20.4**	**0.9**	**1.1**	**0.4**	**7.7**	**0.9**	**17.7**	**5.0**	**1.2**	**7.4**	**0.1**	**1.4**	**5.2**	**3.7**	**15.2**	**0.2**	**1.5**	**0.5**	**6.6**	**0.2**	**1.1**
	Technological	33.8	0.4	2.8	0.2	0.1	0.1	1.7	0.2	14.6	3.5	0.0	1.6	0.0	0.2	4.2	1.9	0.3	0.0	0.1	0.3	1.7	0.0	0.1
	Technical	35.5	0.7	10.4	0.3	0.5	0.3	3.3	0.3	3.0	1.5	0.8	5.8	0.1	0.1	1.1	1.6	0.9	0.2	0.2	0.2	4.0	0.1	0.1
	Operational	30.7	0.8	7.2	0.3	0.5	0.0	2.7	0.4	0.0	0.0	0.4	0.0	0.0	1.1	0.0	0.1	14.0	0.0	1.2	0.0	1.0	0.1	0.9
Caraguatatuba	**Total**	**100.0**	**0.3**	**5.0**	**12.1**	**0.0**	**0.2**	**0.1**	**1.7**	**0.9**	**0.1**	**44.8**	**0.3**	**0.6**	**6.1**	**9.6**	**2.5**	**0.4**	**5.5**	**0.6**	**0.8**	**0.4**	**0.3**	**4.6**
	Technological	47.5	0.0	0.8	1.0	0.0	0.0	0.0	0.1	0.6	0.0	37.0	0.0	0.2	0.1	1.6	0.1	0.4	0.7	0.0	0.1	0.2	0.1	4.5
	Technical	33.3	0.0	4.2	4.2	0.0	0.0	0.0	0.8	0.3	0.0	6.7	0.0	0.1	1.7	7.5	1.9	0.1	4.4	0.6	0.5	0.1	0.1	0.0
	Operational	16.1	0.3	0.1	6.9	0.0	0.1	0.0	0.8	0.0	0.0	1.1	0.3	0.3	4.4	0.5	0.4	0.0	0.4	0.0	0.1	0.0	0.1	0.1
Franco da Rocha	**Total**	**100.0**	**14.3**	**11.0**	**13.1**	**0.3**	**5.9**	**8.3**	**3.7**	**2.0**	**0.1**	**5.5**	**1.6**	**5.2**	**1.8**	**4.8**	**1.7**	**7.4**	**2.0**	**1.4**	**1.9**	**0.9**	**0.8**	**6.3**
	Technological	26.0	0.4	8.9	1.9	0.1	0.4	2.3	0.0	0.3	0.0	0.1	0.1	0.5	0.1	0.2	0.1	6.5	1.0	0.4	0.9	0.0	0.6	1.1
	Technical	41.9	3.3	0.2	7.1	0.2	5.4	4.4	3.5	0.6	0.1	0.1	1.0	1.1	1.5	3.3	0.9	0.4	0.8	0.8	0.8	0.8	0.2	5.2
	Operational	77.5	10.5	1.8	4.1	0.0	0.1	1.7	0.1	1.1	0.0	5.3	0.5	3.6	0.2	1.3	0.7	0.4	0.2	0.3	0.2	0.0	0.0	0.0
Pirassununga	**Total**	**100.0**	**1.3**	**6.1**	**7.7**	**1.0**	**0.4**	**25.8**	**0.8**	**8.1**	**4.9**	**0.7**	**3.1**	**2.4**	**0.3**	**2.2**	**13.0**	**2.0**	**2.7**	**6.9**	**2.3**	**4.9**	**0.0**	**3.5**
	Technological	21.8	0.3	2.2	0.5	0.0	0.2	0.7	0.1	7.1	2.4	0.1	1.3	0.2	0.2	1.9	2.4	0.4	0.0	0.2	0.2	1.5	0.0	0.0

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	40.0	0.5	3.9	0.2	0.2	0.0	6.3	0.6	1.0	2.6	0.6	1.4	1.4	0.1	0.1	5.9	1.5	2.7	4.4	0.5	3.3	0.0	2.8
	Operational	38.2	0.5	0.1	7.0	0.8	0.1	18.8	0.2	0.0	0.0	0.0	0.5	0.8	0.0	0.2	4.6	0.1	0.0	2.3	1.6	0.0	0.0	0.7
Lins	**Total**	**100.0**	**1.5**	**6.5**	**2.8**	**1.1**	**5.1**	**5.8**	**2.1**	**6.7**	**3.5**	**5.0**	**9.2**	**2.5**	**0.8**	**4.7**	**10.2**	**1.7**	**3.3**	**1.1**	**0.2**	**6.2**	**0.1**	**19.9**
	Technological	31.9	0.1	2.2	0.2	0.0	0.2	1.2	1.8	6.6	3.5	0.0	5.1	1.2	0.3	3.1	4.1	0.1	0.2	0.9	0.0	1.3	0.0	0.0
	Technical	50.4	0.3	4.2	0.3	1.1	4.9	4.5	0.3	0.0	0.0	3.5	4.1	0.7	0.5	0.1	5.6	0.3	3.0	0.2	0.1	2.4	0.0	14.4
	Operational	17.6	1.1	0.0	2.3	0.0	0.0	0.1	0.0	0.1	0.0	1.5	0.0	0.5	0.0	1.5	0.5	1.4	0.2	0.0	0.1	2.5	0.0	5.5
Amparo	**Total**	**100.0**	**6.2**	**2.9**	**20.5**	**1.2**	**2.4**	**6.9**	**1.2**	**10.7**	**2.6**	**0.9**	**4.0**	**0.7**	**0.8**	**6.3**	**10.6**	**2.0**	**0.1**	**3.0**	**6.3**	**3.3**	**0.0**	**6.3**
	Technological	31.1	0.9	2.5	0.7	0.9	0.5	1.1	0.2	10.5	2.6	0.0	1.6	0.1	0.2	4.6	1.7	0.5	0.0	0.7	0.1	1.5	0.0	0.0
	Technical	44.3	0.4	0.1	18.7	0.2	0.2	5.0	1.0	0.0	0.0	0.3	0.5	0.5	0.1	1.8	7.7	1.5	0.0	0.0	6.0	0.1	0.0	0.0
	Operational	23.5	4.9	0.3	1.1	0.1	1.6	0.7	0.0	0.2	0.0	0.6	1.8	0.1	0.5	0.0	1.2	0.0	0.1	2.3	0.2	1.6	0.0	6.3
Itapetininga	**Total**	**100.0**	**3.8**	**5.0**	**16.1**	**0.0**	**1.4**	**7.3**	**4.9**	**7.0**	**1.5**	**6.4**	**3.1**	**3.4**	**1.3**	**0.3**	**1.4**	**2.1**	**5.7**	**4.0**	**4.5**	**5.2**	**0.6**	**5.4**
	Technological	24.9	0.1	2.0	10.2	0.0	0.0	1.1	0.3	1.2	1.4	0.0	0.6	1.5	0.0	0.0	0.2	1.2	0.0	3.7	0.1	0.6	0.2	0.6
	Technical	48.2	1.3	3.0	5.1	0.0	0.8	5.4	0.8	5.9	0.1	6.2	2.6	0.4	0.0	0.3	1.0	0.1	4.8	0.3	2.2	4.4	0.2	3.6
	Operational	17.3	2.4	0.0	0.8	0.0	0.7	0.8	3.8	0.0	0.0	0.2	0.0	1.5	1.3	0.0	0.3	0.8	0.9	0.0	2.1	0.2	0.2	1.2
Andradina	**Total**	**100.0**	**0.1**	**8.2**	**2.9**	**0.2**	**2.1**	**5.8**	**3.0**	**30.3**	**2.4**	**9.4**	**3.2**	**2.2**	**0.0**	**3.2**	**2.6**	**1.4**	**2.9**	**0.0**	**2.4**	**3.0**	**0.1**	**14.4**
	Technological	24.4	0.0	1.8	0.2	0.0	0.0	2.5	0.6	8.7	2.3	0.1	0.8	2.1	0.0	2.3	1.3	0.2	0.1	0.0	0.0	1.3	0.0	0.0
	Technical	59.6	0.0	6.3	2.6	0.2	0.0	3.3	2.4	19.0	0.2	5.6	0.0	0.0	0.0	0.9	0.6	1.1	2.5	0.0	0.3	1.7	0.0	13.0
	Operational	16.0	0.1	0.1	0.1	0.0	2.0	0.1	0.0	2.7	0.0	3.7	2.4	0.0	0.0	0.1	0.8	0.0	0.3	0.0	2.2	0.0	0.0	1.4
Itapeva	**Total**	**100.0**	**4.3**	**8.3**	**18.4**	**0.3**	**4.1**	**1.7**	**16.8**	**0.4**	**0.2**	**0.6**	**0.7**	**0.2**	**0.1**	**2.2**	**11.0**	**14.0**	**6.8**	**2.4**	**1.9**	**4.9**	**0.5**	**0.2**
	Technological	29.6	0.0	3.3	0.2	0.0	2.3	1.0	16.5	0.3	0.2	0.4	0.3	0.2	0.0	0.4	2.5	0.5	0.0	0.2	0.0	1.3	0.0	0.1
	Technical	41.2	2.9	2.6	6.1	0.0	1.7	0.6	0.2	0.1	0.0	0.2	0.4	0.0	0.1	0.0	8.5	5.2	5.4	2.2	1.6	3.1	0.2	0.0
	Operational	29.2	1.4	2.4	12.1	0.3	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	1.8	0.0	8.3	1.4	0.0	0.3	0.5	0.2	0.1

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Barretos	**Total**	**100.0**	**0.1**	**6.2**	**19.5**	**1.0**	**0.1**	**24.0**	**6.1**	**4.2**	**8.5**	**1.0**	**4.8**	**2.5**	**4.1**	**1.3**	**3.6**	**1.6**	**0.8**	**2.5**	**5.8**	**1.2**	**0.0**	**0.9**
	Technological	30.4	0.1	2.5	9.5	0.2	0.1	1.8	1.5	0.6	7.9	0.1	1.7	0.1	2.0	0.9	0.2	0.2	0.0	0.2	0.0	0.8	0.0	0.1
	Technical	55.1	0.0	3.4	7.5	0.8	0.1	22.0	4.6	3.6	0.3	0.9	2.1	0.0	2.0	0.2	0.1	0.3	0.5	0.2	5.8	0.1	0.0	0.6
	Operational	14.4	0.0	0.3	2.5	0.0	0.0	0.2	0.0	0.0	0.2	0.0	1.0	2.4	0.1	0.3	3.3	1.0	0.3	2.2	0.0	0.2	0.0	0.2
Registro	**Total**	**100.0**	**0.2**	**12.6**	**10.1**	**0.5**	**0.0**	**5.7**	**6.4**	**10.7**	**5.6**	**0.0**	**4.5**	**1.3**	**7.5**	**12.9**	**5.4**	**4.1**	**1.0**	**4.7**	**1.2**	**1.5**	**2.1**	**1.5**
	Technological	37.0	0.0	2.6	0.1	0.0	0.0	0.8	1.6	10.7	5.6	0.0	0.7	0.6	0.0	12.4	0.6	0.3	0.0	0.3	0.0	0.4	0.0	0.1
	Technical	41.4	0.2	5.3	9.8	0.4	0.0	3.5	1.2	0.0	0.0	0.0	3.7	0.7	0.0	0.4	4.4	3.8	0.8	4.4	0.4	0.8	1.3	0.3
	Operational	21.2	0.0	4.7	0.1	0.1	0.0	1.4	3.6	0.0	0.0	0.0	0.2	0.0	7.5	0.1	0.4	0.0	0.1	0.0	0.8	0.4	0.8	1.1
Avaré	**Total**	**100.0**	**8.8**	**7.4**	**1.7**	**7.4**	**1.1**	**5.7**	**0.7**	**13.8**	**1.9**	**2.1**	**1.2**	**2.5**	**8.9**	**6.3**	**8.7**	**2.5**	**1.7**	**1.2**	**1.4**	**12.5**	**1.8**	**0.8**
	Technological	34.6	0.1	3.3	0.7	0.0	0.2	0.3	0.3	13.5	1.9	0.3	0.5	0.4	0.4	3.1	4.2	0.1	0.0	0.7	0.1	4.4	0.0	0.1
	Technical	43.8	8.1	3.8	0.8	2.9	0.3	1.2	0.3	0.2	0.0	1.2	0.1	1.8	7.7	3.2	1.4	1.1	1.6	0.5	0.1	7.0	0.0	0.6
	Operational	21.7	0.6	0.2	0.1	4.4	0.6	4.3	0.2	0.0	0.0	0.6	0.7	0.3	0.8	0.0	3.1	1.4	0.1	0.0	1.3	1.1	1.8	0.2
Piedade	**Total**	**100.0**	**1.0**	**7.2**	**24.1**	**1.1**	**1.5**	**3.0**	**6.7**	**1.7**	**0.2**	**14.5**	**0.9**	**0.5**	**0.2**	**1.8**	**13.3**	**4.7**	**6.5**	**1.0**	**1.7**	**4.9**	**0.7**	**2.9**
	Technological	29.1	0.7	1.6	17.5	0.0	0.2	0.4	0.1	1.6	0.1	0.7	0.6	0.0	0.1	0.2	1.2	0.3	1.7	0.7	0.1	1.5	0.0	0.1
	Technical	38.4	0.3	1.8	0.9	1.0	0.0	2.2	4.3	0.1	0.1	0.2	0.2	0.5	0.1	0.4	11.8	4.4	1.6	0.3	1.6	3.2	0.7	2.9
	Operational	32.5	0.0	3.8	5.7	0.1	1.3	0.5	2.3	0.1	0.0	13.6	0.1	0.0	0.0	1.2	0.2	0.1	3.2	0.0	0.1	0.2	0.0	0.0
Adamantina	**Total**	**100.0**	**1.4**	**21.7**	**1.8**	**6.4**	**0.3**	**2.4**	**0.5**	**14.8**	**13.3**	**7.7**	**2.7**	**0.6**	**0.2**	**7.5**	**4.1**	**2.8**	**0.4**	**2.1**	**2.5**	**3.3**	**0.2**	**3.6**
	Technological	39.4	0.1	3.0	0.7	0.1	0.1	0.4	0.5	11.6	13.2	0.1	0.8	0.3	0.1	5.0	2.2	0.1	0.0	0.4	0.2	0.8	0.0	0.0
	Technical	36.9	0.5	13.0	1.1	2.7	0.2	0.0	0.0	2.8	0.1	5.7	1.6	0.2	0.1	2.3	0.4	0.5	0.3	0.1	0.1	2.4	0.1	2.8
	Operational	23.6	0.8	5.7	0.1	3.6	0.1	2.0	0.0	0.4	0.0	2.0	0.3	0.1	0.0	0.2	1.5	2.2	0.1	1.6	2.3	0.0	0.1	0.8
Votuporanga	**Total**	**100.0**	**0.2**	**24.4**	**1.0**	**2.5**	**4.0**	**5.3**	**2.9**	**0.5**	**0.8**	**1.7**	**2.5**	**0.2**	**0.0**	**0.4**	**26.6**	**16.4**	**4.1**	**1.5**	**2.4**	**1.3**	**0.5**	**1.3**
	Technological	23.4	0.1	2.3	0.1	0.1	0.1	0.7	0.5	0.4	0.6	0.1	0.7	0.1	0.0	0.2	15.1	0.2	0.3	0.6	0.5	0.8	0.0	0.5

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	38.4	0.1	15.1	0.5	2.5	0.1	1.0	2.0	0.1	0.2	0.1	1.8	0.1	0.0	0.1	10.7	0.4	0.5	0.6	1.5	0.5	0.1	0.7
	Operational	38.1	0.1	7.1	0.4	0.0	3.9	3.6	0.4	0.0	0.1	1.6	0.0	0.0	0.0	0.1	0.9	15.8	3.4	0.3	0.5	0.0	0.4	0.1
Jales	**Total**	**100.0**	**2.6**	**21.7**	**25.4**	**0.4**	**2.2**	**0.8**	**2.1**	**21.9**	**4.9**	**1.1**	**4.0**	**0.4**	**0.0**	**4.9**	**4.9**	**0.3**	**0.4**	**0.5**	**0.3**	**0.8**	**0.3**	**0.0**
	Technological	29.7	0.1	3.1	0.2	0.0	0.1	0.2	0.6	16.2	0.0	0.0	0.7	0.1	0.0	3.3	3.9	0.1	0.0	0.1	0.0	0.5	0.0	0.0
	Technical	56.2	0.7	12.8	23.6	0.0	0.8	0.5	1.4	4.7	4.8	0.9	2.1	0.2	0.0	1.5	0.9	0.0	0.1	0.3	0.0	0.2	0.3	0.0
	Operational	14.2	1.8	5.7	1.6	0.3	1.3	0.0	0.0	1.0	0.0	0.1	1.1	0.1	0.0	0.1	0.1	0.1	0.3	0.0	0.2	0.1	0.0	0.0
Batatais	**Total**	**100.0**	**13.3**	**8.1**	**4.8**	**1.6**	**3.9**	**4.5**	**0.3**	**9.9**	**1.3**	**0.7**	**0.2**	**2.0**	**2.5**	**4.7**	**11.1**	**8.2**	**0.6**	**6.0**	**0.8**	**11.0**	**0.1**	**4.5**
	Technological	31.5	0.7	2.0	0.0	0.2	0.6	2.6	0.1	9.9	0.2	0.0	0.0	0.0	0.1	2.3	10.9	0.2	0.2	0.0	0.0	1.2	0.0	0.0
	Technical	28.8	0.0	2.2	4.4	1.1	0.5	1.4	0.2	0.0	1.1	0.0	0.0	1.2	1.8	2.3	0.3	5.4	0.4	2.8	0.5	2.0	0.0	1.2
	Operational	39.5	12.6	3.9	0.4	0.3	2.7	0.5	0.0	0.0	0.0	0.6	0.1	0.7	0.5	0.1	0.0	2.6	0.0	3.1	0.2	7.8	0.0	3.3
Tupã	**Total**	**100.0**	**6.4**	**6.5**	**15.3**	**0.2**	**0.9**	**7.8**	**2.9**	**13.7**	**6.9**	**2.4**	**0.7**	**0.3**	**4.5**	**7.6**	**2.7**	**2.4**	**1.2**	**4.8**	**1.0**	**1.7**	**0.7**	**9.2**
	Technological	37.1	0.1	3.8	0.9	0.1	0.1	0.4	0.4	11.4	6.9	0.1	0.6	0.2	0.1	7.4	2.5	0.1	0.0	0.9	0.2	0.7	0.0	0.3
	Technical	37.7	0.1	2.6	9.5	0.1	0.2	4.8	0.7	2.3	0.0	1.9	0.1	0.1	2.0	0.3	0.1	0.2	1.2	1.4	0.4	0.8	0.1	8.8
	Operational	25.1	6.2	0.1	4.9	0.1	0.7	2.5	1.8	0.0	0.0	0.4	0.1	0.1	2.5	0.0	0.1	2.1	0.0	2.4	0.3	0.1	0.6	0.1
Itanhaém	**Total**	**100.0**	**0.3**	**39.0**	**5.4**	**7.6**	**0.6**	**4.7**	**0.5**	**0.3**	**0.1**	**3.5**	**0.3**	**0.4**	**1.0**	**5.8**	**12.8**	**13.4**	**1.7**	**0.6**	**0.3**	**0.4**	**0.7**	**0.3**
	Technological	43.4	0.0	30.4	1.4	4.7	0.5	0.8	0.0	0.3	0.1	0.1	0.1	0.1	0.1	3.8	0.7	0.1	0.3	0.1	0.1	0.0	0.0	0.0
	Technical	34.1	0.3	7.4	4.1	2.9	0.1	1.4	0.5	0.0	0.0	3.4	0.1	0.3	0.7	1.9	6.7	1.5	1.4	0.5	0.3	0.4	0.0	0.3
	Operational	22.1	0.0	1.3	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.1	5.4	11.8	0.0	0.0	0.0	0.0	0.7	0.1
Fernandópolis	**Total**	**100.0**	**1.5**	**17.9**	**4.6**	**2.1**	**2.1**	**3.2**	**3.2**	**2.8**	**0.3**	**0.3**	**6.4**	**2.9**	**0.0**	**5.0**	**39.1**	**0.5**	**0.2**	**1.1**	**4.5**	**1.8**	**0.3**	**0.0**
	Technological	39.7	0.1	3.2	0.2	0.1	0.1	0.7	2.0	0.4	0.2	0.0	1.2	0.3	0.0	0.2	29.0	0.1	0.1	0.2	0.5	1.0	0.3	0.0
	Technical	38.8	0.3	14.7	0.5	1.4	0.2	1.7	1.3	2.4	0.1	0.3	4.4	0.2	0.0	2.3	6.5	0.4	0.1	0.9	0.3	0.9	0.0	0.0
	Operational	21.5	1.1	0.1	3.9	0.6	1.7	0.8	0.0	0.1	0.0	0.0	0.8	2.4	0.0	2.5	3.6	0.1	0.1	0.0	3.8	0.0	0.0	0.0

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Dracena	**Total**	**100.0**	**1.3**	**2.7**	**3.2**	**1.2**	**0.8**	**3.9**	**0.3**	**13.6**	**8.1**	**9.5**	**1.2**	**1.8**	**0.7**	**8.4**	**10.0**	**2.6**	**9.8**	**3.0**	**4.6**	**1.2**	**0.1**	**12.0**
	Technological	33.2	0.3	2.4	0.2	0.0	0.1	1.6	0.2	13.6	7.9	0.1	0.4	0.2	0.2	4.0	1.2	0.1	0.1	0.0	0.1	0.6	0.0	0.1
	Technical	40.6	0.1	0.3	3.0	1.1	0.7	0.3	0.0	0.0	0.0	0.5	0.0	1.6	0.0	4.5	7.8	0.3	5.3	3.0	0.2	0.6	0.1	11.2
	Operational	26.2	0.9	0.0	0.1	0.1	0.0	2.0	0.1	0.0	0.2	8.9	0.8	0.0	0.5	0.0	1.0	2.2	4.5	0.0	4.3	0.0	0.0	0.7
Capão Bonito	**Total**	**100.0**	**1.5**	**4.6**	**21.0**	**0.5**	**0.2**	**8.4**	**0.3**	**1.1**	**0.0**	**4.8**	**0.2**	**0.1**	**0.2**	**0.3**	**30.8**	**4.0**	**3.2**	**1.2**	**0.6**	**5.2**	**0.0**	**11.4**
	Technological	32.8	0.0	0.4	19.2	0.0	0.1	1.6	0.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	6.7	0.0	2.7	0.0	0.0	1.1	0.0	0.2
	Technical	51.3	0.4	4.1	1.4	0.0	0.1	5.3	0.1	0.2	0.0	1.7	0.1	0.0	0.2	0.3	16.3	4.0	0.5	1.1	0.5	3.5	0.0	11.2
	Operational	15.8	1.1	0.1	0.3	0.5	0.0	1.4	0.1	0.4	0.0	3.1	0.0	0.1	0.0	0.0	7.8	0.0	0.0	0.1	0.1	0.6	0.0	0.0
Ituverava	**Total**	**100.0**	**5.0**	**5.8**	**30.5**	**3.0**	**8.5**	**3.6**	**1.3**	**1.8**	**2.0**	**3.2**	**7.0**	**0.9**	**0.0**	**0.7**	**2.6**	**7.4**	**6.0**	**3.9**	**3.0**	**3.2**	**0.1**	**0.6**
	Technological	41.4	0.5	0.7	26.2	0.1	0.3	2.7	0.3	0.4	0.1	0.0	2.8	0.0	0.0	0.3	0.3	0.1	3.1	0.1	1.2	2.0	0.0	0.0
	Technical	38.9	0.4	2.3	3.3	2.7	8.2	0.7	0.2	0.5	1.8	0.0	3.6	0.9	0.0	0.3	2.0	6.9	2.7	0.3	0.0	1.2	0.1	0.6
	Operational	19.7	4.0	2.7	1.1	0.1	0.0	0.1	0.7	0.8	0.1	3.2	0.5	0.0	0.0	0.1	0.3	0.4	0.2	3.5	1.8	0.0	0.0	0.0
Novo Horizonte	**Total**	**100.0**	**3.2**	**8.5**	**9.7**	**0.1**	**2.2**	**1.8**	**3.0**	**0.2**	**0.7**	**6.0**	**8.3**	**3.2**	**0.0**	**0.0**	**0.5**	**0.5**	**1.4**	**0.5**	**2.3**	**16.3**	**0.3**	**8.6**
	Technological	16.8	0.0	2.8	1.8	0.1	0.0	0.4	0.5	0.2	0.5	0.0	5.4	0.3	0.0	0.0	0.2	0.0	0.0	0.4	0.1	2.5	0.0	1.8
	Technical	34.8	0.1	2.1	7.5	0.0	1.6	0.9	2.3	0.0	0.2	5.8	2.9	0.1	0.0	0.0	0.2	0.1	1.3	0.0	0.2	7.8	0.3	1.6
	Operational	25.7	3.2	3.6	0.5	0.0	0.6	0.4	0.2	0.0	0.0	0.2	0.0	2.8	0.0	0.0	0.2	0.4	0.1	0.2	2.0	6.1	0.0	5.3
Campos do Jordão	**Total**	**100.0**	**4.5**	**3.9**	**14.6**	**9.1**	**0.5**	**0.6**	**0.0**	**2.9**	**0.8**	**0.5**	**2.4**	**8.6**	**0.3**	**20.9**	**16.7**	**6.5**	**1.0**	**4.1**	**1.3**	**0.2**	**0.2**	**0.5**
	Technological	41.7	0.3	1.1	4.1	0.2	0.3	0.0	0.0	0.6	0.0	0.0	1.5	0.0	0.0	19.9	12.6	0.5	0.2	0.2	0.0	0.2	0.0	0.0
	Technical	41.0	0.6	2.6	10.5	5.3	0.0	0.6	0.0	0.0	0.0	0.5	0.0	5.0	0.2	0.5	3.1	6.0	0.6	3.7	1.0	0.0	0.2	0.5
	Operational	17.3	3.6	0.2	0.0	3.6	0.2	0.0	0.0	2.3	0.8	0.0	1.0	3.6	0.2	0.5	1.0	0.0	0.2	0.2	0.3	0.0	0.0	0.0
Nhandeara	**Total**	**100.0**	**4.7**	**4.1**	**1.8**	**0.6**	**1.7**	**23.3**	**20.4**	**0.5**	**0.0**	**6.2**	**3.9**	**9.5**	**0.9**	**0.4**	**4.5**	**0.8**	**1.5**	**7.5**	**0.2**	**4.8**	**0.1**	**2.6**
	Technological	31.6	0.0	2.4	0.1	0.0	1.4	0.4	16.4	0.5	0.0	0.7	0.2	3.9	0.2	0.3	2.6	0.0	0.0	0.1	0.2	2.0	0.1	0.0

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Microregion	Occupational category	Total	Employment in ST&I occupations by sector (1) – percentages (%)																				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Technical	28.0	4.7	0.2	1.3	0.6	0.3	0.6	2.9	0.0	0.0	3.9	1.7	5.4	0.7	0.1	0.9	0.1	1.4	0.9	0.0	2.4	0.0	0.0
	Operational	40.4	0.0	1.5	0.5	0.0	0.0	22.4	1.1	0.0	0.0	1.7	2.0	0.1	0.0	0.0	1.0	0.7	0.1	6.5	0.0	0.3	0.0	2.6
Paraibuna/ Paraitinga	**Total**	**100.0**	**2.0**	**2.5**	**8.1**	**1.8**	**0.3**	**0.4**	**13.9**	**1.3**	**0.0**	**29.2**	**1.3**	**0.0**	**6.8**	**0.4**	**2.8**	**0.3**	**4.7**	**7.9**	**6.6**	**2.7**	**0.0**	**6.7**
	Technological	26.7	0.1	0.8	0.7	0.5	0.2	0.4	0.0	1.3	0.0	15.7	0.0	0.0	0.1	0.1	0.1	0.0	3.4	1.9	0.1	1.0	0.0	0.2
	Technical	35.2	1.9	0.4	7.4	1.3	0.1	0.0	2.5	0.0	0.0	5.2	0.8	0.0	6.1	0.3	0.1	0.3	1.3	5.3	0.1	1.7	0.0	0.3
	Operational	38.0	0.0	1.3	0.0	0.0	0.0	0.0	11.4	0.0	0.0	8.3	0.5	0.0	0.6	0.0	2.6	0.0	0.0	0.6	6.4	0.0	0.0	6.2
Auriflama	**Total**	**100.0**	**0.8**	**14.7**	**0.8**	**6.0**	**3.3**	**0.4**	**0.0**	**5.6**	**0.2**	**36.3**	**0.2**	**0.0**	**0.2**	**1.2**	**6.8**	**0.2**	**0.0**	**19.7**	**1.5**	**1.7**	**0.2**	**0.0**
	Technological	58.9	0.4	6.4	0.4	2.5	0.0	0.0	0.0	0.4	0.2	28.6	0.2	0.0	0.0	0.0	5.4	0.2	0.0	13.5	0.2	0.4	0.0	0.0
	Technical	30.1	0.4	8.3	0.2	1.0	0.0	0.0	0.0	5.2	0.0	6.4	0.0	0.0	0.2	1.0	1.5	0.0	0.0	5.2	0.0	0.6	0.0	0.0
	Operational	11.0	0.0	0.0	0.2	2.5	3.3	0.4	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.0	1.2	0.6	0.2	0.0
Bananal	**Total**	**100.0**	**3.9**	**6.1**	**46.1**	**0.0**	**3.1**	**0.0**	**0.0**	**0.0**	**6.1**	**5.7**	**4.8**	**0.0**	**0.0**	**0.9**	**9.6**	**0.4**	**0.0**	**1.8**	**6.6**	**4.4**	**0.0**	**0.4**
	Technological	62.3	0.0	0.9	41.7	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.4	0.0	0.0	0.4	9.2	0.0	0.0	0.0	0.9	2.2	0.0	0.4
	Technical	22.4	3.9	5.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.4	0.4	0.4	0.0	1.8	0.9	2.2	0.0	0.0
	Operational	15.4	0.0	0.0	1.3	0.0	3.1	0.0	0.0	0.0	0.0	1.8	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0

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Detailed Table 8.3 (continued)
Employment in ST&I occupations by sector of economic activity (1), occupational category and microregion – São Paulo State, 2006

Source: Ministério do Trabalho e Emprego, (MTE), RAIS 2006.

Note: No information on sector groups for 0.26% of the ST&I workforce in São Paulo State.

(1) CNAE 2.0 (National Classification of Economic Activities, version 2.0) – sector groups:

1.Machinery, equipment, appliances
2. Commerce, vehicle repair, personal & domestic articles, lodging, catering
3. Corporate services
4. Automotive manufacturing
5. Metalworking
6. Chemicals, petrochemicals
7. Construction
8. Public administration, defense, social security, international organizations
9. Education
10. Transport, storage
11. Manufacturing of food, beverages & tobacco products
12. Production & distribution of electricity, gas, water
13. Financial intermediation, insurance, pensions
14. Healthcare, veterinary services
15. Social, collective, personal & domestic services
16. Manufacturing of wood, pulp & paper products, publishing, printing
17. Communications
18. Manufacturing of textiles, clothing, leather goods, footwear
19. Manufacturing of furniture, sundry industries, recycling
20. Agriculture, silviculture, forestry, fishing
21. Real estate, rental
22. Mining

Detailed Table 8.4
Employment by sector of economic activity (1) and microregion – São Paulo State, 2006

Microregion	Total		Employment by sector (1) – percentages (%)																					
	Abs. nos	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Total	**10,315,118**		**314,660**	**2,290,947**	**1,383,914**	**253,636**	**265,412**	**475,239**	**372,986**	**1,468,277**	**336,571**	**480,396**	**320,014**	**54,930**	**268,588**	**425,806**	**397,437**	**183,633**	**113,663**	**344,319**	**128,810**	**361,829**	**59,581**	**14,470**
		100.0	**3.1**	**22.2**	**13.4**	**2.5**	**2.6**	**4.6**	**3.6**	**14.2**	**3.3**	**4.7**	**3.1**	**0.5**	**2.6**	**4.1**	**3.9**	**1.8**	**1.1**	**3.3**	**1.2**	**3.5**	**0.6**	**0.1**
São Paulo	4,548,623	100.0	2.3	21.2	16.8	2.0	2.1	3.5	4.1	19.4	3.3	4.5	1.1	0.5	3.6	4.6	3.7	1.5	1.6	2.4	0.9	0.1	0.7	0.0
Campinas	675,182	100.0	4.6	24.5	11.4	4.6	2.7	7.3	2.8	8.0	4.7	5.5	2.5	1.0	1.8	3.1	4.2	1.7	0.9	5.6	1.1	1.3	0.5	0.1
Osasco	471,836	100.0	3.1	20.8	28.9	1.4	2.4	5.2	2.8	7.7	1.7	6.2	2.1	0.1	4.3	2.7	3.0	3.1	1.2	1.3	0.9	0.1	0.9	0.2
São José dos Campos	293,758	100.0	4.2	23.5	12.8	11.5	4.5	3.8	3.4	10.1	3.2	3.4	1.6	0.4	1.6	4.4	4.2	1.9	0.7	1.3	1.0	1.8	0.5	0.3
Santos	281,594	100.0	0.1	26.1	15.5	0.3	2.3	1.9	5.6	12.2	3.9	10.9	0.6	0.4	1.8	4.1	9.7	0.6	0.8	0.4	1.1	0.4	1.1	0.2
Guarulhos	275,846	100.0	5.1	20.7	7.6	4.9	7.1	10.3	2.9	6.7	1.9	12.6	1.9	0.5	1.3	2.7	2.6	2.4	0.5	4.3	2.9	0.2	0.5	0.3
Sorocaba	270,227	100.0	7.7	23.9	8.7	4.0	6.2	7.6	3.3	9.2	2.8	3.6	3.1	0.3	1.6	3.9	3.1	2.0	0.6	3.8	1.9	2.3	0.3	0.2
Ribeirão Preto	242,150	100.0	4.1	27.5	9.5	0.4	2.0	3.4	3.7	7.9	4.8	4.3	9.4	0.2	2.9	6.6	3.9	1.5	0.9	1.2	1.1	4.0	0.5	0.2
Mogi das Cruzes	202,637	100.0	4.3	20.0	17.3	2.0	4.9	7.5	4.7	7.6	2.5	5.2	1.4	0.6	1.5	3.2	3.2	3.9	0.6	4.0	2.3	2.6	0.4	0.5
Itapecerica da Serra	180,974	100.0	4.3	20.1	26.0	2.1	3.1	9.3	3.6	10.6	1.6	4.0	1.1	0.2	0.8	2.4	2.9	1.8	0.5	1.9	2.1	0.5	0.7	0.2
Jundiaí	158,230	100.0	2.7	26.2	12.1	4.6	4.9	10.0	3.0	7.0	2.9	6.1	5.0	0.1	1.3	3.5	2.6	3.0	0.4	2.8	0.6	0.8	0.3	0.1
São José do Rio Preto	155,128	100.0	1.7	27.2	4.9	0.9	2.9	2.9	3.0	9.0	3.8	3.5	6.2	0.3	3.5	6.6	5.0	1.1	0.9	3.0	4.8	8.3	0.5	0.1
Piracicaba	141,868	100.0	8.4	24.9	7.1	1.9	3.8	3.6	6.4	7.0	4.5	4.3	6.3	0.5	1.3	3.8	3.7	2.8	0.4	4.7	1.1	2.8	0.4	0.3
Limeira	131,612	100.0	4.3	22.2	3.5	6.0	5.4	10.5	3.2	9.3	2.8	4.3	4.8	0.4	1.2	4.1	2.9	3.5	0.5	1.3	3.2	5.9	0.3	0.3
Bauru	124,393	100.0	3.0	25.4	7.7	0.2	0.8	3.4	5.5	9.6	4.9	3.8	5.5	1.0	2.7	4.7	4.5	3.5	1.6	2.0	0.7	9.0	0.4	0.1
Araraquara	123,868	100.0	4.9	20.2	6.1	1.8	1.3	2.1	2.5	9.2	3.1	3.6	8.2	0.6	1.4	3.1	2.1	0.6	0.5	8.7	0.4	18.9	0.5	0.1
Bragança Paulista	122,883	100.0	4.2	19.9	23.4	2.9	2.7	4.5	2.0	7.7	2.5	2.9	2.9	0.8	0.9	3.4	2.9	1.8	0.4	7.4	1.6	4.5	0.3	0.2
Presidente Prudente	103,350	100.0	0.7	23.4	4.8	0.5	0.8	4.6	3.2	16.0	4.4	3.6	10.5	1.0	2.0	4.9	4.4	1.2	0.7	4.9	0.5	7.5	0.4	0.1

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Detailed Table 8.4 (continued)
Employment by sector of economic activity (1) and microregion – São Paulo State, 2006

Microregion	Total		Employment by sector (1) – percentages (%)																					
	Abs. nos.	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Mogi Mirim	93,798	100.0	4.1	19.5	6.5	8.3	2.9	4.2	4.0	9.6	2.3	3.3	3.2	0.8	1.1	3.9	4.8	4.0	0.3	4.3	2.7	9.5	0.4	0.2
Jaboticabal	90,158	100.0	2.3	21.4	4.0	0.2	2.1	4.0	2.2	11.3	3.2	2.4	12.5	0.4	1.6	2.7	4.6	0.4	0.4	0.8	0.5	22.7	0.2	0.1
Jaú	85,521	100.0	2.2	19.4	3.4	1.5	1.0	3.6	1.1	8.8	2.0	3.9	13.1	0.5	1.0	4.3	3.6	2.4	0.4	13.7	1.7	11.8	0.3	0.1
São João da Boa Vista	81,286	100.0	2.2	23.4	2.0	2.4	2.8	6.0	2.1	11.0	3.3	2.3	4.7	0.5	1.5	4.5	4.3	0.7	0.5	2.7	0.7	22.2	0.1	0.4
Franca	79,308	100.0	0.7	22.7	4.0	0.0	0.8	5.3	2.2	6.7	3.4	2.1	1.9	0.7	1.8	4.3	2.6	1.1	0.7	30.7	0.4	7.5	0.2	0.1
São Carlos	76,836	100.0	13.0	22.3	5.4	1.0	2.9	2.5	3.4	7.4	6.7	4.1	6.3	0.6	2.1	2.9	3.2	1.0	0.6	2.6	2.0	9.1	0.4	0.6
Rio Claro	70,758	100.0	16.1	16.4	4.8	0.3	2.9	8.6	2.2	15.1	2.5	3.7	4.5	0.3	1.2	2.6	3.1	1.5	0.4	1.4	4.4	7.3	0.2	0.4
Marília	67,858	100.0	6.2	22.8	4.7	0.1	3.0	2.6	4.2	11.9	5.0	3.1	11.2	1.0	1.7	7.2	4.1	1.1	0.6	1.3	0.4	7.6	0.3	0.0
Guaratinguetá	67,335	100.0	1.7	26.2	5.7	8.0	2.4	6.8	2.8	14.7	3.4	2.9	2.0	0.6	1.3	4.8	6.9	2.7	1.3	1.3	0.4	3.1	0.2	0.7
Tatuí	60,278	100.0	2.5	17.3	13.4	4.7	4.3	7.5	2.7	9.8	1.6	4.1	9.0	0.6	0.9	2.0	1.6	1.2	0.3	6.6	3.0	6.5	0.2	0.2
Birigui	56,379	100.0	0.6	17.5	1.8	0.2	1.5	3.6	1.8	12.4	1.7	2.1	2.5	0.8	1.1	3.1	2.5	2.8	0.5	32.8	3.4	6.9	0.1	0.1
Ourinhos	53,651	100.0	2.3	20.7	2.1	0.1	1.3	3.3	1.4	13.0	2.5	2.2	8.8	1.7	1.4	4.4	2.4	1.5	0.5	7.9	2.7	19.6	0.1	0.2
Botucatu	52,774	100.0	0.2	19.4	6.2	7.8	1.6	3.0	4.9	7.2	7.1	3.4	2.4	0.5	1.4	4.0	4.4	2.7	0.5	7.0	0.3	15.7	0.1	0.3
Assis	52,145	100.0	0.3	23.9	3.3	0.0	1.1	1.3	1.6	15.4	3.1	2.5	9.4	0.6	1.3	2.4	4.7	0.5	0.5	0.3	0.3	26.9	0.1	0.1
Araçatuba	51,157	100.0	2.1	26.3	4.6	0.0	0.8	5.2	2.4	11.1	4.4	3.1	7.9	0.8	1.8	4.9	5.4	0.6	0.9	3.1	2.6	11.6	0.2	0.1
São Joaquim da Barra	48,559	100.0	2.5	16.1	1.3	0.6	3.2	4.9	1.7	12.1	1.3	2.8	22.3	0.2	1.0	2.7	4.1	0.4	0.4	1.1	0.3	20.9	0.2	0.0
Catanduva	48,542	100.0	3.6	23.8	3.3	0.2	1.6	1.5	1.9	13.3	1.8	2.9	11.0	0.2	1.6	4.4	3.6	1.0	0.4	1.7	1.5	20.3	0.2	0.0
Caraguatatuba	42,257	100.0	0.0	43.3	10.1	0.0	0.2	0.4	3.5	17.7	2.6	3.6	0.3	0.8	1.0	5.3	8.2	0.2	0.6	0.2	0.5	0.6	0.4	0.6
Franco da Rocha	41,888	100.0	2.9	26.3	6.9	0.6	3.9	9.1	3.5	14.9	1.8	5.6	1.7	0.5	1.4	5.1	4.2	4.7	0.5	3.0	2.5	0.3	0.6	0.3
Pirassununga	41,597	100.0	3.2	20.1	1.8	0.1	1.3	8.5	1.1	12.0	3.2	4.5	7.3	1.0	1.1	2.8	3.1	3.7	0.3	2.5	3.4	18.8	0.1	0.1

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Detailed Table 8.4 (continued)
Employment by sector of economic activity (1) and microregion – São Paulo State, 2006

Microregion	Total		Employment by sector (1) – percentages (%)																					
	Abs. nos	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Lins	38,136	100.0	0.2	15.1	2.3	0.1	0.8	4.7	3.4	8.8	2.5	0.8	24.1	0.9	1.2	3.2	3.1	0.2	0.5	10.4	0.1	17.4	0.1	0.1
Amparo	37,220	100.0	2.0	25.9	4.4	1.7	1.9	5.8	2.4	12.2	1.7	1.5	9.0	1.1	1.4	3.6	3.3	2.8	0.3	10.6	0.5	7.4	0.2	0.4
Itapetininga	35,530	100.0	0.6	22.6	6.2	0.0	0.1	3.3	2.0	11.1	2.7	1.8	4.5	0.9	1.0	3.2	4.5	5.2	0.5	4.6	0.7	24.3	0.2	0.1
Andradina	34,313	100.0	0.1	19.2	2.7	0.1	0.3	13.4	3.4	17.1	4.1	4.1	10.0	2.2	1.2	3.0	3.3	1.9	0.6	0.2	0.3	12.5	0.2	0.2
Itapeva	33,748	100.0	0.1	24.7	3.3	0.0	1.4	2.6	0.9	21.9	1.9	5.1	1.2	1.0	1.1	3.2	3.0	7.9	0.5	0.4	0.2	18.3	0.3	1.1
Barretos	32,087	100.0	0.4	19.2	2.7	0.1	0.4	2.2	6.9	11.0	3.6	2.3	18.9	1.0	1.1	8.8	3.7	0.5	0.5	0.8	0.2	15.5	0.2	0.0
Registro	29,940	100.0	0.0	25.5	2.8	0.1	0.5	3.3	3.2	22.3	1.5	4.6	2.9	1.2	1.3	5.7	2.3	0.7	0.5	0.7	0.2	19.7	0.1	0.9
Avaré	29,480	100.0	0.6	24.4	1.6	0.3	1.1	2.7	1.6	16.2	2.3	2.8	2.5	0.9	1.3	2.6	4.0	1.6	0.4	5.0	0.6	27.2	0.2	0.1
Piedade	25,474	100.0	2.2	22.8	13.2	0.2	1.5	1.3	0.5	14.4	1.6	2.0	5.5	1.5	1.1	2.1	5.4	1.3	0.2	1.6	0.2	21.3	0.1	0.2
Adamantina	24,822	100.0	0.7	21.7	5.2	0.2	0.4	1.9	1.2	17.1	3.1	3.3	8.0	0.5	1.6	4.8	3.9	0.4	0.6	9.1	2.0	14.1	0.2	0.1
Votuporanga	23,232	100.0	0.5	25.1	2.1	6.9	1.1	1.7	3.4	14.2	3.5	1.4	4.7	1.0	1.5	4.2	5.5	1.3	0.7	2.8	11.6	6.5	0.2	0.1
Jales	22,222	100.0	0.5	24.2	7.7	0.3	1.3	1.8	1.5	26.5	1.8	2.6	8.3	0.5	1.4	4.3	3.5	0.5	0.8	3.2	0.7	8.2	0.2	0.2
Batatais	20,185	100.0	3.5	18.5	2.2	2.0	3.8	12.7	2.8	13.4	1.7	2.6	1.7	0.2	1.2	1.9	7.7	0.4	0.7	4.1	0.5	18.3	0.0	0.0
Tupã	20,080	100.0	1.1	25.7	2.8	0.3	1.1	1.2	2.1	14.2	3.2	2.4	6.3	0.7	1.4	7.0	5.0	1.0	0.8	5.2	1.6	16.9	0.1	0.0
Itanhaém	19,786	100.0	0.1	37.6	4.9	0.0	0.2	0.6	4.4	26.2	2.2	3.7	0.8	1.8	1.5	1.1	9.2	0.3	0.6	0.2	0.2	3.5	0.3	0.4
Fernandópolis	19,059	100.0	0.3	23.5	1.3	0.4	2.2	2.6	6.2	18.4	4.7	3.1	11.7	0.7	1.3	3.7	2.0	0.8	0.6	3.2	3.2	9.9	0.1	0.1
Dracena	18,572	100.0	1.0	26.3	1.6	0.2	0.4	14.5	3.2	18.1	3.2	2.1	3.1	1.2	1.5	4.4	2.8	0.4	0.5	0.8	1.3	13.2	0.1	0.3
Capão Bonito	16,039	100.0	0.0	19.4	3.2	0.0	0.1	3.6	0.9	25.6	0.7	1.9	0.5	0.4	0.9	2.8	3.9	2.3	0.4	0.4	0.4	30.1	0.1	2.5
Ituverava	13,961	100.0	1.2	26.4	1.9	0.1	0.5	3.4	1.5	20.0	3.6	3.6	14.1	0.4	1.5	4.5	4.1	0.5	0.6	1.8	2.5	7.4	0.1	0.2
Novo Horizonte	12,864	100.0	0.4	19.5	0.8	0.0	0.4	2.0	0.9	14.4	1.8	1.7	9.8	0.7	1.1	1.8	3.0	1.6	0.4	8.1	1.0	28.7	1.7	0.1
Campos do Jordão	12,092	100.0	0.0	39.5	7.9	0.0	0.1	0.2	2.5	20.9	3.4	1.5	4.0	0.6	1.1	6.6	4.3	0.5	0.7	1.3	0.4	3.6	0.8	0.2

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Detailed Table 8.4 (continued)
Employment by sector of economic activity (1) and microregion – São Paulo State, 2006

Microregion	Total		Employment by sector (1) – percentages (%)																					
	Abs. nos.	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Nhandeara	11,283	100.0	0.2	13.6	4.7	0.2	4.6	2.4	5.8	16.2	2.0	1.2	13.4	0.5	1.3	2.0	4.0	0.8	0.4	2.3	1.6	22.4	0.4	0.2
Paraibuna/ Paraitinga	9,229	100.0	1.6	18.1	2.5	6.1	2.2	2.3	4.1	26.7	0.2	2.7	2.8	0.6	0.8	1.7	2.6	0.0	0.3	0.0	0.2	23.1	0.2	1.1
Auriflama	6,070	100.0	1.2	16.0	0.7	0.1	0.3	0.0	0.7	31.5	1.7	1.2	0.8	0.5	1.2	1.8	2.7	0.3	0.6	18.7	1.3	18.0	0.8	0.0
Bananal	3,450	100.0	0.0	17.3	0.3	0.7	0.1	0.0	3.6	38.3	0.0	1.2	3.9	0.4	0.8	0.1	5.3	5.6	0.4	0.1	0.0	21.7	0.0	0.0

Source: Ministério do Trabalho e Emprego, (MTE), RAIS 2006.

(1) CNAE 2.0 (National Classification of Economic Activities, version 2.0) – sector groups:

1. Machinery, equipment, appliances
2. Commerce, vehicle repair, personal & domestic articles, lodging, catering
3. Corporate services
4. Automotive manufacturing
5. Metalworking
6. Chemicals, petrochemicals
7. Construction
8. Public administration, defense, social security, international organizations
9. Education
10. Transport, storage
11. Manufacturing of food, beverages & tobacco products
12. Production & distribution of electricity, gas, water
13. Financial intermediation, insurance, pensions
14. Healthcare, veterinary services
15. Social, collective, personal & domestic services
16. Manufacturing of wood, pulp & paper products, publishing, printing
17. Communications
18. Manufacturing of textiles, clothing, leather goods, footwear
19. Manufacturing of furniture, sundry industries, recycling
20. Agriculture, silviculture, forestry, fishing
21. Real estate, rental
22. Mining

Detailed Table 8.5
Firms introducing innovations and innovation rate by type of innovation, degree of novelty and mesoregion – Brazil & São Paulo State, 2003-2005

Brazil, São Paulo State & mesoregions	Total firms (abs. nos.)	Firms introducing innovations										
		Total (abs. nos.)	Innovation rate (%)	Product				Process				Product & process (Abs. nos.)
				Total (abs. nos.)	Product innovation rate (%)	New to firm (abs. nos.)	New to home market (abs. nos.)	Total (abs. nos.)	Process innovation rate (%))	New to firm (abs. nos.)	New to home market (abs. nos.)	
Brazil	**91,055**	**30,377**	**33.4**	**17,784**	**58.5**	**15,177**	**2,956**	**24,504**	**80.7**	**23,202**	**1,509**	**11,910**
São Paulo State	**31,990**	**10,734**	**33.6**	**6,525**	**60.8**	**5,227**	**1,512**	**8,313**	**77.4**	**7,667**	**710**	**4,104**
Marília	423	264	62.5	252	95.2	214	38	190	71.8	154	37	177
Araraquara	727	285	39.3	114	40.1	93	22	233	81.7	228	5	62
Campinas	3,604	1,411	39.1	940	66.6	783	180	1,003	71.1	939	75	532
Ribeirão Preto	1,602	555	34.7	287	51.6	232	54	449	81.0	438	12	181
São Paulo Metropolitan Area	16,545	5,478	33.1	3,433	62.7	2,668	925	4,093	74.7	3,679	454	2,049
Presidente Prudente	376	124	33.1	71	57.0	70	1	90	72.1	90	-	36
Assis	403	132	32.8	47	35.2	41	6	117	88.8	116	1	32
Piracicaba	1,679	546	32.5	361	66.2	322	43	494	90.6	479	19	310
São Paulo Macrometropolitan Area	2,408	776	32.2	403	51.9	319	103	706	91.0	669	45	333
Araçatuba	536	171	31.9	91	53.0	89	2	119	69.8	117	2	39
Itapetininga	529	165	31.2	40	24.5	39	2	159	96.8	158	1	35
Vale do Paraíba Paulista	965	295	30.6	173	58.6	148	28	255	86.5	218	38	133
São José do Rio Preto	1,086	316	29.1	194	61.4	109	85	203	64.2	196	6	81
Bauru	963	203	21.0	112	55.5	101	15	187	92.4	181	7	97
South Coast of São Paulo State	143	12	8.5	8	64.9	-	8	12	100.0	4	8	8

Source: IBGE, PINTEC 2005.

Notes: 1. The data refer to firms that introduced technologically new or substantially improved products and/or processes, and firms with projects that had been abandoned or were incomplete at end-2005.

2. The innovation rate is the number of firms introducing technologically new or substantially improved products and/or processes during the base period for the PINTEC survey and/or implementing projects that had been abandoned or were incomplete at end-2005 as a percentage of the total number of firms covered by the survey.

Detailed Table 8.6
Importance attributed to innovation activities by mesoregion – Brazil & São Paulo State, 2003-2005

Brazil, São Paulo State & mesoregions	Total	Importance attributed to innovations by innovative firms (%)																							
		Intramural R&D			Externally acquired R&D			Other externally acquired knowledge			Externally acquired software			Purchases of plant & equipment			Training			Market introduction of technological innovations			Industrial design & other technical preparations		
		Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none
Brazil	**100.0**	**16.6**	**3.3**	**80.1**	**4.0**	**1.0**	**95.0**	**7.4**	**3.6**	**89.1**	**10.0**	**4.0**	**86.0**	**65.3**	**16.0**	**18.7**	**44.7**	**14.5**	**40.8**	**18.0**	**10.2**	**71.8**	**25.9**	**13.5**	**60.6**
São Paulo State	**100.0**	**23.5**	**4.1**	**72.4**	**5.2**	**1.0**	**93.7**	**6.9**	**4.0**	**89.1**	**12.3**	**4.6**	**83.1**	**61.9**	**16.0**	**22.1**	**45.5**	**13.8**	**40.8**	**21.6**	**11.0**	**67.4**	**28.6**	**14.7**	**56.7**
São José do Rio Preto	100.0	14.8	1.3	83.9	1.5	-	98.5	7.0	1.2	91.9	10.5	2.5	87.0	43.1	21.8	35.1	37.6	16.7	45.6	25.6	19.2	55.2	27.2	20.2	52.6
Ribeirão Preto	100.0	17.5	2.6	80.0	2.6	0.8	96.6	5.2	1.1	93.7	6.8	2.3	90.8	76.3	11.6	12.1	62.0	6.4	31.6	23.2	8.6	68.2	22.3	22.5	55.2
Araçatuba	100.0	8.4	1.9	89.7	0.6	0.6	98.7	20.4	-	79.6	-	1.3	98.7	59.0	5.5	35.4	32.9	8.1	59.0	2.7	5.9	91.5	35.6	13.3	51.0
Bauru	100.0	12.0	1.6	86.4	4.4	1.9	93.7	5.4	1.2	93.4	4.8	1.9	93.3	73.5	19.0	7.6	54.4	7.8	37.7	22.0	5.2	72.8	12.2	2.8	85.0
Araraquara	100.0	7.8	4.8	87.5	2.7	0.4	97.0	3.4	9.7	86.9	4.2	1.4	94.4	76.2	6.8	17.0	23.3	18.3	58.4	10.9	21.2	67.9	25.6	2.0	72.5
Piracicaba	100.0	15.4	1.6	83.0	3.4	0.7	95.9	4.8	3.3	91.9	12.6	4.0	83.4	69.7	21.6	8.7	35.2	15.3	49.5	17.3	3.1	79.7	35.6	19.6	44.9
Campinas	100.0	26.2	2.1	71.6	4.6	0.7	94.7	5.4	4.7	89.9	11.3	10.4	78.3	58.1	15.8	26.1	41.6	11.6	46.8	18.1	13.1	68.8	25.2	15.8	59.0
Presidente Prudente	100.0	39.5	0.8	59.7	27.8	-	72.2	6.9	27.8	65.2	0.8	-	99.2	63.2	36.8	-	81.0	10.4	8.6	34.3	11.5	54.2	82.1	-	17.9
Marília	100.0	43.0	1.9	55.1	-	0.8	99.2	33.4	13.1	53.5	24.6	2.5	72.9	60.3	12.9	26.8	57.1	16.2	26.7	29.9	24.9	45.1	40.1	24.4	35.5
Assis	100.0	3.1	5.5	91.5	-	-	100.0	4.8	-	95.2	2.1	4.1	93.8	39.7	50.4	9.9	74.6	19.1	6.2	37.3	9.7	53.0	13.2	18.1	68.7
Itapetininga	100.0	3.7	0.7	95.6	-	-	100.0	2.0	-	98.0	3.5	-	96.5	79.5	5.4	15.1	11.7	30.1	58.1	3.7	1.3	95.0	24.5	8.1	67.4
São Paulo Macrometropolitan Area	100.0	20.6	2.5	76.9	2.0	0.7	97.3	7.9	1.9	90.2	13.1	1.3	85.6	69.0	19.3	11.8	48.9	10.9	40.2	6.8	4.2	89.0	37.1	11.9	51.0
Paraíba Valley	100.0	18.4	2.9	78.7	7.6	1.2	91.2	4.6	1.4	94.0	5.8	6.2	88.0	74.8	8.4	16.8	59.9	10.4	29.7	9.6	3.5	86.9	17.6	33.1	49.3
South coast of São Paulo State	100.0	-	-	100.0	-	-	100.0	-	-	100.0	-	-	100.0	100.0	-	-	100.0	-	-	64.9	-	35.1	64.9	-	35.1
São Paulo Metropolitan Area	100.0	27.0	5.7	67.2	6.7	1.4	91.9	6.3	4.1	89.6	14.7	4.6	80.7	58.9	15.5	25.6	45.0	14.8	40.2	25.8	11.9	62.2	28.0	13.4	58.6

Source: IBGE. PINTEC 2005.

Detailed Table 8.7
Importance attributed to innovation activities by microregion – São Paulo State, 2003-2005

Brazil, São Paulo State & microregions	Total	Importance attributed to innovations by innovative firms (%)																							
		Intramural R&D			Externally acquired R&D			Other externally acquired knowledge s			Externally acquired software			Purchases of plant & equipment			Training			Market introduction of technological innovation			Industrial design & other technical preparations		
		Highly important- ance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none	Highly impor- tance	Medium impor- tance	Low importance/ none
Brazil	**100.0**	**16.6**	**3.3**	**80.1**	**4.0**	**1.0**	**95.0**	**7.4**	**3.6**	**89.1**	**10.0**	**4.0**	**86.0**	**65.3**	**16.0**	**18.7**	**44.7**	**14.5**	**40.8**	**18.0**	**10.2**	**71.8**	**25.9**	**13.5**	**60.6**
São Paulo State	**100.0**	**23.5**	**4.1**	**72.4**	**5.2**	**1.0**	**93.7**	**6.9**	**4.0**	**89.1**	**12.3**	**4.6**	**83.1**	**61.9**	**16.0**	**22.1**	**45.5**	**13.8**	**40.8**	**21.6**	**11.0**	**67.4**	**28.6**	**14.7**	**56.7**
Marília	100.0	49.9	0.4	49.7	-	0.9	99.1	38.7	14.0	47.3	28.6	2.5	69.0	55.7	14.5	29.8	64.6	17.5	17.9	34.3	27.6	38.1	46.0	28.3	25.7
Ribeirão Preto	100.0	45.8	5.0	49.2	4.4	0.9	94.6	8.9	-	91.1	12.2	2.0	85.8	73.7	11.8	14.5	38.6	12.2	49.3	21.1	8.6	70.3	31.6	11.3	57.0
Rio Claro	100.0	42.6	2.9	54.5	11.2	-	88.8	9.5	-	90.5	3.9	5.4	90.6	38.9	24.9	36.1	35.0	12.8	52.3	13.3	9.4	77.3	43.7	23.4	32.9
Santos	100.0	40.8	5.9	53.4	35.5	-	64.5	44.9	-	55.1	12.8	5.9	81.4	42.4	28.6	29.0	70.6	5.9	23.5	5.9	15.2	78.9	29.6	29.6	40.8
Mogi das Cruzes	100.0	30.4	7.4	62.2	3.0	1.1	95.9	1.2	8.8	90.0	18.3	1.1	80.5	52.9	20.3	26.8	36.9	13.1	50.1	21.2	10.0	68.9	40.2	9.9	49.9
Franco da Rocha	100.0	28.6	-	71.4	-	-	100.0	24.0	7.4	68.6	13.8	9.8	76.4	72.7	7.4	19.9	38.4	4.1	57.6	25.0	-	75.0	33.4	17.9	48.7
São Paulo	100.0	27.8	5.2	66.9	7.8	1.5	90.7	6.4	3.6	90.1	14.6	5.4	80.0	58.0	15.0	27.0	45.5	14.7	39.8	27.3	13.1	59.6	27.4	13.2	59.4
Guarulhos	100.0	27.2	3.6	69.2	1.6	0.3	98.2	4.1	4.6	91.3	7.0	3.1	89.9	61.2	12.8	25.9	31.2	15.7	53.1	14.5	8.8	76.8	24.4	9.1	66.5
Campinas	100.0	26.1	2.7	71.2	3.1	0.7	96.2	4.1	3.5	92.4	11.9	13.4	74.7	48.5	18.9	32.6	36.5	11.0	52.5	14.9	13.8	71.3	25.8	16.1	58.0
Bragança Paulista	100.0	24.1	5.1	70.7	1.2	-	98.8	15.5	4.0	80.6	19.9	-	80.1	68.4	8.2	23.4	43.5	18.1	38.4	11.9	20.3	67.7	23.4	18.0	58.7
Mogi Mirim	100.0	23.0	3.8	73.3	6.6	3.6	89.8	4.7	38.0	57.3	2.7	1.6	95.8	50.4	37.6	12.0	48.5	6.2	45.3	23.7	37.4	38.9	12.3	4.7	83.0
Osasco	100.0	21.8	3.6	74.6	7.3	2.6	90.1	6.7	3.5	89.9	8.1	1.6	90.3	66.3	11.2	22.5	51.9	15.2	32.8	22.9	5.0	72.1	17.6	11.0	71.4
Sorocaba	100.0	21.3	2.3	76.4	1.8	0.2	98.0	5.0	1.9	93.1	15.4	1.7	82.9	64.4	25.3	10.3	37.8	10.1	52.1	6.4	1.6	92.0	34.4	12.3	53.2
Botucatu	100.0	20.8	4.3	74.9	9.2	-	90.8	4.3	-	95.7	-	8.5	91.5	80.2	11.3	8.5	55.9	22.2	21.9	24.2	8.5	67.2	20.8	11.3	67.9
São José dos Campos	100.0	20.7	1.6	77.7	4.6	0.5	94.9	6.8	1.5	91.7	7.4	9.2	83.4	73.7	9.6	16.7	68.8	10.3	20.9	11.1	3.8	85.1	14.5	30.4	55.2
Other	100.0	19.7	1.8	78.5	8.9	0.4	90.7	10.5	4.8	84.7	5.6	1.6	92.8	73.6	10.0	16.4	47.2	12.9	39.9	19.8	7.3	72.9	26.3	13.8	60.0

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Detailed Table 8.7 (continued)
Importance attributed to innovation activities by microregion – São Paulo State, 2003-2005

Brazil, São Paulo State & microregions	Total	Importance attributed to innovations by innovative firms (%)																							
		Intramural R&D			Externally acquired R&D			Other externally acquired knowledge			Externally acquired software			Purchases of plant & equipment			Training			Market introduction of technological innovations			Industrial design & other technical preparations		
		Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none	Highly importance	Medium importance	Low importance/ none
São Carlos	100.0	19.2	15.2	65.6	9.6	1.5	88.9	12.8	9.6	77.6	8.6	3.0	88.4	57.1	14.1	28.8	17.4	15.4	67.2	36.3	9.5	54.2	38.9	6.7	54.4
Jundiaí	100.0	17.6	2.0	80.4	2.6	2.0	95.3	9.2	1.2	89.7	6.2	1.2	92.7	78.7	12.5	8.8	72.3	8.6	19.1	5.7	2.8	91.5	48.5	7.0	44.5
Itapecerica da Serra	100.0	16.5	17.2	66.3	3.1	-	96.9	13.3	2.4	84.4	31.7	5.5	62.7	67.2	24.0	8.8	59.2	19.8	21.1	34.5	16.0	49.5	36.6	30.7	32.6
São José do Rio Preto	100.0	16.3	1.8	81.8	1.6	-	98.4	8.9	-	91.1	13.4	2.7	83.9	45.1	22.7	32.2	40.0	17.2	42.8	29.7	11.8	58.5	32.4	24.7	42.9
Limeira	100.0	14.8	2.8	82.4	3.3	0.4	96.3	6.0	6.7	87.2	6.4	6.0	87.6	70.7	19.5	9.8	31.1	7.6	61.4	15.5	4.6	79.9	14.9	9.9	75.2
Bauru	100.0	12.7	1.8	85.5	6.5	3.5	90.1	-	-	100.0	5.8	3.4	90.8	79.4	16.8	3.8	71.1	1.8	27.0	11.7	9.5	78.8	24.3	-	75.7
Piracicaba	100.0	12.0	0.4	87.6	2.3	1.1	96.6	3.0	0.7	96.2	19.3	2.0	78.7	73.2	23.1	3.7	38.9	22.6	38.5	19.5	0.8	79.7	52.8	27.7	19.6
Birigui	100.0	10.7	2.6	86.7	0.9	0.9	98.3	2.6	-	97.4	-	1.7	98.3	46.8	6.6	46.6	38.0	11.1	50.8	3.7	8.1	88.3	49.0	11.0	40.0
Franca	100.0	9.8	-	90.2	3.3	-	96.7	5.0	2.0	92.9	8.7	2.5	88.8	90.8	5.1	4.0	73.8	3.9	22.3	28.8	2.1	69.2	19.1	1.6	79.4
Jaú	100.0	9.7	1.2	89.1	3.3	2.0	94.7	4.5	2.7	92.8	6.9	-	93.1	68.9	27.2	3.9	41.9	2.3	55.8	31.3	3.3	65.4	5.5	3.3	91.2
Votuporanga	100.0	7.1	-	92.9	-	-	100.0	-	26.5	73.5	-	7.1	92.9	63.9	36.1	-	37.4	36.1	26.5	26.5	7.1	66.4	26.5	7.1	66.4
São João da Boa Vista	100.0	4.6	-	95.4	-	-	100.0	-	-	100.0	2.8	0.7	96.5	91.6	-	8.4	53.7	21.7	24.6	18.2	6.4	75.4	43.5	28.7	27.7
Araraquara	100.0	4.1	1.5	94.4	0.5	-	99.5	0.5	9.7	89.8	2.8	0.9	96.3	82.3	4.5	13.2	25.2	19.2	55.6	2.9	24.9	72.2	21.3	0.5	78.2
Ourinhos	100.0	2.4	5.6	92.0	-	-	100.0	2.6	-	97.4	2.2	3.5	94.4	37.7	52.1	10.2	74.6	19.0	6.5	38.5	10.0	51.5	12.8	18.6	68.6
Batatais	100.0	1.0	1.9	97.0	-	1.9	98.1	2.9	-	97.1	-	1.9	98.1	69.8	29.1	1.1	68.3	1.9	29.7	8.7	26.5	64.8	8.3	59.7	32.0

Source: IBGE, PINTEC 2005.

Detailed Table 8.8
Applications for invention patents and utility models by microregion – São Paulo State, 1998-2005

Microregion	Applications for invention patents and utility models (absolute numbers)	
	1998-2001	2002-2005
Total	**10,069**	**12,663**
São Paulo City	4,636	5,280
Campinas	712	1 054
ABCD Paulista	708	828
Osasco	411	481
Guarulhos	240	282
Sorocaba	200	254
São José dos Campos	288	252
Itapecerica da Serra	217	245
Ribeirão Preto	157	226
Jundiaí	148	213
Limeira	129	213
São José do Rio Preto	123	194
Marília	167	189
Santos	106	160
São Carlos	119	156
Mogi das Cruzes	169	146
Piracicaba	102	142
Bragança Paulista	99	139
Bauru	81	137
Araraquara	59	128
Mogi Mirim	44	91
Other cities in São Paulo microregion	65	79
Franca	58	75
Tatuí	48	75
Presidente Prudente	72	72
Rio Claro	46	57
Jaú	16	50
Jaboticabal	50	47
Catanduva	25	46
São João da Boa Vista	32	44
Franco da Rocha	23	40
Birigui	23	38
Guaratinguetá	31	36
Batatais	10	34
Araçatuba	12	32
Avaré	7	32

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Detailed Table 8.8 (continued)
Applications for invention patents and utility models by microregion - São Paulo State, 1998-2005

Microregion	Applications for invention patents and utility models (absolute numbers)	
	1998-2001	2002-2005
Amparo	24	29
Ourinhos	14	27
Fernandópolis	8	24
Tupã	7	22
Assis	24	19
Adamantina	4	18
Caraguatatuba	18	17
Piedade	14	17
Pirassununga	10	16
Botucatu	11	16
Dracena	8	15
Votuporanga	17	14
São Joaquim da Barra	10	14
Barretos	31	14
Ituverava	15	12
Itanhaém	15	11
Novo Horizonte	4	11
Itapetininga	7	9
Lins	13	9
Paraibuna/Paraitinga	0	7
Jales	7	7
Andradina	5	6
Nhandeara	1	4
Registro	4	3
Campos do Jordão	4	2
Itapeva	10	2
Bananal	0	2
Capão Bonito	0	1
Auriflama	4	1
City not identified	347	747

Source: INPI (special extraction 2008).

Note: São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.9
Patent filings and population by microregion – São Paulo State, 1998-2005

Microregion	Patent filings & population (absolute numbers)					
	1998-2001			2002-2005		
	Patent filings	Population (1)	Patent filings per 100,000 inhabitants	Patent filings	Population (2)	Patent filings per 100,000 inhabitants
Total	**10,069**	**37,032,493**	**27.2**	**12,663**	**40,442,795**	**31.3**
São Paulo City (3)	4,636	10,434,252	44.0	5,280	10,927,985	48.0
Campinas	712	2,209,558	32.2	1,054	2,481,207	42.5
ABCD Paulista (3)	708	1,849,731	38.0	828	1,981,950	42.0
Osasco	411	1,597,694	25.7	481	1,826,295	26.3
Guarulhos	240	1,175,642	20.4	282	1,371,225	20.6
Sorocaba	200	1,124,874	17.8	254	1,284,589	19.8
São José dos Campos	288	1,233,050	23.4	252	1,363,085	18.5
Itapecerica da Serra	217	812,236	26.7	245	952,229	25.7
Ribeirão Preto	157	863,801	18.2	226	952,029	23.7
Limeira	129	509,258	25.3	213	564,411	37.7
Jundiaí	148	529,990	27.9	213	587,636	36.2
São José do Rio Preto	123	670,674	18.3	194	746,909	26.0
Marília	167	309,648	53.9,	189	333,776	56.6
Santos	106	1,318,276	8.0	160	1,441,010	11.1
São Carlos	119	271,815	43.8	156	301,841	51.7
Mogi das Cruzes	169	1,130,965	14.9	146	1,327,922	11.0
Piracicaba	102	492,782	20.7	142	543,582	26.1
Bragança Paulista	99	417,890	23.7	139	476,238	29.2
Bauru	81	513,632	15.8	137	559,817	24.5
Araraquara	59	447,511	13.2	128	486,415	26.3
Mogi Mirim	44	339,209	13.0	91	383,296	23.7
Other cities of São Paulo microregion (3)	65	504,991	13.0	79	564,515	14.0
Tatuí	48	210,007	22.9	75	240,341	31.2
Franca	58	350,283	16.6	75	389,219	19.3
Presidente Prudente	72	544,215	13.2	72	578,786	12.4
Rio Claro	46	216,911	21.2	57	242,571	23.5
Jaú	16	310,917	5.1	50	338,880	14.8
Jaboticabal	50	385,836	13.0	47	410,657	11.4
Catanduva	25	201,855	12.4,	46	217,456	21.2,
São João da Boa Vista	32	395,419	8.1	44	419,326	10.5
Franco da Rocha	23	373,192	6.2	40	451,359	8.9
Birigui	23	228,087	10.1	38	246,980	15.4
Guaratinguetá	31	373,926	8.3	36	399,148	9.0
Batatais	10	97,801	10.2	34	105,276	32.3

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Detailed Table 8.9 (continued)
Patent filings and population by microregion - São Paulo State, 1998-2005

Microregion	Patent filings & population (absolute numbers)					
	1998-2001			2002-2005		
	Patent filings	Population (1)	Patent filings per 100,000 inhabitants	Patent filings	Population (2)	Patent filings per 100,000 inhabitants
Avaré	7	157,954	4.4	32	175,462	18.2
Araçatuba	12	233,462	5.1	32	246,113	13.0
Amparo	24	161,396	14.9	29	175,827	16.5
Ourinhos	14	270,687	5.2	27	291,213	9.3
Fernandópolis	8	100,399	8.0	24	103,636	23.2
Tupã	7	108,473	6.5	22	112,768	19.5
Assis	24	246,817	9.7	19	262,853	7.2
Adamantina	4	151,521	2.6	18	150,458	12.0
Piedade	14	177,831	7.9	17	199,420	8.5
Caraguatatuba	18	224,656	8.0	17	272,867	6.2
Pirassununga	10	166,052	6.0	16	182,110	8.8
Botucatu	11	180,328	6.1	16	198,867	8.0
Dracena	8	108,049	7.4	15	108,276	13.9
Barretos	31	126,531	24.5	14	132,750	10.5
Votuporanga	17	126,180	13.5	14	134,094	10.4
São Joaquim da Barra	10	190,576	5.2,	14	205,268	6.8
Ituverava	15	89,546	16.8	12	95,809	12.5
Novo Horizonte	4	71,954	5.6	11	75,482	14.6
Itanhaém	15	181,344	8.3	11	221,457	5.0
Lins	13	146,755	8.9	9	156,071	5.8
Itapetininga	7	163,912	4.3	9	182,196	4.9
Paraibuna/Paraitinga	0	70,476	-	7	72,866	9.6
Jales	7	146,634	4.8	7	150,417	4.7
Andradina	5	173,990	2.9	6	178,738	3.4
Nhandeara	1	58,895	1.7	4	60,203	6.6
Registro	4	242,953	1.6	3	265,496	1.1
Bananal	0	25,542	-	2	26,676	7.5
Campos do Jordão	4	64,550	6.2	2	70,806	2.8
Itapeva	10	232,870	4.3	2	247,588	0.8
Auriflama	4	44,273	9.0	1	44,173	2.3
Capão Bonito	0	141,959	-	1	144,874	0.7
City not identified	347	*	*	747	*	*

Source: INPI (special extraction 2008).

(1) IBGE, 2000 Census.

(2) IBGE, 2005 Population Projection.

(3) **Note**: São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.10
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
São Paulo State		
Total	**12,663**	**1.000**
Consumer goods, construction	3,661	1.000
Electronics, electricity	1,142	1.000
Instrumentation	1,481	1.000
Machinery, mechanics, transport	3,056	1.000
Procedures, basic chemicals, metallurgy	2,859	1.000
Fine chemicals, pharmaceuticals	413	1.000
Unclassified	51	1.000
Adamantina		
Total	**18**	**1.000**
Consumer goods, construction	1	0.192
Electronics, electricity	1	0.616
Machinery, mechanics, transport	10	2.302
Procedures, basic chemicals, metallurgy	5	1.230
Fine chemicals, pharmaceuticals	1	1.703
Amparo		
Total	**29**	**1.000**
Consumer goods, construction	4	0.477
Electronics, electricity	2	0.765
Instrumentation	6	1.769
Machinery, mechanics, transport	6	0.857
Procedures, basic chemicals, metallurgy	9	1.375
Fine chemicals, pharmaceuticals	2	2.115
Andradina		
Total	**6**	**1.000**
Consumer goods, construction	1	0.576
Electronics, electricity	1	1.848
Instrumentation	1	1.425
Machinery, mechanics, transport	2	1.381
Procedures, basic chemicals, metallurgy	1	0.738
Araçatuba		
Total	**32**	**1.000**
Consumer goods, construction	19	2.054
Electronics, electricity	3	1.040

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Instrumentation	1	0.267
Machinery, mechanics, transport	9	1.165
Araraquara		
Total	**128**	**1.000**
Consumer goods, construction	18	0.486
Electronics, electricity	2	0.173
Instrumentation	11	0.735
Machinery, mechanics, transport	70	2.266
Procedures, basic chemicals, metallurgy	22	0.761
Fine chemicals, pharmaceuticals	3	0.719
Unclassified	2	3.880
Assis		
Total	**19**	**1.000**
Consumer goods, construction	4	0.728
Electronics, electricity	1	0.584
Instrumentation	3	1.350
Machinery, mechanics, transport	8	1.745
Procedures, basic chemicals, metallurgy	2	0.466
Fine chemicals, pharmaceuticals	1	1.614
Auriflama		
Total	**1**	**1.000**
Consumer goods, construction	1	3.459
Avaré		
Total	**32**	**1.000**
Consumer goods, construction	6	0.649
Electronics, electricity	1	0.347
Instrumentation	3	0.802
Machinery, mechanics, transport	9	1.165
Procedures, basic chemicals, metallurgy	12	1.661
Fine chemicals, pharmaceuticals	1	0.958
Bananal		
Total	**2**	**1.000**
Consumer goods, construction	1	1.729
Machinery, mechanics, transport	1	2.072

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Barretos		
Total	**14**	**1.000**
Consumer goods, construction	3	0.741
Electronics, electricity	1	0.792
Instrumentation	1	0.611
Machinery, mechanics, transport	7	2.072
Procedures, basic chemicals, metallurgy	1	0.316
Fine chemicals, pharmaceuticals	1	2.190
Batatais		
Total	**34**	**1.000**
Consumer goods, construction	5	0.509
Instrumentation	1	0.251
Machinery, mechanics, transport	25	3.047
Procedures, basic chemicals, metallurgy	3	0.391
Bauru		
Total	**137**	**1.000**
Consumer goods, construction	59	1.490
Electronics, electricity	10	0.809
Instrumentation	14	0.874
Machinery, mechanics, transport	22	0.665
Procedures, basic chemicals, metallurgy	31	1.002
Fine chemicals, pharmaceuticals	1	0.224
Birigui		
Total	**38**	**1.000**
Consumer goods, construction	20	1.820
Electronics, electricity	2	0.584
Instrumentation	1	0.225
Machinery, mechanics, transport	9	0.981
Procedures, basic chemicals, metallurgy	6	0.699
Botucatu		
Total	**16**	**1.000**
Consumer goods, construction	5	1.081
Electronics, electricity	2	1.386
Instrumentation	1	0.534
Machinery, mechanics, transport	6	1.554

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Procedures, basic chemicals, metallurgy	1	0.277
Fine chemicals, pharmaceuticals	1	1.916
Bragança Paulista		
Total	**139**	**1.000**
Consumer goods, construction	43	1.070
Electronics, electricity	12	0.957
Instrumentation	13	0.800
Machinery, mechanics, transport	43	1.282
Procedures, basic chemicals, metallurgy	23	0.733
Fine chemicals, pharmaceuticals	4	0.882
Unclassified	1	1.786
Campinas		
Total	**1,054**	**1.000**
Consumer goods, construction	199	0.653
Electronics, electricity	92	0.968
Instrumentation	170	1.379
Machinery, mechanics, transport	224	0.881
Procedures, basic chemicals, metallurgy	312	1.311
Fine chemicals, pharmaceuticals	50	1.455
Unclassified	7	1.649
Campos do Jordão		
Total	**2**	**1.000**
Consumer goods, construction	2	3.459
Capão Bonito		
Total	**1**	**1.000**
Procedures, basic chemicals, metallurgy	1	4.429
Caraguatatuba		
Total	**17**	**1.000**
Consumer goods, construction	4	0.814
Electronics, electricity	2	1.305
Instrumentation	1	0.503
Machinery, mechanics, transport	6	1.462
Procedures, basic chemicals, metallurgy	4	1.042

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Catanduva		
Total	**46**	**1.000**
Consumer goods, construction	11	0.827
Electronics, electricity	2	0.482
Instrumentation	4	0.744
Machinery, mechanics, transport	25	2.252
Procedures, basic chemicals, metallurgy	4	0.385
Dracena		
Total	**15**	**1.000**
Consumer goods, construction	4	0.922
Electronics, electricity	2	1.478
Instrumentation	1	0.570
Machinery, mechanics, transport	7	1.934
Procedures, basic chemicals, metallurgy	1	0.295
Fernandópolis		
Total	**24**	**1.000**
Consumer goods, construction	8	1.153
Machinery, mechanics, transport	2	0.345
Procedures, basic chemicals, metallurgy	13	2.399
Fine chemicals, pharmaceuticals	1	1.278
Franca		
Total	**75**	**1.000**
Consumer goods, construction	47	2.168
Electronics, electricity	1	0.148
Instrumentation	1	0.114
Machinery, mechanics, transport	7	0.387
Procedures, basic chemicals, metallurgy	17	1.004
Fine chemicals, pharmaceuticals	2	0.818
Franco da Rocha		
Total	**40**	**1.000**
Consumer goods, construction	14	1.211
Electronics, electricity	4	1.109
Instrumentation	7	1.496
Machinery, mechanics, transport	1	0.104
Procedures, basic chemicals, metallurgy	14	1.550

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Guaratinguetá		
Total	**36**	**1.000**
Consumer goods, construction	9	0.865
Electronics, electricity	1	0.308
Instrumentation	2	0.475
Machinery, mechanics, transport	10	1.151
Procedures, basic chemicals, metallurgy	14	1.722
Guarulhos		
Total	**282**	**1.000**
Consumer goods, construction	87	1.067
Electronics, electricity	14	0.550
Instrumentation	21	0.637
Machinery, mechanics, transport	69	1.014
Procedures, basic chemicals, metallurgy	80	1.257
Fine chemicals, pharmaceuticals	9	0.979
Unclassified	2	1.761
Itanhaém		
Total	**11**	**1.000**
Consumer goods, construction	4	1.258
Electronics, electricity	1	1.008
Instrumentation	1	0.777
Machinery, mechanics, transport	4	1.507
Procedures, basic chemicals, metallurgy	1	0.403
Itapecerica da Serra		
Total	**245**	**1.000**
Consumer goods, construction	75	1.059
Electronics, electricity	25	1.131
Instrumentation	20	0.698
Machinery, mechanics, transport	51	0.863
Procedures, basic chemicals, metallurgy	65	1.175
Fine chemicals, pharmaceuticals	8	1.001
Unclassified	1	1.013
Itapetininga		
Total	**9**	**1.000**
Consumer goods, construction	4	1.537

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Electronics, electricity	1	1,232
Machinery, mechanics, transport	2	0,921
Procedures, basic chemicals, metallurgy	2	0,984
Itapeva		
Total	**2**	**1,000**
Instrumentation	1	4,275
Machinery, mechanics, transport	1	2,072
Ituverava		
Total	**12**	**1,000**
Consumer goods, construction	2	0,576
Electronics, electricity	2	1,848
Instrumentation	1	0,713
Machinery, mechanics, transport	4	1,381
Procedures, basic chemicals, metallurgy	3	1,107
Jaboticabal		
Total	**47**	**1,000**
Consumer goods, construction	11	0,810
Electronics, electricity	2	0,472
Instrumentation	2	0,364
Machinery, mechanics, transport	12	1,058
Procedures, basic chemicals, metallurgy	16	1,508
Fine chemicals, pharmaceuticals	4	2,609
Jales		
Total	**7**	**1,000**
Consumer goods, construction	2	0,988
Machinery, mechanics, transport	1	0,592
Procedures, basic chemicals, metallurgy	4	2,531
Jaú		
Total	**50**	**1,000**
Consumer goods, construction	26	1,799
Instrumentation	3	0,513
Machinery, mechanics, transport	12	0,994
Procedures, basic chemicals, metallurgy	9	0,797

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Jundiaí		
Total	**213**	**1.000**
Consumer goods, construction	58	0.942
Electronics, electricity	12	0.625
Instrumentation	22	0.883
Machinery, mechanics, transport	50	0.973
Procedures, basic chemicals, metallurgy	65	1.352
Fine chemicals, pharmaceuticals	5	0.720
Unclassified	1	1.166
Limeira		
Total	**213**	**1.000**
Consumer goods, construction	35	0.568
Electronics, electricity	5	0.260
Instrumentation	20	0.803
Machinery, mechanics, transport	96	1.868
Procedures, basic chemicals, metallurgy	49	1.019
Fine chemicals, pharmaceuticals	8	1.152
Lins		
Total	**9**	**1.000**
Consumer goods, construction	4	1.537
Electronics, electricity	2	2.464
Machinery, mechanics, transport	3	1.381
Marília		
Total	**189**	**1.000**
Consumer goods, construction	46	0.842
Electronics, electricity	10	0.587
Instrumentation	10	0.452
Machinery, mechanics, transport	68	1.491
Procedures, basic chemicals, metallurgy	52	1.219
Fine chemicals, pharmaceuticals	2	0.324
Unclassified	1	1.314
Mogi das Cruzes		
Total	**146**	**1.000**
Consumer goods, construction	35	0.829
Electronics, electricity	20	1.519

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Instrumentation	14	0.820
Machinery, mechanics, transport	30	0.851
Procedures, basic chemicals, metallurgy	39	1.183
Fine chemicals, pharmaceuticals	8	1.680
Mogi Mirim		
Total	**91**	**1.000**
Consumer goods, construction	22	0.836
Electronics, electricity	9	1.097
Instrumentation	10	0.940
Machinery, mechanics, transport	25	1.138
Procedures, basic chemicals, metallurgy	21	1.022
Fine chemicals, pharmaceuticals	3	1.011
Unclassified	1	2.729
Nhandeara		
Total	**4**	**1.000**
Consumer goods, construction	2	1.729
Machinery, mechanics, transport	2	2.072
Novo Horizonte		
Total	**11**	**1.000**
Consumer goods, construction	9	2.830
Machinery, mechanics, transport	2	0.753
Osasco		
Total	**481**	**1.000**
Consumer goods, construction	154	1.107
Electronics, electricity	49	1.130
Instrumentation	56	0.995
Machinery, mechanics, transport	91	0.784
Procedures, basic chemicals, metallurgy	116	1.068
Fine chemicals, pharmaceuticals	14	0.892
Unclassified	1	0.516
Ourinhos		
Total	**27**	**1.000**
Electronics, electricity	2	0.821
Instrumentation	1	0.317

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Machinery, mechanics, transport	11	1.688
Procedures, basic chemicals, metallurgy	9	1.476
Fine chemicals, pharmaceuticals	2	2.271
Unclassified	2	18.392
Paraibuna/Paraitinga		
Total	**7**	**1.000**
Consumer goods, construction	2	0.988
Electronics, electricity	1	1.584
Instrumentation	1	1.221
Machinery, mechanics, transport	2	1.184
Procedures, basic chemicals, metallurgy	1	0.633
Piedade		
Total	**17**	**1.000**
Consumer goods, construction	4	0.814
Electronics, electricity	1	0.652
Instrumentation	1	0.503
Machinery, mechanics, transport	8	1.950
Procedures, basic chemicals, metallurgy	3	0.782
Piracicaba		
Total	**142**	**1.000**
Consumer goods, construction	26	0.633
Electronics, electricity	5	0.390
Instrumentation	17	1.024
Machinery, mechanics, transport	53	1.547
Procedures, basic chemicals, metallurgy	36	1.123
Fine chemicals, pharmaceuticals	4	0.864
Unclassified	1	1.749
Pirassununga		
Total	**16**	**1.000**
Consumer goods, construction	2	0.432
Electronics, electricity	4	2.772
Instrumentation	3	1.603
Machinery, mechanics, transport	1	0.259
Procedures, basic chemicals, metallurgy	5	1.384
Fine chemicals, pharmaceuticals	1	1.916

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Presidente Prudente		
Total	**72**	**1.000**
Consumer goods, construction	18	0.865
Electronics, electricity	10	1.540
Instrumentation	14	1.663
Machinery, mechanics, transport	23	1.324
Procedures, basic chemicals, metallurgy	5	0.308
Fine chemicals, pharmaceuticals	2	0.852
ABCD Paulista		
Total	**828**	**1.000**
Consumer goods, construction	217	0.906
Electronics, electricity	56	0.750
Instrumentation	60	0.620
Machinery, mechanics, transport	266	1.331
Procedures, basic chemicals, metallurgy	202	1.081
Fine chemicals, pharmaceuticals	21	0.778
Unclassified	6	1.799
Registro		
Total	**3**	**1.000**
Consumer goods, construction	1	1.153
Machinery, mechanics, transport	1	1.381
Procedures, basic chemicals, metallurgy	1	1.476
Rest of São Paulo microregion		
Total	**79**	**1.000**
Consumer goods, construction	38	1.664
Electronics, electricity	1	0.140
Instrumentation	5	0.541
Machinery, mechanics, transport	21	1.101
Procedures, basic chemicals, metallurgy	11	0.617
Fine chemicals, pharmaceuticals	3	1.164
Ribeirão Preto		
Total	**226**	**1.000**
Consumer goods, construction	39	0.597
Electronics, electricity	12	0.589
Instrumentation	42	1.589

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Machinery, mechanics, transport	78	1.430
Procedures, basic chemicals, metallurgy	45	0.882
Fine chemicals, pharmaceuticals	7	0.950
Unclassified	3	3.296
Rio Claro		
Total	**57**	**1.000**
Consumer goods, construction	19	1.153
Electronics, electricity	6	1.167
Instrumentation	8	1.200
Machinery, mechanics, transport	7	0.509
Procedures, basic chemicals, metallurgy	16	1.243
Fine chemicals, pharmaceuticals	1	0.538
Santos		
Total	**160**	**1.000**
Consumer goods, construction	55	1.189
Electronics, electricity	8	0.554
Instrumentation	21	1.122
Machinery, mechanics, transport	46	1.191
Procedures, basic chemicals, metallurgy	24	0.664
Fine chemicals, pharmaceuticals	6	1.150
São Carlos		
Total	**156**	**1.000**
Consumer goods, construction	20	0.443
Electronics, electricity	8	0.569
Instrumentation	33	1.809
Machinery, mechanics, transport	46	1.222
Procedures, basic chemicals, metallurgy	42	1.192
Fine chemicals, pharmaceuticals	6	1.179
Unclassified	1	1.592
São João da Boa Vista		
Total	**44**	**1.000**
Consumer goods, construction	12	0.943
Electronics, electricity	3	0.756
Instrumentation	1	0.194
Machinery, mechanics, transport	12	1.130

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Procedures, basic chemicals, metallurgy	13	1.309
Fine chemicals, pharmaceuticals	3	2.091
São Joaquim da Barra		
Total	**14**	**1.000**
Electronics, electricity	1	0.792
Instrumentation	2	1.221
Machinery, mechanics, transport	7	2.072
Procedures, basic chemicals, metallurgy	4	1.265
São José do Rio Preto		
Total	**194**	**1.000**
Consumer goods, construction	72	1.284
Electronics, electricity	13	0.743
Instrumentation	23	1.014
Machinery, mechanics, transport	48	1.025
Procedures, basic chemicals, metallurgy	31	0.708
Fine chemicals, pharmaceuticals	7	1.106
São José dos Campos		
Total	**252**	**1.000**
Consumer goods, construction	67	0.920
Electronics, electricity	29	1.276
Instrumentation	41	1.391
Machinery, mechanics, transport	67	1.102
Procedures, basic chemicals, metallurgy	37	0.650
Fine chemicals, pharmaceuticals	8	0.973
Unclassified	3	2.956
São Paulo		
Total	**5 280**	**1.000**
Consumer goods, construction	1 637	1.072
Electronics, electricity	591	1.241
Instrumentation	658	1.066
Machinery, mechanics, transport	1 067	0.837
Procedures, basic chemicals, metallurgy	1 140	0.956
Fine chemicals, pharmaceuticals	172	0.999
Unclassified	15	0.705

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Sorocaba		
Total	**254**	**1.000**
Consumer goods, construction	74	1.008
Electronics, electricity	21	0.917
Instrumentation	29	0.976
Machinery, mechanics, transport	63	1.028
Procedures, basic chemicals, metallurgy	59	1.029
Fine chemicals, pharmaceuticals	8	0.966
Tatuí		
Total	**75**	**1.000**
Consumer goods, construction	28	1.291
Electronics, electricity	14	2.070
Instrumentation	3	0.342
Machinery, mechanics, transport	18	0.994
Procedures, basic chemicals, metallurgy	8	0.472
Fine chemicals, pharmaceuticals	4	1.635
Tupã		
Total	**22**	**1.000**
Consumer goods, construction	7	1.101
Electronics, electricity	4	2.016
Instrumentation	2	0.777
Machinery, mechanics, transport	4	0.753
Procedures, basic chemicals, metallurgy	3	0.604
Fine chemicals, pharmaceuticals	2	2.787
Votuporanga		
Total	**14**	**1.000**
Consumer goods, construction	12	2.965
Machinery, mechanics, transport	1	0.296
Procedures, basic chemicals, metallurgy	1	0.316
City not identified		
Total	**747**	**1.000**
Consumer goods, construction	247	1.144
Electronics, electricity	58	0.861
Instrumentation	93	1.064
Machinery, mechanics, transport	174	0.965

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Detailed Table 8.10 (continued)
Patent filings and technological specialization indices (1) by selected microregion and technological domain – São Paulo State, 2002-2005

Microregion & technological domain	Total patent filings in domain	Technological specialization index (1)
Procedures, basic chemicals, metallurgy	145	0.860
Fine chemicals, pharmaceuticals	27	1.108
Unclassified	3	0.997

Source: INPI (special extraction 2008).

Notes: 1. The International Patent Classification (IPC) system, administered by the World Intellectual Property Organization (WIPO), is divided into eight sections relating to general technological areas, subdivided into hundreds of classes and subclasses. Patents are given one or more IPC codes to classify and index their content by area of technology. The specialization indices discussed here were constructed using only the first or "original" classification to allocate each patent to a key technological domain. Technological domains are groupings of the hundreds of patent subclasses in accordance with the methodology elaborated by Observatoire des Sciences et des Techniques (OST, 1996). See Detailed Chart 8.5.

2. Because the number of patent filings in any microregion is relatively small, more intense technological activities by certain firms have a significant effect on the regionalized indicators.

(1) The technological specialization index is calculated as the ratio of two percentages: the first is the number of patent filings in a given microregion for a technological domain divided by the total for the domain in question; the second is the number of patent filings for the microregion divided by total patent filings. A specialization index greater than one (1.000) indicates above-average technological activity in the domain in question.

Detailed Table 8.11
Patent filings, technological specialization indices (1) and share of IT subdomain by microregion – São Paulo State, 2002-2005

Microregion	IT subdomain		
	Patent filings in microregion (abs. nos.)	Technological specialization index (1)	Share (%)
Total patent filings in subdomain	**162**		
São Paulo City (2)	78	1.16	48.1
Campinas	24	1.78	14.8
Osasco	10	1.63	6.2
Sorocaba	7	2.15	4.3
ABCD Paulista (2)	6	0.57	3.7
São José dos Campos	4	1.24	2.5
Mogi das Cruzes	3	1.61	1.9
Jundiaí	3	1.10	1.9
Bauru	2	1.14	1.2
Bragança Paulista	2	1.12	1.2
Ribeirão Preto	2	0.69	1.2
Guarulhos	2	0.55	1.2
Itapetininga	1	8.69	0.6
Itanhaém	1	7.11	0.6
Piedade	1	4.60	0.6
Amparo	1	2.70	0.6
Jaboticabal	1	1.66	0.6
Presidente Prudente	1	1.09	0.6
Mogi Mirim	1	0.86	0.6
Araraquara	1	0.61	0.6
São Carlos	1	0.50	0.6
Marília	1	0.41	0.6
City not identified	9	*	5.6

Source: INPI (special extraction 2008).

Notes: 1. The International Patent Classification (IPC) system, administered by the World Intellectual Property Organization (WIPO), is divided into eight sections relating to general technological areas, subdivided into hundreds of classes and subclasses. Patents are given one or more IPC codes to classify and index their content by area of technology. The specialization indices discussed here were constructed using only the first or "original" classification to allocate each patent to a key technological domain. Technological domains are groupings of the hundreds of patent subclasses in accordance with the methodology elaborated by Observatoire des Sciences et des Techniques (OST, 1996). Technological subdomains were selected in order to analyze a specific technology such as IT because they are more disaggregated than technological domains. The preference for subdomains in this part of the chapter was associated with the intention of producing a more specific analysis of a given technology. The list of technological domains and their respective subdomains is presented in Detailed Chart 8.5.

2. Because the number of patent filings in any microregion is relatively small, more intense technological activities by certain firms have a significant effect on the regionalized indicators.

(1) The technological specialization index is calculated as the ratio of two percentages: the first is the number of patent filings in a given microregion for a technological subdomain divided by the total for the subdomain in question; the second is the number of patent filings for the microregion divided by total patent filings. A specialization index greater than one (1.000) indicates above-average technological activity in the subdomain in question.

(2) São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.12
Patent filings, technological specialization indices (1) and share of Pharmaceuticals-Cosmetics subdomain by microregion – São Paulo State, 2002-2005

Microregion	Pharmaceuticals-Cosmetics subdomain		
	Patent filings in microregion (abs. nos.)	Technological specialization index (1))	Share (%)
Total patent filings in subdomain	**341**		
São Paulo City (2)	134	0.94	39.3
Campinas	59	2.08	17.3
Itapecerica da Serra	20	3.03	5.9
Ribeirão Preto	16	2.63	4.7
Mogi Mirim	11	4.49	3.2
ABCD Paulista (2)	11	0.49	3.2
Osasco	10	0.77	2.9
Sorocaba	8	1.17	2.3
São José dos Campos	7	1.03	2.1
Avaré	6	6.96	1.8
Guarulhos	6	0.79	1.8
São José do Rio Preto	5	0.96	1.5
Bauru	4	1.08	1.2
Araraquara	3	0.87	0.9
São Carlos	3	0.71	0.9
Jales	2	10.61	0.6
Guaratinguetá	2	2.06	0.6
Jaboticabal	2	1.58	0.6
Franca	2	0.99	0.6
Piracicaba	2	0.52	0.6
Santos	2	0.46	0.6
Capão Bonito	1	37.13	0.3
Ituverava	1	3.09	0.3
Botucatu	1	2.32	0.3
Pirassununga	1	2.32	0.3
Adamantina	1	2.06	0.3

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Detailed Table 8.12 (continued)
Patent filings, technological specialization indices (1) and share of Pharmaceuticals-Cosmetics subdomain by microregion – São Paulo State, 2002-2005

Microregion	Pharmaceuticals-Cosmetics subdomain		
	Patent filings in microregion (abs. nos.)	Technological specialization index (1)	Share (%)
Amparo	1	1.28	0.3
Franco da Rocha	1	0.93	0.3
Rio Claro	1	0.65	0.3
Presidente Prudente	1	0.52	0.3
Tatuí	1	0.50	0.3
Bragança Paulista	1	0.27	0.3
Marília	1	0.20	0.3
City not identified	14	*	4.1

Source: INPI (special extraction 2008).

Notes: 1. The International Patent Classification (IPC) system, administered by the World Intellectual Property Organization (WIPO), is divided into eight sections relating to general technological areas, subdivided into hundreds of classes and subclasses. Patents are given one or more IPC codes to classify and index their content by area of technology. The specialization indices discussed here were constructed using only the first or "original" classification to allocate each patent to a key technological domain. Technological domains are groupings of the hundreds of patent subclasses in accordance with the methodology elaborated by Observatoire des Sciences et des Techniques (OST, 1996). Technological subdomains were selected in order to analyze a specific technology such as pharmaceuticals-cosmetics because they are more disaggregated than technological domains. The preference for subdomains in this part of the chapter was associated with the intention of producing a more specific analysis of a given technology. The list of technological domains and their respective subdomains is presented in Detailed Chart 8.5

2. Because the number of patent filings in any microregion is relatively small, more intense technological activities by certain firms have a significant effect on the regionalized indicators.

(1) The technological specialization index is calculated as the ratio of two percentages: the first is the number of patent filings in a given microregion for a technological subdomain divided by the total for the subdomain in question; the second is the number of patent filings for the microregion divided by total patent filings. A specialization index greater than one (1.000) indicates above-average technological activity in the subdomain in question.

(2) São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.13
Patent filings, technological specialization indices (1) and share of Machine-Tools subdomain by microregion – São Paulo State, 2002-2005

Microregion	Machine-tools subdomain		
	Patent filings in microregion (abs. nos.)	Technological specialization index (1)	Share (%)
Total patent filings in subdomain	**240**		
São Paulo City (2)	72	0.72	30.0
Campinas	24	1.20	10.0
ABCD Paulista (2)	24	1.53	10.0
Osasco	11	1.21	4.6
Limeira	10	2.48	4.2
Guarulhos	9	1.68	3.8
Sorocaba	8	1.66	3.3
Piracicaba	7	2.60	2.9
São Carlos	7	2.37	2.9
Jundiaí	5	1.24	2.1
Itapecerica da Serra	5	1.08	2.1
Bragança Paulista	4	1.52	1.7
Santos	4	1.32	1.7
Adamantina	3	8.79	1.3
Marília	3	0.84	1.3
São José do Rio Preto	3	0.82	1.3
Ribeirão Preto	3	0.70	1.3
São José dos Campos	3	0.63	1.3
Rest of São Paulo microregion (2)	2	1.51	0.8
São Joaquim da Barra	2	7.54	0.8
Tatuí	2	1.41	0.8
Araraquara	2	0.82	0.8
Bauru	2	0.77	0.8
Mogi das Cruzes	2	0.72	0.8

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Detailed Table 8.13 (continued)
Patent filings, technological specialization indices (1) and share of Machine-Tools subdomain by microregion – São Paulo State, 2002-2005

Microregion	Machine-tools subdomain		
	Patent filings in microregion (abs. nos.)	Technological specialization index (1)	Share (%)
Jales	1	7.54	0.4
Caraguatatuba	1	3.10	0.4
Tupã	1	2.40	0.4
Guaratinguetá	1	1.47	0.4
São João da Boa Vista	1	1.20	0.4
Jaú	1	1.06	0.4
Mogi Mirim	1	0.58	0.4
City not identified	16	*	6.7

Source: INPI (special extraction 2008).

Notes: 1.The International Patent Classification (IPC) system, administered by the World Intellectual Property Organization (WIPO), is divided into eight sections relating to general technological areas, subdivided into hundreds of classes and subclasses. Patents are given one or more IPC codes to classify and index their content by area of technology. The specialization indices discussed here were constructed using only the first or "original" classification to allocate each patent to a key technological domain. Technological domains are groupings of the hundreds of patent subclasses in accordance with the methodology elaborated by Observatoire des Sciences et des Techniques (OST, 1996). Technological subdomains were selected in order to analyze a specific technology such as machine-tools because they are more disaggregated than technological domains. The preference for subdomains in this part of the chapter was associated with the intention of producing a more specific analysis of a given technology. The list of technological domains and their respective subdomains is presented in Detailed Chart 8.5

2. Because the number of patent filings in any microregion is relatively small, more intense technological activities by certain firms have a significant effect on the regionalized indicators.

(1) The technological specialization index is calculated as the ratio of two percentages: the first is the number of patent filings in a given microregion for a technological subdomain divided by the total for the subdomain in question; the second is the number of patent filings for the microregion divided by total patent filings. A specialization index greater than one (1.000) indicates above-average technological activity in the subdomain in question.

(2) São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.14
Density of scientific production by microregion – São Paulo State, 1998-2006

Microregion	Density of scientific production in São Paulo State					
	1998-2002			2003-2006		
	Articles (1)	Population (2)	Articles per 100,000 inhabitants	Articles (1)	Population (3)	Articles per 100,000 inhabitants.
Total	**27,717**	**37,032,493**	**83.0**	**33,819**	**40,442,795**	**96.2**
São Paulo	14,171	12,788,974	110.8	17,672	13,474,450	131.2
Campinas	5,855	2,209,558	265.0	6,614	2,481,207	266.6
São Carlos	3,337	271,815	1.227.7	3,732	301,841	1.236.4
Ribeirão Preto	1,870	863,801	216.5	2,546	952,029	267.4
Piracicaba	783	492,782	158.9	1,494	543,582	274.8,
São José dos Campos	945	1,233,050	76.6	1,390	1,363,085	102.0
Araraquara	813	447,511	181.7	978	486,415	201.1
Botucatu	710	180,328	393.7	950	198,867	477.7
Jaboticabal	403	385,836	104.4	559	410,657	136.1
Rio Claro	335	216,911	154.4	542	242,571	223.4
Guaratinguetá	377	373,926	100.8	462	399,148	115.7
Bauru	190	513,632	37.0	378	559,817	67.5
São José do Rio Preto	243	670,674	36.2	374	746,909	50.1
Pirassununga	109	166,052	65.6	206	182,110	113.1
Mogi das Cruzes	75	1,130,965	6.6	133	1,327,922	10.0
Bragança Paulista	104	417,890	24.9	132	476,238	27.7
Presidente Prudente	31	544,215	5.7	123	578,786	21.3
Andradina	80	173,990	46.0	120	178,738	67.1
Araçatuba	57	233,462	24.4	82	246,113	33.3
Sorocaba	33	1,124,874	2.9	69	1,284,589	5.4
Franca	28	350,283	8.0	62	389,219	15.9
Marília	41	309,648	13.2	52	333,776	15.6
Santos	6	1,318,276	0.5	48	1,441,010	3.3
Limeira	19	509,258	3.7	48	564,411	8.5
São João da Boa Vista	20	395,419	5.1	38	419,326	9.1
Assis	23	246,817	9.3	22	262,853	8.4
Barretos	21	126,531	16.6	19	132,750	14.3
Jundiaí	12	529,990	2.3	15	587,636	2.6
Registro	4	242,953	1.6	10	265,496	3.8
Catanduva	4	201,855	2.0	8	217,456	3.7
Mogi Mirim	10	339,209	2.9	8	383,296	2.1
Votuporanga	11	126,180	8.7	7	134,094	5.2

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Detailed Table 8.14 (continued)
Density of scientific production by microregion – São Paulo State, 1998-2006

Microregion	Density of scientific production in São Paulo State					
	1998-2002			2003-2006		
	Articles (1)	Population (2)	Articles per 100,000 inhabitants	Articles (1)	Population (3)	Articles per 100,000 inhabitants
Jaú	2	310,917	0.6	7	338,880	2.1
Caraguatatuba	3	224,656	1.3	7	272,867	2.6
Piedade	2	177,831	1.1	2	199,420	1.0
Jales	3	146,634	2.0	2	150,417	1.3
Itapetininga	3	163,912	1.8	2	182,196	1.1
Tupã	1	108,473	0.9	1	112,768	0.9
Osasco	1	1,597,694	0.1	0	1,826,295	-
Tatuí	1	210,007	0.5	0	240,341	-
Itanhaém	1	181,344	0.6	0	221,457	-
City not identified	573	*	*	663	*	*

Source: ISI via Web of Science, SCIE & SSCI (extraction 2008).

(1) For articles by more than one author each of the microregions involved was counted and the total number of articles was therefore less than the sum of the numbers in the first and fourth columns.

(2) IBGE, 2000 Census.

(3) IBGE. Projeção da População de 2005.

Detailed Table 8.15
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
Andradina			
	Engineering	46	6.08
	Economics	1	3.34
	Ecology	10	3.11
	Agrarian sciences	13	2.78
	Materials science	11	1.88
	Computer science	3	1.62
	Chemistry	20	1.21
	Physics	18	1.01
	Botany & zoology	11	0.93
	Mathematics	2	0.67
	Molecular biology & genetics	2	0.57
	Microbiology	1	0.34
Araçatuba			
	Botany & zoology	32	3.90
	Medicine	42	2.13
	Microbiology	4	1.93
	Agrarian sciences	6	1.84
	Immunology	2	1.42
	Molecular biology & genetics	2	0.82
	Social sciences	1	0.65
	Neuroscience & behavior	2	0.49
	Biology & biochemistry	3	0.46
	Ecology	1	0.45
	Chemistry	1	0.09
Araraquara			
	Materials science	218	4.20
	Chemistry	312	2.14
	Pharmacology & toxicology	55	1.90
	Microbiology	30	1.14
	Engineering	73	1.09
	Physics	148	0.94
	Biology & biochemistry	77	0.93
	Agrarian sciences	33	0.80
	Neuroscience & behavior	36	0.69

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Medicine	147	0.59
	Ecology	16	0.56
	Immunology	9	0.50
	Multidisciplinaryy	3	0.46
	Molecular biology & genetics	13	0.42
	Botany & zoology	39	0.37
	Social sciences	3	0.15
	Geosciences	3	0.11
	Computer science	1	0.06
Assis			
	Psychiatry & psychology	1	5.20
	Social sciences	2	5.18
	Neuroscience & behavior	4	3.92
	Ecology	2	3.57
	Molecular biology & genetics	2	3.30
	Biology & biochemistry	5	3.06
	Botany & zoology	4	1.95
	Agrarian sciences	1	1.23
	Medicine	3	0.61
Barretos			
	Molecular biology & genetics	2	3.77
	Botany & zoology	7	3.90
	Materials science	1	1.12
	Agrarian sciences	2	2.81
	Physics	1	0.37
	Medicine	4	0.93
	Chemistry	4	1.59
Bauru			
	Molecular biology & genetics	28	2.58
	Medicine	183	2.08
	Materials science	34	1.87
	Engineering	25	1.06
	Physics	50	0.90
	Chemistry	46	0.90

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Social sciences	6	0.87
	Computer science	5	0.87
	Microbiology	5	0.54
	Geosciences	5	0.54
	Neuroscience & behavior	9	0.49
	Botany & zoology	15	0.41
	Pharmacology & toxicology	3	0.29
	Agrarian sciences	4	0.27
	Biology & biochemistry	7	0.24
	Ecology	2	0.20
Botucatu			
	Botany & zoology	404	4.12
	Molecular biology & genetics	92	3.17
	Pharmacology & toxicology	67	2.46
	Agrarian sciences	76	1.95
	Ecology	50	1.87
	Microbiology	35	1.41
	Social sciences	21	1.14
	Biology & biochemistry	88	1.13
	Medicine	204	0.86
	Psychiatry & psychology	5	0.54
	Neuroscience & behavior	26	0.53
	Multidisciplinary	3	0.49
	Immunology	7	0.42
	Geosciences	10	0.40
	Chemistry	29	0.21
	Engineering	11	0.17
	Mathematics	4	0.16
	Materials science	4	0.08
	Physics	7	0.05
Bragança Paulista			
	Materials science	28	4.31
	Pharmacology & toxicology	9	2.48
	Chemistry	38	2.08
	Molecular biology & genetics	6	1.55

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Immunology	3	1.34
	Physics	19	0.96
	Botany & zoology	12	0.92
	Ecology	3	0.84
	Engineering	7	0.83
	Biology & biochemistry	7	0.67
	Microbiology	2	0.60
	Agrarian sciences	3	0.58
	Computer science	1	0.49
	Medicine	11	0.35
	Neuroscience & behavior	1	0.15
Campinas			
	Computer science	216	2.01
	Agrarian sciences	468	1.73
	Chemistry	1562	1.63
	Mathematics	280	1.62
	Engineering	653	1.49
	Biology & biochemistry	572	1.27
	Physics	1188	1.15
	Ecology	209	1.12
	Pharmacology & toxicology	197	1.04
	Materials science	323	0.95
	Molecular biology & genetics	187	0.93
	Multidisciplinary	35	0.82
	Social sciences	104	0.81
	Microbiology	122	0.71
	Botany & zoology	482	0.71
	Neuroscience & behavior	235	0.69
	Medicine	923	0.56
	Geosciences	84	0.49
	Economics	8	0.46
	Psychiatry & psychology	27	0.42
	Immunology	40	0.34
	Space sciences	36	0.30

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
Caraguatatuba			
	Botany & zoology	21	7.23
	Biology & biochemistry	7	3.02
	Ecology	2	2.52
	Social sciences	1	1.83
	Pharmacology & toxicology	1	1.24
	Medicine	2	0.29
Catanduva			
	Neuroscience & behavior	4	10.45
	Molecular biology & genetics	1	4.39
	Agrarian sciences	1	3.28
	Botany & zoology	1	1.30
	Medicine	2	1.08
Franca			
	Economics	2	13.56
	Pharmacology & toxicology	10	6.20
	Chemistry	20	2.46
	Botany & zoology	13	2.24
	Microbiology	3	2.04
	Materials science	4	1.38
	Engineering	4	1.07
	Social sciences	1	0.91
	Molecular biology & genetics	1	0.58
	Physics	4	0.45
	Biology & biochemistry	2	0.43
	Neuroscience & behavior	1	0.35
	Medicine	3	0.21
Guaratinguetá			
	Materials science	119	5.06
	Geosciences	38	3.17
	Biology & biochemistry	92	2.44
	Space sciences	16	1.94
	Physics	121	1.69
	Engineering	48	1.58

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Chemistry	73	1.10
	Microbiology	13	1.09
	Ecology	12	0.93
	Agrarian sciences	7	0.37
	Social sciences	3	0.34
	Computer science	2	0.27
	Botany & zoology	4	0.08
	Mathematics	1	0.08
	Medicine	2	0.02
Itapetininga			
	Ecology	1	14.30
	Botany & zoology	2	7.80
Jaboticabal			
	Botany & zoology	388	6.94
	Agrarian sciences	115	5.19
	Economics	5	3.53
	Microbiology	33	2.33
	Ecology	34	2.23
	Molecular biology & genetics	17	1.03
	Biology & biochemistry	27	0.61
	Multidisciplinary	2	0.57
	Pharmacology & toxicology	5	0.32
	Immunology	2	0.21
	Neuroscience & behavior	3	0.11
	Social sciences	1	0.10
	Medicine	11	0.08
	Geosciences	1	0.07
	Engineering	1	0.03
	Chemistry	2	0.03
Jales			
	Agrarian sciences	1	9.83
	Materials science	1	7.85
	Biology & biochemistry	1	4.90

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
Jaú			
	Agrarian sciences	3	12.64
	Medicine	4	2.78
Jundiaí			
	Agrarian sciences	4	6.21
	Neuroscience & behavior	4	4.95
	Social sciences	1	3.27
	Medicine	7	1.79
	Botany & zoology	2	1.23
	Chemistry	1	0.44
Limeira			
	Microbiology	8	6.86
	Agrarian sciences	11	6.01
	Molecular biology & genetics	6	4.39
	Multidisciplinary	1	3.46
	Computer science	2	2.76
	Botany & zoology	12	2.60
	Ecology	2	1.59
	Physics	9	1.29
	Biology & biochemistry	3	0.82
Marília			
	Computer science	6	6.77
	Social sciences	7	6.59
	Molecular biology & genetics	4	2.40
	Botany & zoology	12	2.13
	Medicine	25	1.84
	Microbiology	2	1.40
	Pharmacology & toxicology	2	1.28
	Immunology	1	1.03
	Neuroscience & behavior	2	0.71
	Ecology	1	0.65
	Agrarian sciences	1	0.45
	Engineering	1	0.28
	Physics	2	0.23

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Microbiology	16	4.18
	Biology & biochemistry	29	2.41
	Materials science	17	2.26
	Pharmacology & toxicology	9	2.14
	Immunology	5	1.93
	Chemistry	37	1.75
	Ecology	7	1.70
	Psychiatry & psychology	2	1.41
	Molecular biology & genetics	5	1.12
	Multidisciplinary	1	1.06
	Botany & zoology	13	0.86
	Computer science	2	0.84
	Neuroscience & behavior	6	0.80
	Agrarian sciences	4	0.67
	Medicine	14	0.38
	Engineering	3	0.31
	Physics	7	0.31
Mogi Mirim			
	Microbiology	1	4.21
	Biology & biochemistry	2	2.67
	Medicine	6	2.65
	Materials science	1	2.14
	Botany & zoology	1	1.06
Osasco			
	Medicine	2	3.24
	Chemistry	1	2.79
Piedade			
	Social sciences	1	31.07
	Physics	1	3.87
Piracicaba			
	Ecology	222	5.58
	Agrarian sciences	301	5.20
	Botany & zoology	397	2.72
	Microbiology	59	1.60

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Molecular biology & genetics	53	1.23
	Multidisciplinary	10	1.09
	Economics	4	1.08
	Medicine	330	0.94
	Geosciences	30	0.81
	Biology & biochemistry	74	0.64
	Chemistry	116	0.57
	Pharmacology & toxicology	21	0.52
	Social sciences	9	0.33
	Engineering	30	0.32
	Computer science	4	0.17
	Immunology	4	0.16
	Materials science	10	0.14
	Mathematics	4	0.11
	Neuroscience & behavior	7	0.10
	Physics	18	0.08
Pirassununga			
	Agrarian sciences	54	6.58
	Botany & zoology	124	6.00
	Biology & biochemistry	13	0.79
	Materials science	7	0.68
	Molecular biology & genetics	4	0.65
	Mathematics	3	0.57
	Ecology	3	0.53
	Engineering	6	0.45
	Microbiology	2	0.38
	Computer science	1	0.31
	Physics	9	0.29
	Chemistry	8	0.28
	Pharmacology & toxicology	1	0.17
	Medicine	6	0.12
	Neuroscience & behavior	1	0.10
Presidente Prudente			
	Chemistry	38	2.32
	Materials science	13	2.23

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Engineering	14	1.86
	Ecology	5	1.57
	Botany & zoology	17	1.45
	Multidisciplinary	1	1.37
	Physics	24	1.35
	Computer science	2	1.09
	Geosciences	3	1.01
	Biology & biochemistry	7	0.75
	Mathematics	2	0.68
	Molecular biology & genetics	2	0.58
	Social sciences	1	0.45
	Agrarian sciences	2	0.43
	Medicine	6	0.21
Registro			
	Ecology	3	12.87
	Molecular biology & genetics	1	3.96
	Botany & zoology	2	2.34
	Physics	3	2.32
	Biology & biochemistry	1	1.47
Ribeirão Preto			
	Biology & biochemistry	309	1.51
	Molecular biology & genetics	131	1.72
	Botany & zoology	276	1.07
	Computer science	1	0.02
	Materials science	34	0.27
	Agrarian sciences	43	0.42
	Social sciences	39	0.80
	Ecology	22	0.31
	Economics	6	0.92
	Engineering	59	0.36
	Pharmacology & toxicology	239	3.34
	Physics	156	0.40
	Geosciences	6	0.09
	Immunology	80	1.81
	Mathematics	7	0.11

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Medicine	798	1.29
	Microbiology	94	1.44
	Multidisciplinary	19	1.18
	Neuroscience & behavior	320	2.50
	Psychiatry & psychology	18	0.75
	Chemistry	339	0.94
Rio Claro			
	Botany & zoology	198	3.71
	Multidisciplinary	9	2.70
	Biology & biochemistry	110	2.59
	Geosciences	29	2.15
	Ecology	31	2.13
	Microbiology	19	1.41
	Molecular biology & genetics	19	1.20
	Physics	65	0.81
	Space sciences	7	0.75
	Pharmacology & toxicology	10	0.68
	Engineering	21	0.61
	Psychiatry & psychology	3	0.60
	Mathematics	7	0.52
	Chemistry	34	0.46
	Materials science	11	0.41
	Social sciences	4	0.40
	Neuroscience & behavior	8	0.30
	Agrarian sciences	6	0.28
	Computer science	2	0.24
	Medicine	27	0.21
Santos			
	Ecology	4	3.50
	Pharmacology & toxicology	4	3.44
	Biology & biochemistry	10	3.00
	Geosciences	3	2.83
	Psychiatry & psychology	1	2.55
	Botany & zoology	8	1.91
	Chemistry	9	1.54

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Computer science	1	1.52
	Engineering	4	1.49
	Materials science	3	1.44
	Physics	1	0.16
	Medicine	1	0.10
São Carlos			
	Materials science	544	2.80
	Chemistry	1,397	2.56
	Engineering	423	1.69
	Mathematics	165	1.67
	Physics	961	1.63
	Computer science	94	1.53
	Ecology	104	0.98
	Biology & biochemistry	275	0.88
	Molecular biology & genetics	87	0.75
	Agrarian sciences	80	0.52
	Botany & zoology	194	0.50
	Pharmacology & toxicology	41	0.38
	Multidisciplinary	8	0.33
	Microbiology	19	0.19
	Social sciences	12	0.16
	Geosciences	14	0.14
	Neuroscience & behavior	23	0.12
	Psychiatry & psychology	4	0.11
	Medicine	99	0.11
	Economics	1	0.10
	Space sciences	3	0.04
	Immunology	1	0.01
São João da Boa Vista			
	Biology & biochemistry	8	6.18
	Botany & zoology	8	4.93
	Agrarian sciences	1	1.55
	Chemistry	1	0.44
	Medicine	1	0.26

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
São José do Rio Preto			
	Mathematics	39	3.78
	Molecular biology & genetics	43	3.56
	Biology & biochemistry	75	2.30
	Botany & zoology	65	1.59
	Agrarian sciences	24	1.48
	Social sciences	9	1.17
	Chemistry	56	0.98
	Medicine	89	0.91
	Pharmacology & toxicology	9	0.79
	Multidisciplinary	2	0.78
	Microbiology	8	0.77
	Immunology	5	0.71
	Engineering	16	0.61
	Neuroscience & behavior	11	0.54
	Physics	22	0.36
	Ecology	3	0.27
	Psychiatry & psychology	1	0.26
	Materials science	1	0.05
São José dos Campos			
	Geosciences	259	7.14
	Space sciences	161	6.44
	Engineering	239	2.60
	Materials science	149	2.09
	Physics	388	1.79
	Computer science	29	1.29
	Multidisciplinary	8	0.89
	Ecology	28	0.72
	Social sciences	15	0.56
	Chemistry	103	0.51
	Agrarian sciences	20	0.35
	Medicine	111	0.32
	Microbiology	11	0.30
	Economics	1	0.28
	Biology & biochemistry	29	0.25

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Mathematics	9	0.25
	Molecular biology & genetics	10	0.24
	Botany & zoology	29	0.20
	Neuroscience & behavior	14	0.20
	Pharmacology & toxicology	7	0.18
	Psychiatry & psychology	2	0.15
São Paulo			
	Psychiatry & psychology	279	1.65
	Immunology	463	1.50
	Economics	68	1.49
	Social sciences	482	1.42
	Medicine	6,079	1.40
	Space sciences	429	1.36
	Multidisciplinary	145	1.28
	Neuroscience & behavior	1,143	1.27
	Microbiology	550	1.21
	Geosciences	479	1.05
	Biology & biochemistry	1,501	1.04
	Physics	2,732	1.00
	Molecular biology & genetics	534	1.00
	Pharmacology & toxicology	485	0.97
	Mathematics	432	0.95
	Botany & zoology	1,413	0.78
	Engineering	810	0.70
	Computer science	189	0.67
	Ecology	323	0.66
	Materials science	578	0.64
	Chemistry	1,519	0.60
	Agrarian sciences	359	0.50
Sorocaba			
	Pharmacology & toxicology	5	2.63
	Materials science	7	2.06
	Chemistry	18	1.88
	Microbiology	3	1.74
	Ecology	3	1.61

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Detailed Table 8.15 (continued)
Articles and scientific specialization indices (1) by microregion and knowledge area – São Paulo State, 2002-2006

Microregion / Knowledge area		Scientific specialization	
		Articles per microregion & knowledge area (abs. nos.)	Specialization index (1)
	Engineering	6	1.37
	Physics	12	1.16
	Medicine	14	0.85
	Social sciences	1	0.78
	Botany & zoology	5	0.73
	Neuroscience & behavior	2	0.59
	Geosciences	1	0.58
	Biology & biochemistry	3	0.55
Tupã			
	Immunology	1	68.21
Votuporanga			
	Molecular biology & genetics	5	24.72
	Agrarian sciences	2	7.37
	Neuroscience & behavior	1	2.94

Source: ISI via *Web of Science*, SCIE & SSCI (extraction 2008).

(1) Scientific specialization is an indicator of a knowledge area's contribution to scientific production in a given microregion compared with the same knowledge area's contribution to scientific production in the state as a whole.

Detailed Table 8.16
Research group's, interacting firms and numbers of relationships by microregion – São Paulo State, 2006

Microregion	Research groups		Firms (1)		Relationships	
	Nºs abs.	%	Nºs abs.	%	Nºs abs.	%
Total	**528**	**100.0**	**852**	**100.0**	**1,970**	**100.0**
São Paulo City (2)	174	33.0	278	32.6	692	35.1
Campinas	76	14.4	162	19.0	307	15.6
São Carlos	63	11.9	116	13.6	211	10.7
São José dos Campos	30	5.7	37	4.3	83	4.2
Piracicaba	26	4.9	61	7.2	124	6.3
Botucatu	22	4.2	44	5.2	115	5.8
Ribeirão Preto	19	3.6	33	3.9	46	2.3
Bauru	15	2.8	23	2.7	51	2.6
Jaboticabal	14	2.7	29	3.4	76	3.8
Araraquara	14	2.7	28	3.3	58	2.9
Andradina	11	2.1	27	3.2	43	2.2
Guaratinguetá	9	1.7	27	3.2	45	2.3
Rio Claro	8	1.5	10	1.2	13	0.7
Marília	6	1.1	3	0.4	8	0.4
Pirassununga	6	1.1	9	1.1	23	1.2
Guarulhos	5	0.9	6	0.7	12	0.6
Presidente Prudente	5	0.9	6	0.7	12	0.6
São José do Rio Preto	5	0.9	9	1.1	15	0.8
ABCD Paulista	3	0.6	24	2.8	7	0.4
Franca	3	0.6	3	0.4	3	0.2
Bragança Paulista	3	0.6	3	0.4	7	0.4
Santos	3	0.6	3	0.4	6	0.3
Limeira	3	0.6	3	0.4	3	0.2
Mogi das Cruzes	2	0.4	2	0.2	4	0.2
Araçatuba	2	0.4	2	0.2	3	0.2
Assis	1	0.2	1	0.1	3	0.2
Rest of São Paulo microregion (2)	0	0.0	4	0.5	0	0.0

Source: CNPq, 2006 Census, Research Group Directory (Diretório dos Grupos de Pesquisa).
(1) **Note**: Some firms are counted more than once as they interact with research groups located in different microregions, so that the total number of firms is not found simply by adding the numbers in each microregion.

(2) São Paulo microregion = São Paulo City, ABCD Paulista (Santo André, São Bernardo do Campo, São Caetano do Sul, Diadema), Mauá, Ribeirão Pires, Rio Grande da Serra.

Detailed Table 8.17
Employees, average size and numbers of higher education institutions offering undergraduate, post-graduate and extension courses (CNAE Group 85.3) by microregion – São Paulo State, 2006

Microregion	Higher education institutions offering undergraduate, post-graduate and extension courses (CNAE Group 85.3)		
	HEIs (abs. nos.)	Employees (abs. nos.)	Average size of HEIs (no. of employees)
Total	**784**	**151,430**	**193**
Adamantina	4	448	112
Amparo	2	94	47
Andradina	8	1,027	128
Araçatuba	8	963	120
Araraquara	12	2,000	167
Assis	8	845	106
Auriflama	1	28	28
Avaré	3	220	73
Barretos	5	751	150
Bauru	18	3,281	182
Birigui	3	243	81
Botucatu	6	2,948	491
Bragança Paulista	6	1,264	211
Campinas	66	20,147	305
Campos do Jordão	1	19	19
Capão Bonito	2	7	4
Caraguatatuba	3	164	55
Catanduva	4	285	71
Dracena	6	393	66
Fernandópolis	4	561	140
Franca	7	1,309	187
Franco da Rocha	2	66	33
Guaratinguetá	6	784	131
Guarulhos	10	1,411	141
Itanhaém	2	44	22
Itapecerica da Serra	5	193	39
Itapetininga	3	424	141
Itapeva	4	293	73
Ituverava	1	277	277
Jaboticabal	9	1,633	181
Jaú	1	380	380
Jundiaí	9	1,610	179
Limeira	7	1,919	274
Lins	2	499	250

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Detailed Table 8.17 (continued)
Employees, average size and numbers of higher education institutions offering undergraduate, post-graduate and extension courses (CNAE Group 85.3) by microregion – São Paulo State, 2006

Microregion	Higher education institutions offering undergraduate, post-graduate and extension courses (CNAE Group 85.3)		
	HEIs (abs. nos.)	Employees (abs. nos.)	Average size of HEIs (no. of employees)
Marília	9	1,980	220
Mogi das Cruzes	8	1,579	197
Mogi Mirim	6	580	97
Nhandeara	2	148	74
Osasco	21	2,608	124
Ourinhos	8	438	55
Piedade	2	14	7
Piracicaba	16	3,345	209
Pirassununga	7	495	71
Presidente Prudente	9	2,641	293
Registro	5	199	40
Ribeirão Preto	22	5,915	269
Rio Claro	5	724	145
Santos	25	4,190	168
São Carlos	13	3,677	283
São João da Boa Vista	9	1,114	124
São Joaquim da Barra	1	36	36
São José do Rio Preto	18	2,525	140
São José dos Campos	17	2,216	130
São Paulo	314	66,700	212
Sorocaba	23	2,986	130
Tatuí	1	64	64
Tupã	3	288	96
Votuporanga	2	438	219

Source: Ministério do Trabalho e Emprego (MTE), RAIS 2006.

Detailed Table 8.18
Employees, average size and numbers of technical- and technological-level vocational education institutions (CNAE Group 85.4) by microregion – São Paulo State, 2006

Microregion	Vocation education institutions offering technical- & technological-level courses (CNAE Group 85.4)		
	VEIs (abs. nos.)	Employees (abs. nos.)	Average size of VEIs (no. of employees)
Total	**450**	**7,062**	**16**
São Paulo	151	3,111	21
Osasco	22	714	32
São José dos Campos	28	541	19
Campinas	25	403	16
Bauru	8	283	35
Santos	19	261	14
Guarulhos	10	175	18
Mogi das Cruzes	17	170	10
Sorocaba	13	128	10
Marília	3	115	38
Jaboticabal	2	86	43
Jundiaí	7	75	11
São José do Rio Preto	6	72	12
Guaratinguetá	7	71	10
Mogi Mirim	7	69	10
Ribeirão Preto	10	68	7
Ourinhos	4	63	16
Piracicaba	9	57	6
Fernandópolis	3	55	18
Amparo	6	46	8
Limeira	4	45	11
Pirassununga	1	44	44
Votuporanga	3	43	14
Bragança Paulista	7	36	5
Jales	2	33	17
Araraquara	9	33	4
Avaré	3	28	9
Tatuí	2	22	11
Itapecerica da Serra	4	22	6
Lins	1	20	20
Caraguatatuba	2	19	10
Birigui	3	16	5
Presidente Prudente	3	15	5
Araçatuba	7	15	2
Catanduva	2	13	7

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Detailed Table 8.18 (continued)
Employees, average size and numbers of technical- and technological-level vocational education institutions (CNAE Group 85.4) by microregion – São Paulo State, 2006

Microregion	Vocation education institutions offering technical- & technological-level courses (CNAE Group 85.4)		
	VEIs (abs. nos.)	Employees (abs. nos.)	Average size of VEIs (no. of employees)
Itapetininga	3	10	3
Registro	3	10	3
Rio Claro	3	10	3
Botucatu	2	8	4
São Carlos	2	7	4
Jaú	3	7	2
São João da Boa Vista	6	7	1
Campos do Jordão	1	6	6
Ituverava	2	6	3
Piedade	2	5	3
Itapeva	1	4	4
Assis	4	4	1
Barretos	1	3	3
Franco da Rocha	2	3	2
Itanhaém	1	2	2
Franca	2	2	1
Tupã	1	1	1
Batatais	1	0	0

Source: Ministério do Trabalho e Emprego (MTE), RAIS 2006.

Detailed Table 8.19
Technical, technological and industrial apprenticeship courses, enrollment and graduates by microregion – São Paulo State, 2006

Microregion	Technological courses			Technical courses			Industrial apprenticeship courses		
	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates
Total	**107**	**15,880**	**2,592**	**4,408**	**248,612**	**64,147**	**263**	**21,226**	**8,879**
Adamantina	-	-	-	46	2,083	593	-	-	-
Amparo	-	-	-	21	964	131	-	-	-
Andradina	-	-	-	43	1,615	328	-	-	-
Araçatuba	-	-	-	57	1,611	262	4	99	29
Araraquara	-	-	-	57	2,644	325	6	427	208
Assis	-	-	-	63	2,312	336	-	-	-
Auriflama	-	-	-	1	26	0	-	-	-
Avaré	-	-	-	12	613	161	-	-	-
Bananal	-	-	-	1	33	35	-	-	-
Barretos	-	-	-	39	1,515	74	-	-	-
Batatais	-	-	-	11	864	184	-	-	-
Bauru	-	-	-	51	2,462	145	8	549	163
Birigui	-	-	-	17	682	124	2	53	49
Botucatu	-	-	-	21	1,264	176	6	140	86
Bragança Paulista	-	-	-	53	1,830	157	8	391	235
Campinas	6	452	124	358	20,754	6,648	17	1,734	718
Campos do Jordão	-	-	-	1	83	0	-	-	-
Capão Bonito	-	-	-	13	633	85	-	-	-
Caraguatatuba	-	-	-	39	1,008	170	-	-	-
Catanduva	-	-	-	55	2,636	450	-	-	-
Dracena	-	-	-	27	1,135	369	-	-	-
Fernandópolis	1	0	0	22	651	13	-	-	-
Franca	4	153	23	38	1,588	193	4	241	89
Franco da Rocha	-	-	-	14	564	180	-	-	-
Guaratinguetá	1	340	43	83	4,160	179	2	97	90
Guarulhos	1	22	0	89	5,453	548	3	643	249
Itanhaém	-	-	-	26	1,428	135	-	-	-
Itapecerica da Serra	-	-	-	23	1,908	244	-	-	-
Itapetininga	-	-	-	13	518	0	-	-	-
Itapeva	-	-	-	33	1,563	163	-	-	-
Ituverava	-	-	-	11	229	43	-	-	-
Jaboticabal	1	540	47	39	1,644	261	-	-	-
Jales	-	-	-	39	1,325	54	-	-	-
Jaú	-	-	-	46	1,998	532	4	78	72
Jundiaí	4	189	0	69	4,041	1,333	9	840	274

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Detailed Table 8.19 (continued)
Technical, technological and industrial apprenticeship courses, enrollment and graduates by microregion – São Paulo State, 2006

Microregion	Technological courses			Technical courses			Industrial apprenticeship courses		
	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates
Limeira	5	794	110	100	5,515	604	7	634	327
Lins	-	-	-	35	1,626	383	-	-	-
Marília	3	90	0	54	2,177	386	6	316	59
Mogi das Cruzes	7	1,017	107	144	7,433	1,451	7	784	308
Mogi Mirim	-	-	-	56	2,454	640	4	99	82
Nhandeara	-	-	-	11	343	128	-	-	-
Novo Horizonte	-	-	-	7	102	1	-	-	-
Osasco	1	23	0	86	5,259	1,773	7	723	267
Ourinhos	-	-	-	46	2,351	488	3	88	67
Paraibuna/Paraitinga	-	-	-	-	-	-	-	-	-
Piedade	-	-	-	4	118	0	-	-	-
Piracicaba	-	-	-	75	4,085	981	10	703	273
Pirassununga	-	-	-	12	477	79	-	-	-
Presidente Prudente	1	81	19	89	2,725	608	5	241	104
Registro	-	-	-	21	1,186	61	-	-	-
Ribeirão Preto	1	55	12	139	6,850	2,022	17	698	451
Rio Claro	-	-	-	40	1,534	296	5	367	146
Santos	6	368	22	184	11,349	3,310	11	648	246
São Carlos	-	-	-	39	1,414	213	6	296	136
São João da Boa Vista	-	-	-	84	3,501	531	-	-	-
São Joaquim da Barra	-	-	-	46	1,943	92	-	-	-
São José do Rio Preto	2	27	0	89	4,376	934	5	253	60
São José dos Campos	2	77	0	284	16,729	2,438	16	1,557	694
São Paulo	54	10,085	1,795	995	78,693	29,319	60	6,870	2,670
Sorocaba	5	1,504	272	177	9,901	2,295	19	1,521	684
Tatuí	-	-	-	22	1,128	165	-	-	-
Tupã	-	-	-	4	104	94	-	-	-
Votuporanga	2	63	18	34	1,402	224	2	136	43

Source: Ministério da Educação (MEC), INEP (Diretoria de Avaliação da Educação Superior, Daes); SENAI.

Detailed Table 8.20
Tertiary-level technological courses, enrollment and graduates by microregion – São Paulo State, 2006

Microregion	Tertiary-level technological courses																	
	Total			Agronomy			Biology			Engineering			Pharmacy-biochemistry			Chemistry		
	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates
Total	**477**	**133,653**	**17,999**	**20**	**5,908**	**832**	**77**	**17,014**	**4,186**	**326**	**94,296**	**10,857**	**17**	**8,157**	**781**	**37**	**8,278**	**1,343**
São Paulo	106	49,967	6,629	1	250	32	27	6,647	1,649	62	36,062	4,175	7	4,815	339	9	2,193	434
Campinas	52	13,810	1,702	-	-	-	3	1,001	197	44	11,565	1,305	-	-	-	5	1,244	200
São José dos Campos	41	8,673	1,043	1	114	9	3	516	89	36	8,015	945	-	-	-	1	28	0
São Carlos	29	5,903	694	1	56	5	3	407	63	23	4,881	512	-	-	-	2	559	114
Ribeirão Preto	17	2,838	368	1	139	14	3	551	82	10	1,539	192	2	415	37	1	194	43
Sorocaba	17	4,113	487	-	-	-	3	401	51	13	3,378	367	-	-	-	1	334	69
Araraquara	16	2,895	325	-	-	-	1	268	52	13	1,790	138	1	615	92	1	222	43
Bauru	15	2,419	233	-	-	-	4	238	1	7	1,636	178	1	190	24	3	355	30
São José do Rio Preto	15	2,231	388	-	-	-	3	441	215	9	1,208	138	2	422	35	1	160	0
Santos	14	3,805	566	-	-	-	3	971	180	9	2,268	307	1	539	79	1	27	0
Osasco	12	4,186	391	-	-	-	1	361	74	9	3,041	233	1	531	46	1	253	38
Mogi das Cruzes	10	3,074	488	-	-	-	3	930	185	6	1,694	254	-	-	-	1	450	49
Barretos	9	1,111	178	-	-	-	-	-	-	6	713	96	1	264	67	2	134	15
Guaratinguetá	9	2,694	293	-	-	-	-	-	-	9	2,694	293	-	-	-	-	-	-
Limeira	9	1,525	179	1	245	28	1	317	54	6	923	97	-	-	-	1	40	0
São João da Boa Vista	9	1,175	141	1	369	40	2	228	41	5	541	60	-	-	-	1	37	0
Marília	8	1,192	138	2	554	74	1	24	0	5	614	64	-	-	-	-	-	-

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Detailed Table 8.20 (continued)
Tertiary-level technological courses, enrollment and graduates by microregion – São Paulo State, 2006

Microregion	Tertiary-level technological courses																	
	Total			Agronomy			Biology			Engineering			Pharmacy-biochemistry			Chemistry		
	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates
Guarulhos	7	3,464	1,095	-	-	-	3	1,563	763	3	599	162	-	-	-	1	1,302	170
Jundiaí	7	2,049	334	-	-	-	-	-	-	6	1,981	334	-	-	-	1	68	0
Piracicaba	7	2,768	376	1	1,076	166	1	143	14	5	1,549	196	-	-	-	-	-	-
Americana	6	1,014	86	-	-	-	1	198	41	5	816	45	-	-	-	-	-	-
Bragança Paulista	6	945	111	-	-	-	-	-	-	5	895	111	-	-	-	1	50	0
Fernandópolis	5	810	73	1	253	29	1	172	36	3	385	8	-	-	-	-	-	-
Jaboticabal	5	831	137	2	549	86	3	282	51	-	-	-	-	-	-	-	-	-
Presidente Prudente	5	823	120	1	365	50	-	-	-	4	458	70	-	-	-	-	-	-
Andradina	4	1,625	250	1	400	59	-	-	-	3	1,225	191	-	-	-	-	-	-
Lins	4	538	95	-	-	-	-	-	-	4	538	95	-	-	-	-	-	-
Araçatuba	3	511	53	-	-	-	1	69	0	2	442	53	-	-	-	-	-	-
Assis	3	792	141	1	451	60	1	158	37	-	-	-	-	-	-	1	183	44
Botucatu	3	1,133	245	1	423	74	1	486	134	1	224	37	-	-	-	-	-	-
Franca	3	1,167	231	-	-	-	1	310	104	1	412	33	-	-	-	1	445	94
Mogi Mirim	3	136	18	-	-	-	-	-	-	2	136	18	-	-	-	1	0	0
Pirassununga	3	914	103	-	-	-	-	-	-	3	914	103	-	-	-	-	-	-
Adamantina	2	459	2	-	-	-	-	-	-	2	459	2	-	-	-	-	-	-
Itapeva	2	315	19	-	-	-	-	-	-	2	315	19	-	-	-	-	-	-
Ourinhos	2	190	16	1	40	0	-	-	-	1	150	16	-	-	-	-	-	-
Rio Claro	2	397	51	-	-	-	1	275	51	1	122	0	-	-	-	-	-	-

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Detailed Table 8.20 (continued)
Tertiary-level technological courses, enrollment and graduates by microregion – São Paulo State, 2006

Microregion	Tertiary-level technological courses																	
	Total			Agronomy			Biology			Engineering			Pharmacy-biochemistry			Chemistry		
	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates	No. of courses	Enrollment	Graduates
Votuporanga	2	480	72	-	-	-	-	-	-	1	114	10	1	366	62	-	-	-
Avaré	1	39	0	1	39	0	-	-	-	-	-	-	-	-	-	-	-	-
Batatais	1	35	0	-	-	-	1	35	0	-	-	-	-	-	-	-	-	-
Catanduva	1	22	22	-	-	-	1	22	22	-	-	-	-	-	-	-	-	-
Ituverava	1	456	106	1	456	106	-	-	-	-	-	-	-	-	-	-	-	-
Registro	1	129	0	1	129	0	-	-	-	-	-	-	-	-	-	-	-	-

Source: Ministério da Educação (MEC), INEP (2006).

Detailed Table 8.21
Selected ST&I indicators by macroregion and microregion – São Paulo State, 2006

Administrative region		Population		GDP (1)		Employment		
Macroregion	Microregion	Projection (no. of inhabitants)	%	R$ million	*Per capita* R$	Grand total (abs. nos.)	% local population employed	Technological occupations (per 1000 jobs)
Total		**41,055,734**	**100.00**	**902,784**	**21,989**	**10,315,118**	**25.1**	**42.71**
Metropolitan São Paulo	São Paulo	13,597,629	33.12	383,674	28,216	4,548,623	33.5	52.17
Campinas	Campinas	2,530,029	6.16	67,593	26,716	675,182	26.7	43.64
Paraíba Valley	São José dos Campos	1,386,456	3.38	34,246	24,700	293,758	21.2	51.28
Araraquara	São Carlos	300,053	0.73	4,686	15,616	76,836	25.6	37.60
Metropolitan São Paulo	Osasco	1,867,383	4.55	61,736	33,060	471,836	25.3	50.27
Metropolitan São Paulo	Sorocaba	1,313,295	3.20	25,500	19,417	270,227	20.6	36.72
Metropolitan São Paulo	Santos	1,463,067	3.56	33,662	23,008	281,594	19.2	34.38
Metropolitan São Paulo	Guarulhos	1,406,376	3.43	29,072	20,671	275,846	19.6	28.17
Metropolitan São Paulo	Mogi das Cruzes	1,363,322	3.32	16,956	12,437	202,637	14.9	32.87
Araraquara	Araraquara	464,642	1.13	9,824	21,143	123,868	26.7	28.64
Ribeirão Preto	Ribeirão Preto	942,373	2.30	19,941	21,160	242,150	25.7	38.77
Piracicaba	Piracicaba	716,344	1.74	10,747	15,003	141,868	19.8	33.66
Paraíba Valley	Guaratinguetá	403,678	0.98	4,534	11,232	67,335	16.7	28.57
Bauru	Bauru	568,117	1.38	8,688	15,292	124,393	21.9	35.44
São José do Rio Preto	São José do Rio Preto	760,615	1.85	11,244	14,783	155,128	20.4	36.49
Metropolitan São Paulo	Jundiaí	597,997	1.46	23,342	39,034	158,230	26.5	32.86
Araçatuba	Andradina	179,591	0.44	3,317	18,470	34,313	19.1	24.92
Piracicaba	Limeira	574,322	1.40	10,836	18,867	131,612	22.9	30.54
Marília	Marília	338,113	0.82	4,091	12,101	67,858	20.1	42.93
Campinas	São João da Boa Vista	423,624	1.03	5,708	13,474	81,286	19.2	25.37
Ribeirão Preto	Franca	403,778	0.98	4,577	11,336	79,308	19.6	29.87
Bauru	Botucatu	202,201	0.49	3,516	17,390	52,774	26.1	25.39
Ribeirão Preto	Barretos	133,868	0.33	1,843	13,768	32,087	24.0	30.79
Metropolitan São Paulo	Bragança Paulista	486,724	1.19	7,804	16,033	122,883	25.2	22.53
Campinas	Pirassununga	184,996	0.45	2,778	15,017	41,597	22.5	19.33
Ribeirão Preto	Jaboticabal	415,120	1.01	7,098	17,099	90,158	21.7	26.43
Presidente Prudente	Presidente Prudente	592,598	1.44	7,268	12,264	103,350	17.4	27.06
São José do Rio Preto	Fernandópolis	98,648	0.24	2,089	21,176	19,059	19.3	36.05
Assis	Assis	265,736	0.65	3,756	14,135	52,145	19.6	30.30

DETAILED TABLE 8.21

Technological courses, all levels of education		Laboratories	R&D institutions in physical & natural sciences	R&D institutions in social & human sciences	Patents		Scientific articles		Relationships between research groups & firms RG/F	Innovative firms (macro-region)
No. of students enrollled	Enrollment in ST&I/100,000 inhab	Abs. nos.	Abs. nos.	Abs. nos.	Abs. nos.	Patents / 100,000 inhab.	Abs. nos.	Articles / 100,000 inhab.	Abs. nos.	%
403,197	**982.07**	**710**	**127**	**62**	**12,663**	**30.84**	**33,819**	**96**	**1,970**	
145,615	1,070.89	401	34	38	6,187	45.50	17,672	130	699	32
37,764	1,492.63	99	27	7	1,054	41.66	6,614	261	307	39
27,036	1,950.01	38	4		252	18.18	1,390	100	83	31
7,613	2,537.22	51	12		156	51.99	3,732	1.244	211	39
10,191	545.74	12	3	1	481	25.76	-	-	0	32
17,039	1,297.42	10	7	1	254	19.34	69	5	0	33
16,170	1,105.21	10	1	1	160	10.94	48	3	6	32
9,582	681.33	9	2	-	282	20.05	-	-	12	32
12,308	902.79	8	2	-	146	10.71	133	10	4	32
5,966	1,284.00	-	2	-	128	27.55	978	210	58	39
10,441	1,107.95	9	4	2	226	23.98	2,546	270	46	35
7,556	1,054.80	20	7	-	142	19.82	1,494	209	124	33
7,291	1,806.14	2	-	-	36	8.92	462	114	45	31
5,430	955.79	2	-	1	137	24.11	378	67	51	21
6,887	905.45	-	-	1	194	25.51	374	49	15	29
7,119	1,190.47	7	1	-	213	35.62	15	3	0	33
3,240	1,804.10	-	1	-	6	3.34	120	67	43	32
8,468	1,474.43	6	-	-	213	37.09	48	8	3	33
3,775	1,116.49	1	-	1	189	55.90	52	15	8	62
4,676	1,103.81	-	-	1	44	10.39	38	9	0	39
3,149	779.88	4	1	1	75	18.57	62	15	3	35
2,537	1,254.69	1	2	1	16	7.91	950	470	115	21
2,626	1,961.63	-	-	-	14	10.46	19	14	0	35
3,166	650.47	-	1	2	139	28.56	132	27	7	33
1,391	751.91	-	-	-	16	8.65	206	111	23	39
3,015	726.30	-	3	-	47	11.32	559	135	76	35
3,870	653.06	1	3	1	72	12.15	123	21	12	33
1,461	1,481.02	1	-	-	24	24.33	-	-	0	29
3,104	1,168.08	-	-	-	19	7.15	22	8	3	33

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Detailed Table 8.21 (continued)
Selected ST&I indicators by macroregion and microregion – São Paulo State, 2006

Administrative region		Population		GDP (1)		Employment		
Macroregion	Microregion	Projection (no. of inhabitants)	%	R$ million	*Per capita* R$	Grand total (abs. nos.)	% local population employed	Technological occupations (per 1000 jobs)
Bauru	Lins	157,748	0.38	2,197	13,928	38,136	24.2	26.64
Araçatuba	Araçatuba	248,388	0.61	3,537	14,240	51,157	20.6	36.14
São José do Rio Preto	Votuporanga	164, 81	0.40	1,509	9,186	23,232	14.1	22.60
Presidente Prudente	Adamantina	150,269	0.37	1,508	10,036	24,822	16.5	31.18
Ribeirão Preto	Ituverava	96,935	0.24	1,276	13,160	13,961	14.4	28.08
Piracicaba	Rio Claro	83,549	0.20	4,614	55,225	70,758	84.7	30.92
Itapetininga	Itapeva	250,235	0.61	2,482	9,921	33,748	13.5	22.91
Assis	Ourinhos	312,836	0.76	3,417	10,922	53,651	17.1	24.66
Campinas	Mogi Mirim	391,221	0.95	6,705	17,140	93,798	24.0	27.23
South coast of São Paulo State	Registro	299,635	0.73	1,920	6,409	29,940	10.0	27.79
Bauru	Avaré	178,609	0.44	1,913	10,712	29,480	16.5	21.13
Ribeirão Preto	Batatais	106,620	0.26	1,353	12,691	20,185	18.9	34.78
São José do Rio Preto	Catanduva	220,261	0.54	3,397	15,423	48,542	22.0	35.02
Paraíba Valley	Caraguatatuba	281,532	0.69	6,076	21,583	42,257	15.0	25.44
Itapetininga	Tatuí	245,794	0.60	4,785	19,470	60,278	24.5	25.65
Ribeirão Preto	São Joaquim da Barra	207,907	0.51	3,451	16,598	48,559	23.4	20.02
São José do Rio Preto	Novo Horizonte	76,118	0.19	1,100	14,456	12,864	16.9	28.45
Bauru	Jaú	309,777	0.75	4,434	14,315	85,521	27.6	34.86
São José do Rio Preto	Nhandeara	60,439	0.15	791	13,090	11,283	18.7	35.54
Metropolitan São Paulo	Itapecerica da Serra	977,388	2.38	13,880	14,201	180,974	18.5	35.55
Campinas	Amparo	178,422	0.43	2,246	12,591	37,220	20.9	23.54
Itapetininga	Itapetininga	185,482	0.45	2,358	12,713	35,530	19.2	25.19
Araçatuba	Birigui	250,376	0.61	2,968	11,856	56,379	22.5	25.12
Marília	Tupã	113,542	0.28	1,337	11,779	20,080	17.7	33.42
Paraíba Valley	Paraibuna/Paraitinga	73,296	0.18	850	11,598	9,229	12.6	28.71
São José do Rio Preto	Auriflama	44,154	0.11	482	10,927	6,070	13.7	31.96
Presidente Prudente	Dracena	108,316	0.26	1,087	10,040	18,572	17.1	31.93
São José do Rio Preto	Jales	176,613	0.43	1,659	9,396	22,222	12.6	27.23
Paraíba Valley	Campos do Jordão	71,930	0.18	614	8,539	12,092	16.8	21.25
Metropolitan São Paulo	Franco da Rocha	465,408	1.13	4,180	8,982	41,888	9.0	30.61
Metropolitan São Paulo	Piedade	203,299	0.50	1,666	8,194	25,474	12.5	19.90

DETAILED TABLE 8.21

Technological courses, all levels of education		Laboratories	R&D institutions in physical & natural sciences	IR&D institutions in social & human sciences	Patents		Scientific articles		Relationships between research groups & firms RG/F	Innovative firms (macro-region)
No. of students enrollled	Enrollment in ST&I/100,000 inhab.	Abs. nos	Abs. nos	Abs. nos	Abs. nos	Patents / 100,000 inhab.	Abs. nos	Articles / 100,000 inhab.	Abs. nos	%
2,164	1, 371.81	4	1	-	9	5.71	-	-	0	21
2,221	894.17	-	-	-	32	12.88	82	33	3	32
2,081	1,266.73	-	1	-	14	8.52	7	4	0	29
2,542	1,691.63	-	-	-	18	11.98	-	-	0	33
685	706.66	-	-	-	12	12.38	-	-	0	35
2,298	2,750.48	1	2	-	57	68.22	542	649	13	33
1,878	750.49	-	-	-	2	0.80	-	-	0	31
2,629	840.38	-	-	-	27	8.63	-	-	0	33
2,689	687.34	2	-	-	91	23.26	8	2	0	39
1,315	438.87	1	-	-	3	1.00	10	3	0	8
652	365.04	-	-	1	32	17.92	-	-	0	21
899	843.18	-	-	-	34	31.89	-	-	0	35
2,658	1,206.75	-	3	-	46	20.88	8	4	0	29
-	-	1	-	-	17	6.04	7	2	0	31
-	-	2	-	1	75	30.51	-	-	0	31
-	-	-	-	-	14	6.73	-	-	0	35
-	-	-	-	-	11	14.45	-	-	0	29
-	-	-	2	-	50	16.14	7	2	0	21
-	-	-	-	-	4	6.62	-	-	0	29
-	-	2	1	1	245	25.07	-	-	0	32
-	-	-	-	-	29	16.25	-	-	0	39
-	-	1	-	-	9	4.85	2	1	0	31
-	-	-	-	-	38	15.18	-	-	0	32
-	-	-	-	-	22	19.38	1	1	0	62
-	-	-	-	-	7	9.55	-	-	0	31
-	-	-	-	-	1	2.26	-	-	0	29
-	-	-	-	-	15	13.85	-	-	0	33
-	-	-	-	-	7	3.96	2	1	0	29
-	-	-	-	-	2	2.78	-	-	0	31
-	-	2	-	-	40	8.59	-	-	0	32
-	-	2	-	-	17	8.36	2	1	0	33

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Detailed Table 8.21 (continued)
Selected ST&I indicators by macroregion and microregion – São Paulo State, 2006

Administrative region		Population		GDP (1)		Employment		
Macroregion	Microregion	Projection (no. of inhabitants)	%	R$ million	Per capita R$	Grand total (abs. nos.)	% local population employed	Technological occupations (per 1000 jobs)
Itapetininga	Capão Bonito	129,097	0.31	1,081	8,373	16,039	12.4	19.89
Litoral Sul Paulista	Itanhaém	228,667	0.56	1,601	7,002	19,786	8.7	25.93
Paraíba Valley	Bananal	26,895	0.07	175	6,506	3,450	12.8	41.16
City not identified	City not identified	-	-	-	-	-	-	-

Source: Fundação Seade; IBGE; Ministério do Trabalho e Emprego (MTE), RAIS 2006; Ministério da Educação (MEC), INEP.

Note:The shaded areas represent the five regions selected for analysis.

(1) Per capita GDP was calculated using the 2006 population estimate by Instituto Brasileiro de Geografia e Estatística (IBGE). Municipal GDPs were estimated on the basis

DETAILED TABLE 8.21

Technological courses, all levels of education		Laboratories	R&D institutions in physical & natural sciences	R&D institutions in social & human sciences	Patents		Scientific articles		Relationships between research groups & firms RG/F	Innovative firms (macro-region)
No. of students enrollled	Enrollment in ST&I/100,000 inhab.	Abs. nos	Abs. nos	Abs. nos	Abs. nos	Patents / 100,000 inhab.	Abs. nos	Articles / 100,000 inhab.	Abs. nos	%
-	-	-	-	-	1	0.77	-	-	0	31
-	-	-	-	-	11	4.81	-	-	0	8
-	-	-	-	-	2	7.44	-	-	0	31
*	*	-	-	-	747	-	663	-	-	-

of taxes on total value added, including the value added by public administration.

Detailed Chart 8.1
Major occupational groups: description and competency level

Major group	Description	Competency level
1	Senior government officials, leaders of public-interest organizations and business organizations, managers	Undefined
2	Professionals in the sciences and arts	4
3	Middle-level technicians	3
4	Workers in administrative services	2
7	Workers in production of industrial goods and services (manual)	2
8	Workers in production of industrial goods and services (machine-operating)	2
9	Workers in maintenance and repair	2

Source: Ministério do Trabalho e Emprego (MTE), Classificação Brasileira de Ocupações (CBO) 2002

Detailed Chart 8.2
Occupational categories: description and number of families selected

Occupations	Description	No. of families selected
Technological	Occupations requiring tertiary education and relating to research or management.	61
Technical	Occupations requiring secondary education and playing an importance role in the creation and diffusion of new knowledge.	62
Operational	Occupations requiring primary education and a high level of skill or competency in machine operation and assembly.	29

Source: Ministério do Trabalho e Emprego (MTE), Classificação Brasileira de Ocupações (CBO) 2002.

Detailed Chart 8.3
Selected technical and scientific occupations: correspondence between base groups in CBO 1994 and 2002

CBO 2002 code	Description	CBO 1994 code
	Technological occupations	
1236	Directors of IT services	
1237	Directors of R&D	
1411	Managers of production and operations in agriculture, fishery, aquaculture and forestry firms	242
1412	Managers of production and operations in mining, manufacturing and public service firms	242
1425	Managers of IT	
1426	Managers of R&D	242
2011	Professionals in biotechnology	051
2012	Professionals in metrology	
2021	Mechatronics engineers	029
2030	Researchers in biological sciences	051
2031	Researchers in natural and exact sciences	019
2032	Researchers in engineering and technology	029
2033	Researchers in health sciences	079
2034	Researchers in agricultural sciences	019
2035	Researchers in social and human sciences	199
2111	Professionals in mathematics	082
2112	Professionals in statistics	081
2122	Computer engineers	029
2123	Administrators of networks, systems and databases	
2124	Analysts of computer systems	083
2131	Physicists	012
2132	Chemists	011
2133	Professionals in atmospheric and space sciences and astronomy	019
2134	Geologists and geophysicists	019
2141	Architects and urbanists	021
2142	Civil engineers and related professionals	021
2143	Electrical and electronics engineers and related professionals	023
2144	Mechanical engineers	024
2145	Chemical engineers	025
2146	Metallurgical and materials engineers	026
2147	Mining engineers	027
2148	Surveying and cartographic engineers	019
2149	Production, quality and safety engineers	029
2211	Biologists and related professionals	051
2221	Forest engineers	020
2231	Physicians	065

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Detailed Chart 8.3 (continued)
Selected technical and scientific occupations: correspondence between base groups in CBO 1994 and 2002

CBO 2002 code	Description	CBO 1994 code
2232	Dentists	079
2233	Veterinarians and animal scientists	065
2234	Pharmaceutical scientists	067
2235	Nurses	079
2236	Physiotherapists and related professionals	079
2237	Nutritionists	068
2238	Speech and hearing therapists	079
2241	Professionals in physical education	079
2341	Tertiary-level teachers of mathematics, statistics and computing	
2342	Tertiary-level teachers of physical, chemical and related sciences	
2343	Tertiary-level teachers of architecture and urbanism, engineering, geophysics and geology	133
2344	Tertiary-level teachers of biological and health sciences	
2347	Tertiary-level teachers of human sciences	
2348	Tertiary-level teachers of economic, administrative and accounting sciences	
2349	Tertiary-level teachers of arts	
2410	Lawyers	199
2511	Professionals in sociological anthropological research and analysis	
2512	Economists	199
2513	Professionals in geographical research and analysis	
2612	Information professionals	
2624	Visual artists and industrial designers	022
3185	Construction and architectural designers	038
3186	Mechanical designers	038
3187	Electronics designers	038
3188	Designers and models of sundry products and services	038
	Technical occupations	
2321	Teachers in secondary education	
2331	Teachers in vocational education	144
2332	Instructors in vocational education	144
3001	Technicians in mechatronics	039
3003	Technicians in electromechanics	039
3011	Industrial laboratory technicians	039
3012	Bioengineering support technicians	039
3111	Chemical technicians	036
3112	Production technicians in chemical and petrochemical plants, refineries, gas plants and related industries	039
3116	Technicians in textiles	037
3121	Technicians in construction (buildings)	

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Detailed Chart 8.3 (continued)
Selected technical and scientific occupations: correspondence between base groups in CBO 1994 and 2002

CBO 2002 code	Description	CBO 1994 code
3122	Technicians in construction (infrastructure)	
3123	Technicians in geomatics	039
3131	Technicians in electricity and electrotechnics	034
3132	Technicians in electronics	034
3133	Technicians in telecommunications	034
3134	Technicians in calibration and instrumentation	039
3135	Technicians in photonics	
3141	Mechanical technicians in fabrication of machines, systems and instruments	035
3142	Mechanical technicians (tools)	035
3143	Technicians in vehicle mechanics	035
3144	Mechanical technicians in maintenance of machines, systems and instruments	035
3146	Technicians in metalworking (metal structures)	032
3147	Technicians in steelmaking	032
3161	Technicians in geology	032
3163	Technicians in mining	032
3171	Technicians in systems and applications development	084
3172	Technicians in computer operation and monitoring	039
3180	Technical draftsmen in general	038
3181	Technical draftsmen in construction and architecture	038
3182	Technical draftsmen in mechanics	038
3183	Technical draftsmen in electricity, electronics, electromechanics and HVAC	038
3184	Technical draftsmen of sundry products and services	038
3192	Technicians in furniture and related industries	
3201	Technicians in biology	031
3211	Technicians in agriculture (crops)	031
3212	Technicians in forestry	031
3213	Technicians in aquaculture	031
3223	Technicians in optics and optometry	075
3224	Technicians in dentistry	
3225	Orthotic and prosthetic technicians	075
3226	Orthopedic cast technicians	
3231	Technicians in agriculture (livestock)	
3241	Orthopedic cast technicians	
3251	Technicians in pharmacy and pharmaceutical dispensing	
3252	Technicians in food production, conservation and quality	
3253	Biotechnology support technicians	
3322	Practical teachers in vocational education	

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Detailed Chart 8.3 c (continued)
Selected technical and scientific occupations: correspondence between base groups in CBO 1994 and 2002

CBO 2002 code	Description	CBO 1994 code
3511	Accounting technicians	030
3513	Technicians in administration	030
3911	Technicians in production planning and control	
3912	Production control technicians	
3951	R&D support technicians	
7254	Engine and turbocharger assembly mechanics	841
9111	Pump, motor, compressor and transmission equipment maintenance mechanics	841
9112	HVAC installation and maintenance mechanics	849
9113	Industrial machinery maintenance mechanics	841
9131	Heavy machinery and farm implement maintenance mechanics	849
9141	Aircraft maintenance mechanics	849
9142	Marine engine and equipment maintenance mechanics	849
9143	Metro and railway maintenance mechanics	
9144	Automotive vehicle maintenance mechanics	843
	Operational occupations	
4121	Data input/output equipment operators	
7156	Electrical facility workers	855
7211	Toolmakers and related workers	832
7213	Metal sharpeners and polishers	836
7214	CNC milling machine operators	837
7221	Metal forging workers	831
7245	Metal forming machine operators	
7250	Machine setters and adjusters	840
7251	Assembly line machine, device and accessory assembler	841
7252	Industrial machine assemblers	841
7253	Heavy machinery and farm implement assemblers	841
7255	Automotive vehicle assemblers (assembly line)	841
7256	Aircraft system and structure assemblers	841
7257	HVAC equipment installers	841
7311	Electrical and electronic equipment assemblers	851
7312	Telecommunications equipment assemblers	851
7313	Telecommunications line and equipment installers/repairers	856
7321	Electrical, telephone and data communications line and cable installers/repairers	857
7411	Precision instrument mechanics	842
7734	Wood milling machine operators (serial production)	834
7735	CNC wood milling machine operators	

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Detailed Chart 8.3 (continued)
Selected technical and scientific occupations: correspondence between base groups in CBO 1994 and 2002

CBO 2002 code	Description	CBO 1994 code
8214	Metal and sheet metal finishing equipment operators	839
9192	Mower and chainsaw maintenance and related trades workers	849
9193	Bicycle, sports and fitness equipment maintenance mechanics	849
9511	Electrical and electronics maintenance electricians	854
9513	Installers and maintainers of electrical and electronic security systems	
9531	Air, land and naval vehicle electronics maintenance	859
9541	Electromechanical installers and maintainers of lifts, escalators and automatic doors	854
9542	Repairers of home appliances	854

Source: Ministério do Trabalho e Emprego (MTE), Classificação Brasileira de Ocupações (CBO) 1994 & 2002

Detailed Chart 8.4
Sectors of economic activity by CNAE 2.0 Division

Sector		CNAE 2.0 Division (1)
1	Machinery, equipment, appliances	26, 27, 28
2	Commerce, vehicle repair, personal & domestic articles, lodging, catering	45, 46, 47, 55, 56, 79
3	Corporate services	33, 62, 63, 69, 70, 71, 72, 73, 78, 80, 81, 82
4	Automotive manufacturing	29, 30
5	Metalworking	24, 25
6	Chemicals, petrochemicals	19, 20, 21, 22, 23
7	Construction	41, 42, 43
8	Public administration, defense, social security, international organizations, other extraterritorial institutions	84, 99
9	Education	85
10	Transport, storage	49, 50, 51, 52
11	Manufacturing of food, beverages & tobacco products	10, 11, 12
12	Production & distribution of electricity, gas, water	35, 36
13	Financial intermediation, insurance, pensions, related services	64, 65, 66
14	Healthcare, veterinary services	75, 86, 87
15	Social, collective, personal & domestic services	37, 88, 90, 91, 92, 93, 94, 95, 96, 97
16	Manufacturing of wood, pulp & paper products, publishing, printing	16, 17, 18, 58
17	Communications	53, 59, 60, 61
18	Manufacturing of textiles, clothing, leather goods, footwear	13, 14, 15
19	Manufacturing of furniture, sundry industries, recycling	31, 32, 38, 39
20	Agriculture, silviculture, forestry, fishing	01, 02, 03
21	Real estate, rental	68, 77
22	Mining	05, 06, 07, 08, 09

Source: Ministério do Trabalho e Emprego (MTE), RAIS 2006.

(1) CNAE 2.0 = National Classification of Economic Activities, version 2.0.

Detailed Chart 8.5
Technology domains and subdomains according to Observatoire des Sciences et des Techniques (France)

Technology domain	Technology subdomain
Consumer goods, construction	Construction
	Consumer goods
Electronics, electricity	Audiovisual technology
	Electrical components
	Information technology
	Semiconductors
	Telecommunications
Instrumentation	Analysis, measurement, control
	Medical engineering
	Optics
Machinery, mechanics, transport	Agricultural & food processing apparatus
	Mechanical components
	Space technology, weapons
	Machines, tools
	Environment, pollution
	Engines, pumps, turbines
	Thermal procedures
	Transport
Unclassified	Unclassified
Procedures, basic chemicals, metallurgy	Biotechnology
	Pharmaceuticals, cosmetics
	Handling, printing
	Materials, metallurgy
	Technical procedures
	Agricultural & food products
	Material processing
Fine chemicals, pharmaceuticals	Basic chemicals
	Macromolecular chemistry
	Organic chemicals
	Nuclear techniques
	Surface treatment

Source: OST (1996).

Detailed Chart 8.6
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
Araçatuba			
	RBC	370	Líder Balanças - Marcos Ribeiro & Cia. Ltda. - EPP
Bauru			
	RBLE	CRL 0086	Laboratório de Ensaios em Lubrificantes Tintas e Vernizes. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0238	Laboratórios de Ensaios de Papel e Papelão Ondulado (Lappon). Serviço Nacional de Aprendizagem Industrial (SENAI)
Botucatu			
	RBLE	CRL 0276	Laboratório da Divisão de Controle Sanitário e Ambiental do Médio Tietê. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Campinas			
	RBC	381	Balanças Brasil Ltda.
	RBC	408	C.C.M. Centro de Confiabilidade Metrológica Ltda.
	RBC	148	Ceime Calibração e Comércio de Instrumentos Ltda.
	RBC	406	Cristalia Balanças Calibração e Automações de Sistemas de Pesagens Ltda.
	RBC	124	Laboratório de Calibração. Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD)
	RBC	124	Laboratório de Calibração. Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD)
	RBC	124	Laboratório de Calibração. Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD)
	RBC	124	Laboratório de Calibração. Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD)
	RBC	247	Laboratório de Calibração Metroval. Metroval Controle de Fluidos Ltda.
	RBC	379	Laboratório de Metrologia. Laborcruz João Ferreira da Cruz LCM ME
	RBC	55	Laboratório de Metrologia. Universidade Estadual de Campinas (Unicamp) / Fundação de Desenvolvimento da Unicamp (Funcamp)
	RBC	295	LG Metrologia. LG Comércio e Conserto de Instrumentos de Medição Ltda.
	RBC	323	Micropac Indústria e Comércio de Instrumentos de Medição Ltda.
	RBC	375	VL Corrêa Medição e Calibração Ltda.
	RBLE	CRL 0110	Setor de Laboratório de Campinas. Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CRL 0248	Eco System Preservação do Meio Ambiente Ltda.
	RBLE	CRL 0225	Eurofins do Brasil Análises de Alimentos Ltda.
	RBLE	CRL 0187	Laboratório de Ensaios Fitlab. Fundação para Inovações Tecnológicas (Fitec)
	RBLE	CRL 0147	Laboratórios da Fundação CPqD. Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD)
	RBLE	CRL 0207	Central Analítica do Instituto de Chemistry. Universidade Estadual de Campinas (Unicamp) / Fundação de Desenvolvimento da Unicamp (Funcamp)

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBLE	CLF 0062	Laboratório de Controle de Qualidade. Galena Chemistry e Farmacêutica Ltda.
	RBLE	CRL 0190	Galeno Research Unit. Galeno Desenvolvimento de Pesquisas Ltda.
	RBLE	CLF 0016	Laboratório de Emissões do Campo de Provas da Cruz Alta. General Motors do Brasil Ltda.
	RBLE	CLF 0012	Laboratório de Ensaios de Pneus. Goodyear do Brasil Produtos de Borracha Ltda.
	RBLE	CRL 0181	Laboratório de Ensaios e Testes. Instituto de Pesquisas Eldorado
	RBLE	CRL 0259	Centro de Pesquisa e Desenvolvimento de Embalagens. Instituto de Tecnologia de Alimentos (Ital)
	RBLE	CRL 0143	Laboratório de Ensaios da NMI do Brasil Ltda. NMI Brasil Ltda.
	RBLE	CLF 0057	Laboratório de Análise de Impacto Ambiental. Rhodia Poliamida & Especialidades Ltda.
	RBLE	CLF 0046	Laboratório de Emissões Veiculares. Robert Bosch Ltda.
	RBLE	CRL 0206	Laboratório de Ensaios Têxteis de Americana Ltda. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CLA 0014	T&E Analítica Comércio e Análises Chemistrys Ltda.
	RBLE	CRL 0165	Laboratório Ambiental. Tasqa Serviços Analíticos Ltda.
	RBLE	CLA 0010	Laboratório de Estudo Bpl. Tasqa Serviços Analíticos Ltda.
	RBLE	CRL 0166	Laboratório de Microbiology. Tasqa Serviços Analíticos Ltda.
Caraguatatuba			
	RBLE	CRL 0284	Laboratório da Divisão de Controle Sanitário do Litoral Norte. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Fernandópolis			
	RBLE	CRL 0277	Laboratório de Controle Sanitário de Fernandópolis. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Franca			
	MTE		Instituto de Pesquisas Tecnológicas (IPT) de Franca/SP
	RBLE	CRL 0085	Laboratório de Ensaios de Controle de Qualidade de Água e Esgoto (Rgoc). Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CRL 0197	Laboratório de Efluentes e Resíduos Industriais. Serviço Nacional de Aprendizagem Industrial (SENAI)
Franco da Rocha			
	RBC	395	Caieiras Balanças Comércio e Serviço Ltda.
	RBLE	CLA 0005	Laboratório de Formulações. Dow Agrosciences
Guaratinguetá			
	RBLE	CLF 0042	Lab. Global de Meio Ambiente e Segurança Alimentar / Global Environmental & Consumer Safety Laboratory (Gencs). Basf S.A.
	RBLE	CLA 0009	Basf S.A. – Lab. Global de Meio Ambiente e Segurança Alimentar – Global Environmental & Consumer Safety Laboratory/Gencs

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
Guarulhos			
	RBC	316	Laboratório de Calibração (Labocal). Sertin Comércio e Serviços Técnicos de Instrumentation Ltda.
	RBLE	CLF 0056	Flexform Indústria Metalúrgica Ltda.
	RBLE	CRL 0245	Laboratório de Ensaio de Pneus Levorin. Industrial Levorin S/A.
	RBLE	CRL 0154	Lab System. Instituto Lab System de Pesquisas e Ensaios Ltda.
	RBLE	CLF 0021	Laboratório de Ensaio de Pneus (LEP). Maggion Indústrias de Pneus e Máquinas Ltda.
Itapecerica da Serra			
	RBC	398	Kratos Equipamentos Industriais Ltda.
	RBC	168	Laboratório de Vazão. Conaut Controles Automáticos Ltda.
Itapetininga			
	RBLE	CRL 0128	Laboratório de Ensaio. Divisão de Controle Sanitário do Alto Paranapanema (Raoc). Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Jundiaí			
	RBC	322	Laboratório de Volumetria Hexis. Hexis Científica S.A.
	RBLE	CRL 0174	Laboratório da Companhia Saneamento de Jundiaí. Companhia Saneamento de Jundiaí (CSJ)
	RBLE	CLF 0035	Laboratório de Gases Especiais. Linde Gases Ltda.
	RBLE	CLF 0068	Sadia S.A.
Limeira			
	RBC	174	Laboratório de Metrologia Dimensional. Labortec Metrologia Ltda.
	RBLE	CRL 0137	Laboratório de Ensaios Cerâmicos (Labccb). Centro Cerâmico do Brasil
	RBLE	CRL 0297	Laboratórios Lafiq/Lali/Lamed/Lamic/Lam. Planejamento e Tecnologia Agrícola Ltda. (Plantec)
	RBLE	CLA 0021	Centro de Pesquisas Agronômicas. Planejamento e Tecnologia Agrícola Ltda. (Plantec)
Lins			
	RBLE	CLF 0066	Laboratório Central. Bertin Ltda.
	RBLE	CRL 0278	Laboratório de Controle Sanitário de Lins. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CRL 0098	Laboratório de Ensaios de Materiais do Centro Tecnológico da Funcação Paulista (Cetec). Fundação Paulista de Tecnologia e Educação (FPTE)
Marília			
	RBLE	CRL 0105	Setor de Laboratório de Marília. Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
Mogi das Cruzes			
	RBC	31	Laboratório de Metrologia. Mitutoyo Sul Americana Ltda.
	RBC	31	Laboratório de Metrologia. Mitutoyo Sul Americana Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	376	Laboratório de Pressão Famabrás. Famabrás Indústria de Aparelhos de Medição Ltda.
	RBLE	CRL 0221	Centro Tecnológico de Análise de Alimentos. Cetal S/C Ltda.
	RBLE	CRL 0216	Hazmat Laboratório de Embalagens e Consultoria Ltda.
Mogi Mirim			
	RBLE	CLA 0015	Mojimirim Regulatory Laboratory. Dow Agrosciences Industrial Ltda.
	RBLE	CLF 0010	Laboratório de Segurança do Produto. Manufatura de Brinquedos Estrela S.A.
Osasco			
	RBC	382	Holtermann Comercial e Técnica Ltda.
	RBC	284	Laboratório de Vazão e Volume e Massa Específica. Applitech Indústria e Comércio de Equipamentos Industriais Ltda.
	RBC	368	Equipe Equipamentos de Automação e Controle Ltda. Lateq Laboratório de Temperatura
	RBLE	CRL 0046	Alphageos Tecnologia Aplicada S.A.
	RBLE	CRL 0151	Conteste Engineering e Tecnologia Ltda.
	RBLE	CRL 0183	Jba Engineering e Consultoria Ltda.
	RBLE	CRL 0219	Proaqt Empreendimentos Tecnológicos Ltda.
	RBLE	CLF 0029	Laboratório de Controle da Qualidade Gases Especiais. White Martins Gases Industriais Ltda.
Piedade			
	RBC	26	Laboratório de Metrologia Ecil. Ecil Produtos e Sistemas de Medição e Controle Ltda.
	RBC	26	Laboratório de Metrologia Ecil. Ecil Produtos e Sistemas de Medição e Controle Ltda.
Piracicaba			
	RBC	157	Aferitec Comprovações Metrológicas e Comércio Ltda.
	RBC	157	Aferitec Comprovações Metrológicas e Comércio Ltda.
	RBC	157	Aferitec Comprovações Metrológicas e Comércio Ltda.
	RBC	157	Aferitec Comprovações Metrológicas e Comércio Ltda.
	RBC	157	Aferitec Comprovações Metrológicas e Comércio Ltda.
	RBC	121	Laboratório de Análises. Centro de Tecnologia Canavieira
	RBLE	CRL 0286	Agrosafety Monitoramento Agrícola Ltda.
	RBLE	CRL 0172	Bioagri Ambiental Ltda.
	RBLE	CLA 0002	Bioagri Laboratórios Ltda.
	RBLE	CRL 0208	Bioagri Laboratórios Ltda.
	RBLE	CLA 0018	Laboratório de Ecotoxicologia. Centro de Energia Nuclear na Agricultura (Cena)
	RBLE	CLF 0034	Laboratório de Análises. Centro de Tecnologia Canavieira
	RBLE	CRL 0191	Centro Tecnológico de Piracicaba. Delphi Automotive Systems do Brasil Ltda.
	RBLE	CRL 0193	Labmat Análises e Ensaios de Materiais S/C Ltda.
	RBLE	CRL 0194	Labmat Análises e Ensaios de Materiais S/C Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
Presidente Prudente			
	RBLE	CRL 0265	Laboratório de Controle Sanitário de Presidente Prudente (Rboc). Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Registro			
	RBLE	CRL 0282	Divisão de Controle Sanitário. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
Ribeirão Preto			
	RBLE	CRL 0106	Setor de Laboratório de Ribeirão Preto. Companhia de Tecnologia e Saneamento Ambiental (Cetesb)
Rio Claro			
	RBLE	CRL 0267	Laboratório São Lucas Ltda.
Santos			
	RBC	326	Laboratório de Calibração de Santos. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0279	Divisão de Controle Sanitário e Ambiental da Baixada Santista. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CRL 0203	Setor de Laboratório de Cubatão. Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CRL 0237	Laboratório de Ecotoxicologia Professor Caetano Bellilboni. Instituto Superior de Educação Santa Cecília
	RBLE	CRL 0230	Saybolt Concremat Inspeções Técnicas Ltda. - Santos
	RBLE	CRL 0049	Laboratório de Análises. Divisão de Bens de Consumo. SGS do Brasil Ltda.
São Carlos			
	RBC	342	Laboratório de Metrologia e Calibração. TAM Linhas Aéreas S/A
	RBC	342	Laboratório de Metrologia e Calibração. TAM Linhas Aéreas S/A
	RBLE	CRL 0135	Laboratório do Centro de Caracterização e Desenvolvimento de Materiais. Centro de Caract. e Desenv. de Materiais (CCDM) - Fundação de Apoio Inst. ao Desenv. Científico e Tecnológico UFSCar
	RBLE	CLF 0054	Laboratório de Aplicação e Desenvolvimento. Tecumseh do Brasil Ltda.
São José dos Campos			
	RBC	178	Instituto de Estudos Avançados. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBC	1	Instituto de Fomento e Coordenação Industrial. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBC	1	Instituto de Fomento e Coordenação Industrial. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBC	1	Instituto de Fomento e Coordenação Industrial. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBC	22	Laboratório de Integração e Testes (LIT). Instituto Nacional de Pesquisas Espaciais (INPE)

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	22	Laboratório de Integração e Testes (LIT). Instituto Nacional de Pesquisas Espaciais (INPE)
	RBC	22	Laboratório de Integração e Testes (LIT). Instituto Nacional de Pesquisas Espaciais (INPE)
	RBC	22	Laboratório de Integração e Testes (LIT). Instituto Nacional de Pesquisas Espaciais (INPE)
	RBC	22	Laboratório de Integração e Testes (LIT). Instituto Nacional de Pesquisas Espaciais (INPE)
	RBC	156	Laboratório de Metrologia. Metrologia 9000 Ltda.
	RBC	156	Laboratório de Metrologia. Metrologia 9000 Ltda.
	RBC	176	Laboratório de Metrologia Industrial. Iso-Metro Comercial Ltda.
	RBC	176	Laboratório de Metrologia Industrial. Iso-Metro Comercial Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	134	Laboratório Presertec. Presertec Serviços de Calibração Ltda.
	RBC	215	Metrolab Calibrações Ltda.
	RBC	215	Metrolab Calibrações Ltda.
	RBC	344	Precision Instrumentation e Comércio Ltda.
	RBLE	CRL 0104	Setor de Laboratório de Taubaté (Cilt). Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CRL 0250	Laboratório de Filtros do Ar do Instituto de Aeronáutica e Espaço. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBLE	CRL 0116	Laboratório Instrumental do Instituto de Aeronáutica e Espaço. Departamento de Ciência e Tecnologia Aeroespacial (DCTA)
	RBLE	CRL 0290	Laboratório de Emi/Emc/Antenas. Instituto Nacional de Pesquisas Espaciais (INPE)
	RBLE	CRL 0213	Laboratório da Divisão de Controle Sanitário. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CRL 0168	Laboratório da Divisão de Controle Sanitário - Vale do Paraíba. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp).
	RBLE	CRL 0092	Serviço Nacional de Aprendizagem Industrial (SENAI/Taubaté). Laboratório de Ensaios e Análises Materiais
São Paulo			
	RBC	56	Absi Indústria e Comércio Ltda.
	RBC	407	Almont do Brasil Importação, Comércio e Representação Ltda.
	RBC	274	Atlas Copco Brasil Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	307	Calilab Laboratório de Eletroacústica Total Safety Ltda.
	RBC	234	Carl Zeiss do Brasil Ltda.
	RBC	213	Ceime Comércio e Metrologia Ltda.
	RBC	213	Ceime Comércio e Metrologia Ltda.
	RBC	213	Ceime Comércio e Metrologia Ltda.
	RBC	162	Centro de Metrologia de Fluidos. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	185	Centro Tecnológico. Instituto de Pesos e Medidas do Estado de São Paulo
	RBC	185	Centro Tecnológico. Instituto de Pesos e Medidas do Estado de São Paulo
	RBC	403	Centro Tecnológico do Ambiente Construído. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	268	Confiantec Assistência Técnica em Equipamentos Industriais Ltda.
	RBC	378	Digimed. Digicrom Analítica Ltda. - Epp
	RBC	366	Facion Instrumentation Ltda.
	RBC	405	Heraeus Sensor Technology Ltda.
	RBC	292	Hexagon Metrology Sistemas de Medição Ltda.
	RBC	159	Importadora e Exportadora de Medidores Polimate Ltda.
	RBC	159	Importadora e Exportadora de Medidores Polimate Ltda.
	RBC	192	Instrumental Manutenção e Comércio de Instrumentos de Precisão Ltda.
	RBC	173	Labmess Comércio e Serviços Metrológicos Ltda.
	RBC	190	Labmetro M. Shimizu. M. Shimizu Elétrica e Pneumática Ltda.
	RBC	256	Laboratório Chrompack Instrumentos Científicos Ltda.
	RBC	256	Laboratório Chrompack Instrumentos Científicos Ltda.
	RBC	256	Laboratório Chrompack Instrumentos Científicos Ltda.
	RBC	281	Laboratório da Escala Produtos e Serviços de Calibração Ltda.
	RBC	281	Laboratório da Escala Produtos e Serviços de Calibração Ltda.
	RBC	75	Laboratório da Gerência de Tecnologia. Associação Brasileira de Cimento Portland - (ABCP)
	RBC	75	Laboratório da Gerência de Tecnologia. Associação Brasileira de Cimento Portland - (ABCP)
	RBC	75	Laboratório da Gerência de Tecnologia. Associação Brasileira de Cimento Portland - (ABCP)
	RBC	75	Laboratório da Gerência de Tecnologia. Associação Brasileira de Cimento Portland - (ABCP)
	RBC	73	Laboratório da Iope. Iope Instrumentos de Precisão Ltda.
	RBC	73	Laboratório da Iope. Iope Instrumentos de Precisão Ltda.
	RBC	369	Laboratório de Calibração. Asta Indústria e Comércio de Instrumentation e Controle Ltda.
	RBC	187	Laboratório de Calibração. Dinateste Indústria e Comércio Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	210	Laboratório de Calibração. Tridimensional Calibração e Assistência Técnica Ltda.
	RBC	116	Laboratório de Calibração. Volkswagen do Brasil Ltda.
	RBC	116	Laboratório de Calibração. Volkswagen do Brasil Ltda.
	RBC	116	Laboratório de Calibração. Volkswagen do Brasil Ltda.
	RBC	116	Laboratório de Calibração. Volkswagen do Brasil Ltda.
	RBC	402	Laboratório de Calibração de Balanças Gehaka. Indústria e Comércio Eletro-Eletronico Gehaka Ltda.
	RBC	305	Laboratório de Calibração Eletroacústica Lacel. B&K -Spectris do Brasil Instrumentos Eletrônicos Ltda.
	RBC	175	Laboratório de Calibração Instemaq. Instemaq Comercial Técnica Ltda.
	RBC	175	Laboratório de Calibração Instemaq. Instemaq Comercial Técnica Ltda.
	RBC	175	Laboratório de Calibração Instemaq. Instemaq Comercial Técnica Ltda.
	RBC	175	Laboratório de Calibração Instemaq. Instemaq Comercial Técnica Ltda.
	RBC	166	Laboratório de Calibração Microprecs.Euros Comércio de Instrumento de Precisão Ltda.
	RBC	166	Laboratório de Calibração Microprecs. Euros Comércio de Instrumento de Precisão Ltda.
	RBC	166	Laboratório de Calibração Microprecs. Euros Comércio de Instrumento de Precisão Ltda.
	RBC	166	Laboratório de Calibração Microprecs. Euros Comércio de Instrumento de Precisão Ltda.
	RBC	166	Laboratório de Calibração Microprecs. Euros Comércio de Instrumento de Precisão Ltda.
	RBC	271	Laboratório de Calibração Panambra Service. Panambra Técnica Importação e Exportação Ltda.
	RBC	158	Laboratório de Calibração SENAI-Suiçlab. Serviço Nacional de Aprendizagem Industrial - SENAI
	RBC	377	Laboratório de Equipamentos Elétricos e Ópticos. Centro de Integridade de Estruturas e Equipamentos. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	319	Laboratório de Força Raven. Raven Indústria e Comércio de Ferramentas Ltda.
	RBC	291	Laboratório de Massa. Padrão Tecnologia em Balanças e Comercial Ltda.
	RBC	318	Laboratório de Medição de Força. Tecmetro Tecnologia em Medições Ltda.
	RBC	114	Laboratório de Metrologia Calibratec. Comércio e Assistência Técnica de Instrumentos de Medição Ltda.
	RBC	114	Laboratório de Metrologia Calibratec. Comércio e Assistência Técnica de Instrumentos de Medição Ltda.
	RBC	114	Laboratório de Metrologia Calibratec. Comércio e Assistência Técnica de Instrumentos de Medição Ltda.
	RBC	114	Laboratório de Metrologia Calibratec. Comércio e Assistência Técnica de Instrumentos de Medição Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	114	Laboratório de Metrologia Calibratec. Comércio e Assistência Técnica de Instrumentos de Medição Ltda.
	RBC	88	Laboratório de Metrologia. Centro Tecnológico de Metrologia Comércio de Instrumentos e Serviços Ltda. (CTM)
	RBC	88	Laboratório de Metrologia. Centro Tecnológico de Metrologia Comércio de Instrumentos e Serviços Ltda. (CTM)
	RBC	88	Laboratório de Metrologia. Centro Tecnológico de Metrologia Comércio de Instrumentos e Serviços Ltda. (CTM)
	RBC	33	Laboratório de Metrologia. Instituto de Pesquisas e Estudos Industriais (Ipei)
	RBC	161	Laboratório de Metrologia. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer
	RBC	161	Laboratório de Metrologia. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer
	RBC	161	Laboratório de Metrologia. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer
	RBC	161	Laboratório de Metrologia. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer
	RBC	67	Laboratório de Metrologia. Naka Comércio de Instrumentation Industrial Ltda.
	RBC	67	Laboratório de Metrologia. Naka Comércio de Instrumentation Industrial Ltda.
	RBC	96	Laboratório de Metrologia. Sigtron Instrumentos e Serviços Ltda.
	RBC	96	Laboratório de Metrologia. Sigtron Instrumentos e Serviços Ltda.
	RBC	303	Laboratório de Metrologia Alpax. Alpax Comércio de Produtos para Laboratórios Ltda.
	RBC	224	Laboratório de Metrologia Contemp. Contemp Indústria Comércio e Serviços Ltda.
	RBC	224	Laboratório de Metrologia Contemp. Contemp Indústria Comércio e Serviços Ltda.
	RBC	299	Laboratório de Metrologia da Metracal. Metracal Serviços em Equipamentos Eletrônicos e Comercial Ltda.
	RBC	275	Laboratório de Metrologia Dimensional. Exata e Precisa Ltda.
	RBC	203	Laboratório de Metrologia Elétrica. Instituto de Pesquisas e Estudos Industriais (Ipei)
	RBC	47	Laboratório de Metrologia Elétrica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	47	Laboratório de Metrologia Elétrica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	47	Laboratório de Metrologia Elétrica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	311	Laboratório de Metrologia Laborglas. Laborglas Indústria e Comércio de Materiais para Laboratórios Ltda.
	RBC	3	Laboratório de Metrologia Mecânica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	3	Laboratório de Metrologia Mecânica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	3	Laboratório de Metrologia Mecânica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	3	Laboratório de Metrologia Mecânica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	3	Laboratório de Metrologia Mecânica. Centro de Metrologia Mecânica e Elétrica. Instituto de Pesquisas Tecnológicas (IPT)
	RBC	118	Laboratório de Metrologia Micronal S/A
	RBC	86	Laboratório de Metrologia. Tork Controle Tecnológico de Materiais Ltda.
	RBC	86	Laboratório de Metrologia. Tork Controle Tecnológico de Materiais Ltda.
	RBC	86	Laboratório de Metrologia. Tork Controle Tecnológico de Materiais Ltda.
	RBC	230	Laboratório de Metrologia Tridimensional. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBC	127	Laboratório de Metrologia. Visomes Comercial Metrológica Ltda.
	RBC	127	Laboratório de Metrologia. Visomes Comercial Metrológica Ltda.
	RBC	127	Laboratório de Metrologia. Visomes Comercial Metrológica Ltda.
	RBC	127	Laboratório de Metrologia. Visomes Comercial Metrológica Ltda.
	RBC	15	Laboratório de Metrologia. Willy Instrumentos de Medição e Controle Ltda.
	RBC	30	Laboratório de Metrologia Yokogawa. Yokogawa América do Sul Ltda.
	RBC	30	Laboratório de Metrologia Yokogawa. Yokogawa América do Sul Ltda.
	RBC	30	Laboratório de Metrologia Yokogawa. Yokogawa América do Sul Ltda.
	RBC	30	Laboratório de Metrologia Yokogawa. Yokogawa América do Sul Ltda.
	RBC	53	Laboratório de Padrões. Balitek Instrumentos e Serviços Ltda.
	RBC	53	Laboratório de Padrões. Balitek Instrumentos e Serviços Ltda.
	RBC	128	Laboratório de Termometria. Consistec Controles e Sistemas de Automação Ltda.
	RBC	139	Laboratório de Termometria. Salcas Indústria e Comércio Ltda.
	RBC	133	Laboratório Feinmes. Feinmess Tecnologia e Treinamento Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	149	Laboratório Mec-Q. Mec-Q Comércio e Serviços de Metrologia Industrial Ltda.
	RBC	91	Laboratório Metrológico. Kn Waagen Balanças Ltda. – EPP
	RBC	91	Laboratório Metrológico. Kn Waagen Balanças Ltda. – EPP
	RBC	91	Laboratório Metrológico. Kn Waagen Balanças Ltda. – EPP

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	385	Laboratório Metrotec. Metrotec Comércio e Assessoria Técnica Ltda.
	RBC	193	Laboratório Prymelab. Presys Instrumentos e Sistemas Ltda.
	RBC	193	Laboratório Prymelab. Presys Instrumentos e Sistemas Ltda.
	RBC	193	Laboratório Prymelab. Presys Instrumentos e Sistemas Ltda.
	RBC	389	Laboratório Qs Machines. Qs Machines Ltda.
	RBC	250	Laboratório Socintec. Socintec Instrumentos de Medição Ltda.
	RBC	235	Laboratório Vwc. Vwc Equipamentos de Instrumentation e Comércio Ltda.
	RBC	298	Laboratórios de Metrologia Labmetro Ltda.
	RBC	387	Laboratórios SENAI Mario Amato. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBC	182	Laboratório de Metrologia Volumétrica (Lamevol). Fgg Equipamentos e Vidraria de Laboratório Ltda.
	RBC	272	Masterlabor Instrumentos e Serviços Ltda.
	RBC	272	Masterlabor Instrumentos e Serviços Ltda.
	RBC	297	Minipa Indústria e Comércio Ltda.
	RBC	297	Minipa Indústria e Comércio Ltda.
	RBC	236	Mts Sistemas do Brasil Ltda.
	RBC	236	Mts Sistemas do Brasil Ltda.
	RBC	365	Norberto Mischi Soluções Técnicas Ltda. Epp
	RBC	226	Oficina Técnica de Balanças Navarro Ltda.
	RBC	350	Pesotécnica Balanças Ltda.
	RBC	283	Qualy-Med Comércio e Serviços de Instrumentos de Precisão, Calib., Manut. Ltda.
	RBC	14	Serviço Técnico de Metrologia Elétrica. Instituto de Eletrotécnica e Energia da Universidade de São Paulo (IEE/USP)
	RBC	14	Serviço Técnico de Metrologia Elétrica. Instituto de Eletrotécnica e Energia da Universidade de São Paulo (IEE/USP)
	RBC	165	Setting Calibration Laboratories. Setting Calibrações e Ensaios Ltda EPP
	RBC	165	Setting Calibration Laboratories. Setting Calibrações e Ensaios Ltda EPP
	RBC	165	Setting Calibration Laboratories. Setting Calibrações e Ensaios Ltda EPP
	RBC	165	Setting Calibration Laboratories. Setting Calibrações e Ensaios Ltda EPP
	RBC	165	Setting Calibration Laboratories. Setting Calibrações e Ensaios Ltda EPP
	RBC	400	Skiltech Instrumentos de Precisão Ltda.
	RBC	400	Skiltech Instrumentos de Precisão Ltda.
	RBC	278	Sumatec Comércio de Balanças Ltda.
	RBC	209	Tec Labor Laboratório de Metrologia S.M. Ind. e Com. de Artigos para Labs. de Metrologia
	RBC	209	Tec Labor Laboratório de Metrologia S.M. Ind. e Com. de Artigos para Labs. de Metrologia

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBC	409	Tex Equipamentos Eletrônicos Indústria e Comércio Ltda.
	RBC	409	Tex Equipamentos Eletrônicos Indústria e Comércio Ltda.
	RBC	222	Toledo do Brasil Indústria de Balanças Ltda.
	RBC	397	Votre Comércio e Assistência Técnica de Balanças Ltda.
	RBLE	CRL 0229	Absi Indústria e Comércio Ltda. Absi Indústria e Comércio Ltda. (Laboratório de Pressão)
	RBLE	CRL 0280	Aços Roman Ltda. Laboratório de Materiais
	RBLE	CLF 0022	Laboratório Alphagaz. Air Liquide Brasil S.A.
	RBLE	CRL 0241	Analytical Solutions S. A.
	RBLE	CRL 0212	Analytical Technology Serviços Analíticos e Ambientais Ltda.
	RBLE	CLF 0024	Laboratório da Gerência de Tecnologia. Associação Brasileira de Cimento Portland (ABCP)
	RBLE	CLF 0051	Laboratório de Ensaios Têxteis. Aunde Brasil S.A.
	RBLE	CRL 0255	Bachema Serviços Analíticos Ambientais Ltda.
	RBLE	CRL 0287	Br Cert Laboratórios Ltda.
	RBLE	CLF 0014	Laboratório de Avaliação de Produto. Bridgestone/Firestone do Brasil Indústria e Comércio Ltda.
	RBLE	CRL 0233	Centro Brasileiro de Tecnologia e Segurança de Produtos Ltda. (Cebratec)
	RBLE	CRL 0247	Ceimic Análises Ambientais Ltda.
	RBLE	CRL 0093	Departamento de Análises Ambientais. Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CRL 0020	Laboratório de Veículos. Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CLF 0043	Laboratório de Controle da Qualidade. Companhia de Gás de São Paulo (Comgas)
	RBLE	CRL 0217	Departamento de Controle da Qualidade dos Produtos Água e Esgotos (Toq). Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CRL 0305	Msec Controle Sanitário Sul. Companhia de Saneamento Básico do Estado de São Paulo (Sabesp)
	RBLE	CLF 0065	Concepta Dg Compliance Ltda.
	RBLE	CRL 0037	Lab.Téc. Mat. Prod. Ind. da Construção. Concremat Engineering e Tecnologia S.A.
	RBLE	CRL 0188	Concreteste Tecnologia em Materiais Ltda.
	RBLE	CRL 0264	Ctq Análises Chemistrys e Ambientais S/S Ltda.
	RBLE	CRL 0291	D & J Laboratório de Ensaio Ltda.
	RBLE	CRL 0266	Digilab Apoio Tecnológico e Comércio de Instrumentation Analítica Ltda.
	RBLE	CRL 0171	Ecolabor Comercial Consultoria e Análises Ltda.
	RBLE	CRL 0027	Laboratório de Materiais para Construção Civil. Engineering e Pesquisas Tecnológicas S.A. (EPT)
	RBLE	CRL 0252	Laboratório da Escala Produtos e Serviços de Calibração Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Nº acreditação	Name of lab
	RBLE	CRL 0146	Divisão de Ensaios e Calibração. Laboratório de Engineering Biomédica. Escola Politécnica, Universidade de São Paulo
	RBLE	CRL 0222	Esportare do Brasil Assessoria e Comércio Ltda. Corplab Brasil
	RBLE	CRL 0160	Lab. de Controle de Medicamentos, Cosméticos, Domissanitários, Produtos Afins e as Respectivas Matérias-Primas. Faculdade de Ciências Farmacêuticas. Universidade de São Paulo (Confar/FCF/USP)
	RBLE	CLF 0061	Ig Lab. Igaraí S/A Indústria e Comércio de Embalagens
	RBLE	CLF 0037	Laboratório Corporativo Arteb. Indústria Arteb S/A
	RBLE	CLA 0022	Instituto de Educação para Pesquisa, Desenvolvimento e Inovação Tecnológica Royal (Unitox-Royal)
	RBLE	CRL 0081	Seção Técnica de Altas Correntes. Instituto de Eletrotécnica e Energia. Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0011	Seção Técnica de Equipamentos Elétricos à Prova de Explosão. Instituto de Eletrotécnica e Energia. Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0039	Seção Técnica de Fotometria. Instituto de Eletrotécnica e Energia. Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0084	Seção Técnica de Máquinas Elétricas. Instituto de Eletrotécnica e Energia. Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0062	Serviço Técnico de Aplicações Médico-Hospitalares. Instituto de Eletrotécnica e Energia da Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0184	Serviço Técnico de Qualidade de Energia. Instituto de Eletrotécnica e Energia. Universidade de São Paulo (IEE/USP)
	RBLE	CRL 0242	Laboratório de Caracterização Chemistry. Instituto de Pesquisas Energéticas e Nucleares (IPEN)
	RBLE	CRL 0249	Centro de Metrologia em Chemistry. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0161	Centro Tecnológico da Indústria e da Moda. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0111	Centro Tecnológico do Ambiente Construído. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0045	Laboratório de Equipamentos Elétricos e Ópticos do Centro de Integridade de Estruturas e Equipamentos. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0002	Laboratório de Equipamentos Mecânicos e Estruturas do Centro de Integridade de Estruturas e Equipamentos. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0269	Laboratório de Produtos Derivados da Madeira do Centro de Tecnologia de Recursos Florestais. Instituto de Pesquisas Tecnológicas (IPT)
	RBLE	CRL 0215	Laboratório São Paulo. Instituto Latino-Americano de Avaliação Tecnológica Ltda.
	RBLE	CRL 0246	Divisão de Motores e Veículos. Instituto Mauá de Tecnologia
	RBLE	CRL 0176	Laboratório da Iope. Iope Instrumentos de Precisão Ltda.
	RBLE	CRL 0201	Laboratório Temporário. Jba Engineering e Consultoria Ltda.
	RBLE	CRL 0033	Laboratório de Ensaios em Materiais. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBLE	CRL 0003	Laboratório de Tecnologia de Materiais e Produtos. Centro Tecnológico de Controle Qualidade Ltda. L. A. Falcão Bauer
	RBLE	CRL 0226	Labcris Análises, Meio Ambiente e Serviços Ltda.
	RBLE	CRL 0061	Laboratório de Ensaio de Material de Intendência. 21º Depósito de Suprimento. Ministério do Exército
	RBLE	CRL 0058	Lenc Laboratório de Engineering e Consultoria Ltda.
	RBLE	CRL 0270	Maxilabor Diagnósticos Ltda.
	RBLE	CRL 0253	Multiteste Telecom Serviços de Telecomunicações Ltda.
	RBLE	CLF 0038	Nestlé Brasil Ltda.
	RBLE	CRL 0199	Normatec Ensaios e Certificações Ltda.
	RBLE	CRL 0199	Normatec Ensaios e Certificações Ltda.
	RBLE	CRL 0167	Nova Ambi Serviços Analíticos Ltda.
	RBLE	CLF 0015	Laboratório de Ensaios Indoor. Pirelli Pneus S.A.
	RBLE	CRL 0149	Laboratório de Avaliação de Agentes Químicos no Ar. Projecontrol Consultoria Empresarial e Serviços Ltda.
	RBLE	CRL 0220	Sender Assistência Técnica Ltda.
	RBLE	CRL 0127	Laboratório de Ensaios Em Óleos Lubrificantes e Combustíveis. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0132	Laboratório de Ensaios Metalúrgicos (Met). Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0148	Laboratório de Ensaios Tecnológico (Letec). Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0131	Laboratório de Ensaios Tecnológicos em Vestuário. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0077	Laboratórios SENAI Mario Amato. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CRL 0087	Sfdk Laboratório de Análise de Produtos Ltda.
	RBLE	CRL 0163	Laboratório de Ensaio de Produtos de Gás. Sical do Brasil Ltda.
	RBLE	CLA 0017	Departamento de Estudos Químicos e Ambientais. Syngenta Proteção de Cultivos Ltda.
	RBLE	CLA 0007	Tecam Tecnologia Ambiental Ltda.
	RBLE	CLA 0012	Tecam Tecnologia Ambiental São Roque Ltda.
	RBLE	CRL 0162	Laboratório de Ensaios de Construção Civil. Tecnologia de Sistemas em Engineering Ltda. (Tesis)
	RBLE	CRL 0056	Laboratório de Metrologia. Tork Controle Tecnológico de Materiais Ltda.
	RBLE	CRL 0142	Laboratório de Ensaios. Divisão Uciee. Tüv Rheinland do Brasil Ltda.
	RBLE	CRL 0289	Laboratório de Metrologia. Visomes Comercial Metrológica Ltda.
	RBLE	CLF 0027	Laboratório de Emissões Veiculares. Volkswagen do Brasil
	RBLE	CRL 0155	Laboratório Vwc. Vwc Equipamentos de Instrumentation e Comércio Ltda.

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Detailed Chart 8.6 (continued)
Inmetro-certified calibration and testing labs by microregion and type (1) – São Paulo State, 2008

Microregion	Type (1)	Inmetro-certified calibration and testing labs	
		Accreditation no.	Name of lab
	RBLE	CRL 0123	Laboratório de Ensaios Acústicos (Leac). Waytech Engineering e Comércio Ltda.
Sorocaba			
	RBC	359	Laboratório de Calibração. Calibracom Comércio e Serviços Ltda.
	RBC	87	Laboratório de Metrologia Laroy S. Starrett (Laroylab). Starrett Indústria e Comércio Ltda.
	RBC	84	Laboratório de Metrologia Pressão. Wika do Brasil Indústria e Comércio Ltda.
	RBC	361	Laboratorio de Temperatura Tami. Tami Comércio e Manutenção Industrial Ltda.
	RBC	332	Laboratório de Vazão Emerson. Emerson Process Management Ltda.
	RBC	304	Rebrac Instrumentos de Medição Ltda.
	RBLE	CRL 0234	Setor de Laboratório de Sorocaba (Cils). Companhia de Tecnologia de Saneamento Ambiental (Cetesb)
	RBLE	CRL 0175	Laboratórios SENAI Mario Amato. Serviço Nacional de Aprendizagem Industrial (SENAI)
	RBLE	CLF 0067	Laboratório de Ensaios e Análises de Materiais (Labmet). Zf do Brasil Ltda.
Tatuí			
	RBC	171	Gero Comércio e Serviços Ltda.
	RBLE	CLF 0045	Laboratório de Emissões do Campo de Provas de Tatuí. Ford Motor Company Brasil Ltda.

Source: Inmetro.

(1) RBC = Rede Brasileira de Calibração (Brazilian Calibration Network).
RBLE = Rede Brasileira de Laboratórios de Ensaios (Brazilian Test Lab Network).

Detailed Chart 8.7
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
São Paulo			
	ABSI Indústria e Comércio Ltda.		
	Alpax Comércio de Produtos para Laboratórios Ltda.		
	Analítica Análises Físico-Chemistrys, Microbiológicas e Comercio Ltda.		
	Applitech Importação, Comércio e Representantes Ltda.		
	Atlas Copco Brasil Ltda.		
	Balanças Apollo Comércio e Manutenção		
	Balitek Instrumentos e Serviços Ltda.		
	Unidade de Farmacocinética. Associação Fundo de Pesquisa a Psicofarmacologia (Biocrom)		
	Biomédic Diagnósticos, Análise Clínicas e Serviços em Microbiology Ltda.		
	BCQ Consultoria e Qualidade Ltda.		
	Centro Paulista de Pesquisa e Avaliação Dermatocosmética Ltda.		
	Centro Tecnológico de Metrologia, Comércio de Instrumentos e Serviços Ltda. (CTM)		
	Cerelab Laboratório Químico		
	Confiantec Assistencia Técnica em Equipamentos Industriais Ltda.		
	Consistec Controles e Sistemas de Automação Ltda.		
	Contemp Indústria Comércio e Serviços Ltda.		
	Controlbio Assessoria Técnica Microbiológica		
	Daimlerchrysler do Brasil Ltda.		
	Dinateste Indústria e Comércio Ltda.		
	Ecolabor Comercial Consultoria e Análises Ltda.		
	Edal Metrologia Tridimensional Ltda.		
	Escala Produtos e Serviços de Calibração Ltda.		
	Universidade Federal de São Paulo	São Paulo Infectious & Parasitic Disease Institute (Idipa)	

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Esportare do Brasil Assessoria em Comércio Exterior Ltda (CorpLab)		
	Exata e Precisa Ltda.		
	Fábrica de Manômetros Record S/A		
	Feinmess Tecnologia e Treinamento Ltda.		
	FGG Equipamentos e Vidraria de Laboratório Ltda.		
	Food Intelligence Consultoria Técnica em Alimentos S/C Ltda.		
	Fundação Jorge Duprat Figueiredo de Segurança e Medicine do Trabalho (Fundacentro)		
	Hermex Indústria e Comércio de Artigos de Vidros para Laboratórios Ltda.		
	Hexagon Metrology Sistemas de Medição Ltda.		
	IFM Serviços Tecnológicos Ltda.		
	Importadora e Exportadora de Medidores Polimate Ltda.		
	Instemaq Comercial Técnica Ltda.		
	Instituto Adolfo Lutz		
	Instituto Biológico de São Paulo		
	Instituto de BioEngineering da Pele Evic Brasil S/C Ltda./EVIC		
	Instituto de Pesquisas e Estudos Industriais Centro Universitário da FEI		
	Instituto de Pesquisas Tecnológicas de São Paulo (IPT)		
	Instrumental Manutenção e Comércio de Instrumentos de Precisão Ltda.		
	Iope Instrumentos de Precisão Ltda.		
	Instituto de Pesquisas Nucleares - IPEN	Biotechnology Center (CB)	
			Biomaterials Lab
			Structural Ceramics Lab
		Materials Science & Technology Center (CCTM)	Corrosion & Surface Treatment Lab
			Inputs & Components Lab
			Magnetic Materials Lab
			Glass & Ceramic Composites Lab

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
		Chemistry & Environment Center (CQMA)	
		Radiation Technology Center (CTR)	
	Instituto de Pesquisas Tecnológicas (IPT)	Structural & Equipment Integrity Center (CINTEQ)	
			Electrical Equipment Lab (LEO)
			Packaging Lab (LEA)
			Corrosion & Protection Lab (LCP)
		Centro de Mechanical & Electrical Metrology Center (CME)	
			Mechanical Metrology Lab (LMM)
			Electrical Metrology Lab (LME)
		Fluid Metrology Center (CMF)	
		Chemical Metrology Lab (CMQ)	
			Inorganic Chemical Analysis Lab (LAQI)
			Organic Chemical Analysis Lab (LAQQ)
		Process & Product Technology Center (CTPP)	
			Industrial Biotechnology Lab (LBI)
			Metallurgy & Ceramic Materials Lab (LMMC)
			Chemical Process & Particle Technology Lab (LPP
			Industrial Biotechnology Lab (LBI)
			Metallurgy & Ceramic Materials Lab (LMMC
			Chemical Process & Particle Technology Lab (LPP)
			Metrological Benchmarking Lab (LRM)

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Isométrica Assistência Técnica de Balanças Ltda. - ME		
	KN Waagen Balanças Ltda - EPP		
	Centro Tecnológico de Controle de Qualidade Ltda. L.A. Falcão Bauer		
	Centro Tecnológico de Controle da Qualidade Ltda. L.A. Falcão Bauer		
	Labmess Comércio e Serviços Metrológicos Ltda.		
	Laboratórios e Consultoria Técnica LABOR 3		
	Laboratórios de Metrologia Labmetro Ltda.		
	Laboratórios Ecolyzer Ltda.		
	Laborglas Indústria e Comércio de Materiais para Laboratórios Ltda.		
	M. Shimizu Elétrica e Pneumática Ltda.		
	Maccarroni Comércio e Representação Ltda.		
	Masterlabor Instrumentos e Serviços Ltda.		
	Mecânica e Usinagem Soriani Ltda.		
	MEC-Q Comércio e Serviços de Metrologia Industrial Ltda.		
	Medlab Produtos Diagnósticos Ltda.		
	Metra Aferição Calibração Comércio de Instrumentos de Medição Ltda.		
	Metracal Serviços em Equipamentos Eletrônicos e Comercial Ltda.		
	Metropolitana Eletricidade de São Paulo S/A - Eletropaulo		
	Metrotec Comércio e Assessoria Técnica Ltda.		
	Microambiental Laboratório Comércio e Serviços em Água Ltda.		
	Micronal S/A		
	Microprecs. Euros Comércio de Instrumentos de Precisão Ltda.		
	Minipa Indústria e Comércio Ltda.		
	Mitutoyo Sul Americana Ltda.		
	Mts Sistemas do Brasil Ltda.		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Instituição	Test labs & R&D labs	
		Research unit	Lab
	Naka Comércio de Instrumentation Industrial Ltda.		
	Norberto Mischi Soluções Técnicas Ltda.		
	Laboratório de Ensaios em Ambiental. Nova Ambi Serviços Analíticos Ltda.		
	Nova Analítica Importação e Exportação Ltda.		
	Oficina Técnica de Balanças Navarro Ltda.		
	Oswaldo Cruz Labservice S/C Ltda.		
	P&D Consultoria Chemistry S/C Ltda.		
	Padrão Tecnologia em Balanças e Comercial Ltda.		
	Panambra Técnica Importação e Exportação Ltda.		
	Panantec Assistência Técnica de Máquinas Industriais e Comércio de Peças Ltda.		
	Pesotécnica Balanças Ltda.		
	Poliedro Comércio Assistência Técnica e Aparelhos de Medição Ltda.		
	Presys Instrumentos e Sistemas Ltda.		
	Qualy-Med Comércio e Serviços de Instrumentos de Precisão, Calibração, Manutenção Ltda.		
	Raven Indústria e Comércio de Ferramentas Ltda.		
	Rizza Eletroeletrônica Ltda.		
	S. M. Indústria e Comércio de Artigos para Laboratórios Ltda.		
	Salcas - Indústria e Comércio Ltda.		
	Sartorius do Brasil Ltda.		
	Serviço Nacional de Aprendizagem Industrial (SENAI)		Food Physicochemical Test Lab Glassworks Calibration Lab Ceramics Test Lab Chemicals Test Lab Ceramic Coatings Test Lab

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
			House Paint Test Lab
			Microbiological, Chemical & Environmental Test Lab
			Polymer Physical & Chemical Test Lab
			Three-Dimensional Metrology Lab
			Textile Test Lab
			Apparel Technological Test Lab o
			Technological Test Lab
			Lubricant & Fuel Oil Test Lab
			Organismo de Inspeção Credenciado CDE. José V. Azevedo
			Paper & Book Test Lab
			Laboratório de Calibração Suiçlab
	Setting Calibrações e Ensaios Ltda. EPP		
	SFDK Laboratório de Análises de Produtos Ltda.		
	SIA Serviços de Instrumentation e Automação Ltda.		
	SIA Serviços de Instrumentation e Automação Ltda.		
	SGS do Brasil Ltda		
	Sigtron Instrumentos e Serviços Ltda.		
	Sincrontec Com. e Serviços de Instalações Industriais Ltda.		
	Socintec Instrumentos de Medição Ltda.		
	Solotest Aparelhos para Mecânica do Solo Ltda.		
	Sumatec Comércio de Balanças Ltda.		
	Tecam Tecnologia Ambiental Ltda.		
	Tecmetro Tecnologia em Medições Ltda.		
	Toledo do Brasil Indústria de Balanças Ltda.		
	Tork Controle Tecnológico de Materiais Ltda.		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Tridimensional Calibração e Assistência Técnica Ltda.		
	Universidade de São Paulo (USP)	Chemistry Dept.	
		Polytechnical School, Mining Engineering	
			Technological Characterization Lab (LCT)
			Industrial Residue & Ore Treatment Lab (LTM)
		Polytechnical School, Electrical Engineering	
			Instituto de Eletrotécnica e Energia (IEE), Electromedical Equipment Test Lab
			Biomedical Engineering Lab (LEB), Testing & Calibration Division
		Polytechnical School, Chemical Engineering	
			Electrochemistry & Corrosion Lab (LEC)
		School of Pharmaceutical Sciences	
			Food Analysis Lab (LAA)
			Medical Drugs, Cosmetics, Household Cleaning Products Control Lab (Confar
			Herbal Medicine Lab (Fitopar)
		Institute of Biomedical Sciences (ICB 2)	
			Environmental Microbiology Lab
	Visomes Comercial Metrológica Ltda.		
	Volkswagen do Brasil Ltda.		
	Votre Comércio e Assistência Técnica Ltda. - ME		
	VWC Equipamentos ee Instrumentation e Comércio Ltda.		
	Willy Instrumentos de Medição e Controle Ltda.		
	Yokogawa América do Sul Ltda.		
Campinas			
	ALLERGISA Pesquisa Dermato-Cosmética Ltda.		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Ceime Calibração e Comércio de Instrumentos Ltda.		
	Centro de Qualidade Analítica (CQA)		
	Embrapa Informática Agropecuária		
		Structural Bioinformatics Group (Labbe)	
			Applied Bioinformatics Lab (LBA)
			Geotechnology Lab (Labgeo)
			Computing Intelligence Lab (Labic)
			Agroenvironmental Modelling Lab
			New Technology Lab (Labtec)
			Electronic Information Organization & Treatment Lab
			Free Software Lab (Labsol)
			Network, Connectivity & High Performance Lab
	Embrapa Meio Ambiente		Agrochemical Dynamics Lab (LDA)
			Aquatic Ecosystems Lab (LEA)
			Ecotoxicology & Biosafety Lab (LEB)
			Entomology Lab (LEN)
			Chemical Ecology Lab (LEQ)
			Environmental Management Lab (LGA)
			Geotechnology & Quantitative Methods Lab (LGT)
			Environmental Microbiology Lab (LMA)
			Biological Product Development Lab (LPB)
			Natural Products Lab (LPN)
			Soil Quality Lab (LQS)
			Residues & Contaminants Lab (LRC)
			Soil & Water Chemistry Lab (LSA)
			Application Technology Lab (LTA)
			"Costa Lima" Quarantine Lab
	Embrapa Monitoramento por Satélite		Farmland Biodiversity Lab
			Geomatics Applied to Territorial Governance Lab
			Satellite Data Reception Lab
	Francisco Furlan Neto Monte-Mor – ME		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Fundação Centro de Pesquisa e Desenvolvimento em Telecomunicações (CPqD) / Laboratório de Calibração		
	Instituto Agronômico de Campinas (IAC)		
			Ecophysiology & Biophysics Benchmarking Lab
			Plant Health Benchmarking Lab
			Grain & Fiber Benchmarking Lab
			Plant Genetics Agribusiness Technological Research & Analysis Lab
			Soil & Agroenvironmental Resource Lab
	Instituto de Pesquisas Eldorado		
	Instuto Tecnológico de Alimentos (Ital)	Chocotec Cereal Center	
		Microbiology Center	
		Chemistry Center	
		Fruthotec Center	
		GEPC Center	
		LAFISE Center	
		Tecnolat Center	
		Packaging Technology Center (Cetea)	
		Meat Technology Center (CTA)	
	KS Pistões Ltda.		
	Laboratório Eurofins		
	Laboratório Nacional de Luz Síncrotron		
	Laboratório T & E Analítica Comércio e Análises Chemistrys Ltda.		
	LAL Clínica Pesquisa e Desenvolvimento Ltda.		
	LG Comércio e Conserto e Instrumentos de Medição Ltda.		
	Metroval Controle de Fluidos Ltda.		
	Micropac Indústria e Comércio de Instrumentos de Medição Ltda.		
	Perception - Pesquisa em Análise Sensorial Ltda.		
	Planitox Planejamento, Assessoria e Informação em Toxicologia		
	Qualibras Eletrônica Ltda.		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Laboratório de Microbiology. TASQA Serviços Analíticos Ltda.		
	Testo do Brasil Instrumentos de Medição Ltda.		
	Faculdade de Engineering de Alimentos.	Food Technology Dept.	
	(vinculado)	Multidisciplinaryy Center for Chemical, Biological & Agricultural Research (CPQBA)	
	Coordenadoria de Defesa Agropecuária (CDA)		
Franca			
	Instituto de Pesquisas Tecnológicas (IPT)	Fashion Industry Technology Center (Cetim)	Leather & Footwear Lab (LCC)
Guarulhos			
	Instituto de Pesquisas Tecnológicas (IPT)	Mechanical & Electrical Metrology Center (CME)	Mechanical Metrology Lab (LMM)
	Linktron Serviços de Instrumentation Ltda.		
	Sertin Comércio e Serviços Técnicos de Instrumentation Ltda.		
	Conaut Controles Automáticos Ltda.		
Jundiaí			
	Hexis Científica S.A.		
	Instituto Agronômico de Campinas (IAC)		Engineering & Automation Benchmarking Lab
	Scientia Laboratórios Ltda.		
Limeira			
	Instituto Agronômico de Campinas (IAC)		Citrus Benchmarking Lab
	Labortec Metrologia Ltda		
Lins			
	Fundação Paulista Tecnológica de Educação		Chemical Analysis & Industrial Control Lab (Laci)
Mogi das Cruzes			
	Centro Tecnológico de Análise de Alimentos S/C Ltda. (Cetal)		
	GDD Montengel Engineering Comércio e Instrumentation Ltda.		
	Nalco Brasil Ltda.		

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
Osasco			
	Holtermann Comercial e Técnica Ltda.		
	Medcin Instituto da Pele S/C Ltda.		
	Regmed Indústria Técnica de Precisão Ltda.		
	Serviço Nacional de Aprendizagem Industrial (SENAI)		
			Metallurgical Test Lab
Piracicaba			
	Aferitec		
	Bioagri Laboratórios Ltda.		
	Escola Superior de Agricultura Luiz de Queirós (ESALQ/USP)	Center for Nuclear Energy in Agriculture (Cena)	
	Labmat Análises e Ensaios de Materiais S/C Ltda.		
	MS Tecnopon Equipamentos Especiais Ltda.		
Ribeirão Preto			
	Universidade de São Paulo (USP)	Disymmetry & Radiation Protection Center (Cedra)	Resonance Lab; Biomagnetism Lab
		School of Pharmacy	Equivalence & Biodiagnosis Lab
		School of Medicine	Ribeirão Preto Cell Therapy Lab (CTCP)
		School of Medicine	Optics & Photonics Research Center (Cepof)
		Photobiology & Photomedicine Group	Photobiology & Photomedicine Group
			Magnetic Resonance & Materials Lab (Ressomat)
			Lithium & Carbon Nanotube Materials Lab
			Clean Technology Development Lab (Ladetel)
Santos			
	Control Union Ltda		
	Laboratório GMO. Superinspect Supervisão Vistoria Inspeções Ltda.		
	SGS do Brasil Ltda.		
	Superinspect Supervisão Vistoria Inspeções Ltda.		
São Carlos			

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
	Embrapa Instrumentation Agropecuária		
			Natural Products Analysis Lab
			Electronics & Development Lab
			Spectroscopy Lab
			Spectroscopy Lab
			Imaging & Modelling Lab
			Lab Equipment Maintenance Lab
			Precision Mechanics Lab
			Microscopy Lab (Optics)
			Scanning Probe Microscopy Lab
			Scanning Probe Microscopy Lab
			Sample Preparation Lab
			Soil Preparation Lab
			Magnetic Resonance Lab
			Nuclear Techniques Lab
	Embrapa Pecuária Sudeste		Animal Biotechnology Lab
			Animal Nutrition Lab
			Analytical Chemistry Lab
			Animal Health lab
			Seed Lab
			Soil Lab
			Chemical Waste Treatment Lab
	Embrapa Instrumentation Agropecuária		General Instrumentation Lab
	Embrapa Pecuária Sudeste		Animal Reproduction Lab
	Universidade Federal de São Carlos	Materials Characterisation & Development Center (CCDM). UFSCar S&T Foundation	
São José dos Campos			
	Departamento de Ciência e Tecnologia Aeroespacial (DCTA)	Special Flight Test Group	
		Aeronautics & Space Institute(IAE)	
			Central Calibration Lab (LCC)
		Institute of Advanced Studies (IEA)	
			Central Calibration Lab (LCC)
		Industrial Development & Coordination Institute (IFI)	
		Instituto Tecnológico de Aeronáutica (ITA)	

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Detailed Chart 8.7 (continued)
Test labs and R&D labs by microregion and institution – São Paulo State, 2008

Microregion	Institution	Test labs & R&D labs	
		Research unit	Lab
Sorocaba	Instituto Nacional de Pesquisas Espaciais (INPE)		Integration & Test Lab (LIT)
	Laboratório Isometro Metrologia Industrial		
	Hidrolabor Laboratório de Controle de Qualidade		

Source: Inmetro; Embrapa; SENAI