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# High-Tech Clusters in North Carolina

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## Supplementary Data



North Carolina Board of Science and Technology

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*This report prepared for the*

North Carolina Board of Science and Technology

*by*

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## Summary data, general benchmark clusters, North Carolina

Clusters	Employment							Establishments		Payroll	
	1998	Per estab- lishment	% private sector		Annual % Change		Location Quotien Change		1998 (millions)	Average wage	
			1998	'89-'98	1998	'89-'98	1998	'89-'98			
Metalworking and industrial machinery	144,152	48.7	3.9	1.8	0.77	0.02	2,962	657	4,657.8	32,312	
Packaged food products	54,583	132.2	1.5	1.0	0.92	-0.04	413	-8	1,377.3	25,234	
Construction materials	118,390	29.1	3.2	2.2	1.00	0.04	4,073	866	3,787.3	31,990	
Printing and publishing	279,849	46.1	7.6	4.9	0.87	0.09	6,066	2,928	9,968.5	35,621	
Information technology and instrument	105,796	33.0	2.9	4.4	0.74	0.10	3,205	2,121	5,012.5	47,378	
Chemicals and plastics	104,367	33.5	2.8	3.9	1.04	0.07	3,112	1,207	3,764.5	36,070	
Apparel	207,698	121.5	5.6	-3.3	4.46	-0.88	1,710	-189	5,204.2	25,057	
Motor vehicle manufacturing	96,137	97.5	2.6	1.7	0.92	-0.04	986	188	3,129.4	32,551	
Fabricated textiles	128,893	97.5	3.5	-3.8	2.70	-0.94	1,322	-266	3,033.9	23,538	
Stone and clay products	13,838	128.1	0.4	5.8	1.26	0.42	108	30	555.7	40,161	
Wood products	77,549	44.5	2.1	0.0	2.15	-0.27	1,744	108	2,050.8	26,445	
Primary nonferrous metals	11,111	16.7	0.3	3.3	0.53	0.04	664	171	376.1	33,851	
Leather goods	1,871	44.5	0.1	-4.8	0.65	-0.14	42	1	42.7	22,801	
Tobacco products	16,151	0.0	0.4	-3.8	10.84	-3.53	30	1	761.5	47,151	
Canned and bottled beverages	7,496	58.1	0.2	4.9	1.03	0.32	129	-8	343.1	45,774	
Food oil mills	664	47.4	0.0	4.0	0.57	0.10	14	3	22.1	33,268	
Aerospace	2,965	105.9	0.1	-0.6	0.10	0.03	28	9	143.2	48,311	
Petroleum products	726	26.9	0.0	-0.4	0.14	0.00	27	3	27.7	38,238	
Jewelry	138	8.1	0.0	-9.6	0.06	-0.31	17	-7	4.7	33,782	
Boat building	7,210	49.0	0.2	-3.3	1.00	-0.35	147	12	261.9	36,327	
Aluminum	4,025	98.2	0.1	-3.0	0.57	-0.16	41	13	170.2	42,287	
Hospitals, labs, specialized medical se	226,117	39.4	6.1	6.8	0.94	0.11	5,732	3,261	7,836.5	34,657	
Platemaking and typesetting	1,910	20.8	0.1	-3.4	0.59	-0.21	92	-22	75.3	39,436	
Securities and insurance	39,194	8.0	1.1	3.7	0.65	0.03	4,869	1,725	1,288.6	32,877	
Banking and advertising	95,259	16.5	2.6	5.3	0.79	0.19	5,774	3,179	3,903.5	40,978	
Legal services	19,486	6.0	0.5	4.8	0.57	0.10	3,222	770	708.1	36,336	
Transportation, Shipping & Logistics	118,989	20.9	3.2	2.6	1.06	-0.11	5,687	2,058	3,916.9	32,918	
Pharmaceuticals	17,783	362.9	0.5	3.0	1.82	-0.03	49	13	863.2	48,538	
<b>Total Private Sector Employment</b>	<b>3,693,244</b>	<b>18.6</b>		<b>2.8</b>			<b>198,715</b>	<b>31,273</b>	<b>100,247.5</b>	<b>27,143</b>	

Source: NC Employment Security Commission and authors' calculations. Clusters are not mutually exclusive.

## Summary data, general benchmark clusters, Carolinas region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	Change '89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	43,662	40.7	4.6	2.1	0.92	0.04	1072	227	1,550.9	35,520
Packaged food products	9,461	115.4	1.0	-1.6	0.62	-0.20	82	1	293.4	31,008
Construction materials	31,343	29.5	3.3	3.9	1.04	0.16	1061	219	1,107.9	35,349
Printing and publishing	72,706	44.4	7.7	4.7	0.88	0.08	1638	768	2,785.3	38,309
Information technology and instruments	24,731	26.6	2.6	4.9	0.68	0.11	930	606	1,243.6	50,284
Chemicals and plastics	27,418	35.6	2.9	3.7	1.07	0.05	770	258	1,018.3	37,140
Apparel	57,887	103.6	6.1	-3.6	4.87	-1.21	559	-51	1,445.0	24,963
Motor vehicle manufacturing	33,227	91.8	3.5	3.9	1.25	0.14	362	88	1,137.7	34,240
Fabricated textiles	41,073	97.6	4.3	-3.3	3.37	-0.90	421	-72	991.7	24,144
Stone and clay products	3,282	126.2	0.3	4.3	1.17	0.31	26	10	133.7	40,754
Wood products	14,122	41.4	1.5	2.3	1.53	0.11	341	33	347.2	24,584
Primary nonferrous metals	4,749	18.1	0.5	3.0	0.89	0.05	263	62	178.5	37,584
Leather goods	381	47.7	0.0	1.6	0.52	0.20	8	-3	9.9	26,005
Tobacco products	s	s	s	s	s	s	s	s	s	s
Canned and bottled beverages	1,035	43.1	0.1	5.4	0.56	0.18	24	-3	44.8	43,291
Food oil mills	365	0.0	0.0	5.7	1.21	0.31	5	2	12.1	33,183
Aerospace	500	62.5	0.1	3.7	0.07	0.03	8	2	19.9	39,747
Petroleum products	s	s	s	s	s	s	s	s	s	s
Jewelry	s	s	s	s	s	s	s	s	s	s
Boat Building	1,201	46.2	0.1	0.9	0.65	0.09	26	2	66.7	55,555
Aluminum	1,509	83.8	0.2	-1.6	0.83	-0.07	18	8	73.9	48,996
Hospitals, labs, specialized medical services	52,370	38.5	5.5	7.4	0.85	0.12	1361	764	2,018.6	38,545
Platemaking and typesetting	842	25.5	0.1	-5.8	1.02	-0.96	33	-17	34.4	40,857
Securities and insurance	10,338	8.3	1.1	5.5	0.67	0.11	1240	472	410.3	39,688
Banking and advertising	38,618	24.6	4.1	9.9	1.26	0.50	1567	890	1,867.8	48,365
Legal services	5,147	7.6	0.5	6.6	0.59	0.16	678	160	227.8	44,250
Transportation, Shipping & Logistics	39,227	28.6	4.2	1.2	1.36	-0.30	1372	514	1,575.6	40,166
Pharmaceuticals	373	62.2	0.0	2.3	0.15	-0.01	6	0	13.7	36,639
Total Private Sector Employment	944,674	19.4		2.8			48,787	9,189	28,585.0	30,259

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive.

## Summary data, general benchmark clusters, Northeast region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	Change '89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	3,605	42.9	2.9	-0.9	0.58	-0.08	84	15	90.6	25,126
Packaged food products	4,581	111.7	3.7	0.5	2.31	-0.02	41	-3	80.6	17,605
Construction materials	3,200	23.0	2.6	-2.6	0.81	-0.32	139	20	83.4	26,050
Printing and publishing	5,045	42.0	4.1	2.0	0.47	-0.01	120	40	129.8	25,729
Information technology and instruments	208	5.9	0.2	51.4	0.04	0.04	35	30	7.0	33,622
Chemicals and plastics	5,157	46.0	4.2	5.9	1.54	0.36	112	55	196.8	38,162
Apparel	5,134	122.2	4.2	-5.8	3.30	-2.10	42	-17	105.4	20,529
Motor vehicle manufacturing	1,977	98.8	1.6	12.9	0.57	0.27	20	9	48.7	24,632
Fabricated textiles	3,142	78.6	2.5	-6.1	1.97	-1.66	40	-17	62.4	19,872
Stone and clay products	s	s	s	s	s	s	s	s	s	s
Wood products	3,906	27.1	3.2	-2.5	3.23	-1.10	144	-22	156.6	40,086
Primary nonferrous metals	259	16.2	0.2	14.0	0.37	0.19	16	5	7.7	29,795
Leather goods	s	s	s	s	s	s	s	s	s	s
Tobacco products	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Canned and bottled beverages	s	s	s	s	s	s	s	s	s	s
Food oil mills	s	s	s	s	s	s	s	s	s	s
Aerospace	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Petroleum products	s	s	s	s	s	s	s	s	s	s
Jewelry	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Boat Building	882	36.8	0.7	0.9	3.68	0.70	24	4	21.0	23,770
Aluminum	s	s	s	s	s	s	s	s	s	s
Hospitals, labs, specialized medical services	5,643	40.6	4.6	5.6	0.70	0.08	139	80	143.7	25,459
Platemaking and typesetting	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Securities and insurance	2,274	12.5	1.8	19.9	1.12	0.65	182	55	37.5	16,490
Banking and advertising	1,971	8.5	1.6	2.1	0.49	0.06	233	93	58.0	29,457
Legal services	490	4.2	0.4	2.2	0.43	0.04	117	4	10.5	21,481
Transportation, Shipping & Logistics	2,782	6.8	2.3	4.2	0.74	0.06	412	139	64.5	23,185
Pharmaceuticals	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
<b>Total Private Sector Employment</b>	<b>123,518</b>	<b>14.2</b>		<b>1.8</b>			<b>8,705</b>	<b>392</b>	<b>2,594.9</b>	<b>21,009</b>

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive. n/a: Not applicable.

## Summary data, general benchmark clusters, Piedmont Triad region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	'89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	33,481	53.1	4.6	2.5	0.91	0.11	631	130	1,078.4	32,211
Packaged food products	6,021	81.4	0.8	-2.4	0.52	-0.19	74	8	189.8	31,531
Construction materials	28,286	36.5	3.9	2.6	1.22	0.14	775	131	873.3	30,876
Printing and publishing	53,133	44.3	7.3	3.6	0.84	0.07	1199	497	1,675.0	31,525
Information technology and instruments	10,789	19.6	1.5	-1.5	0.39	-0.12	550	331	461.9	42,811
Chemicals and plastics	20,910	36.2	2.9	4.0	1.06	0.12	578	137	680.8	32,557
Apparel	64,535	125.8	8.9	-2.0	7.06	0.25	513	-1	1,774.8	27,501
Motor vehicle manufacturing	18,464	86.3	2.5	2.8	0.90	0.08	214	29	577.1	31,257
Fabricated textiles	35,300	92.9	4.9	-2.9	3.77	-0.50	380	-53	920.1	26,067
Stone and clay products	675	37.5	0.1	6.3	0.31	0.12	18	6	21.3	31,587
Wood products	19,220	56.2	2.6	-1.0	2.71	-0.46	342	23	440.9	22,938
Primary nonferrous metals	2,727	20.7	0.4	1.2	0.66	-0.01	132	21	87.4	32,058
Leather goods	477	34.1	0.1	-0.7	0.84	0.25	14	2	10.2	21,403
Tobacco products	9,374	0.0	1.3	-5.2	32.02	-18.07	9	-2	534.4	57,013
Canned and bottled beverages	2,045	93.0	0.3	1.3	1.43	0.22	22	1	122.1	59,695
Food oil mills	0	0.0	0.0	-11.1	0.00	s	0	s	0	n/a
Aerospace	225	56.3	0.0	s	0.04	s	4	s	12.8	56,713
Petroleum products	56	9.4	0.0	5.8	0.06	0.02	6	1	1.1	20,047
Jewelry	s	s	s	s	s	s	s	s	s	s
Boat Building	886	73.9	0.1	-4.6	0.63	-0.33	12	-2	42.0	47,414
Aluminum	649	81.2	0.1	79.8	0.47	0.42	8	3	20.8	32,104
Hospitals, labs, specialized medical services	37,614	38.2	5.2	4.7	0.80	0.04	985	488	1,095.0	29,110
Platemaking and typesetting	556	19.8	0.1	-1.9	0.88	-0.06	28	2	22.5	40,581
Securities and insurance	8,370	10.3	1.2	0.5	0.70	-0.10	813	285	277.1	33,111
Banking and advertising	19,855	19.1	2.7	4.9	0.84	0.21	1039	564	758.1	38,181
Legal services	3,561	5.8	0.5	1.6	0.53	0.02	617	125	126.9	35,636
Transportation, Shipping & Logistics	29,781	29.1	4.1	2.7	1.35	-0.04	1025	384	944.5	31,717
Pharmaceuticals	859	214.8	0.1	4.3	0.45	0.06	4	1	32.9	38,348
Total Private Sector Employment	725,461	20.1		2.1			36,029	4,325	19,652.7	27,090

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive. n/a: Not applicable.

## Summary data, general benchmark clusters, Research Triangle region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	Change '89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	17,039	47.7	2.2	1.2	0.44	-0.06	357	114	582.0	34,155
Packaged food products	7,523	132.0	1.0	0.5	0.61	-0.13	57	5	174.8	23,232
Construction materials	21,404	23.8	2.8	1.7	0.87	-0.09	900	277	788.3	36,830
Printing and publishing	75,886	41.3	9.9	8.8	1.13	0.23	1836	1081	3,084.6	40,648
Information technology and instruments	56,205	45.5	7.3	6.6	1.90	0.31	1234	871	2,865.4	50,981
Chemicals and plastics	12,017	21.0	1.6	7.2	0.58	0.08	571	249	419.2	34,886
Apparel	16,262	123.2	2.1	-3.7	1.68	-0.66	132	-6	399.9	24,591
Motor vehicle manufacturing	7,645	68.9	1.0	-2.0	0.35	-0.22	111	10	229.0	29,958
Fabricated textiles	11,034	95.9	1.4	-4.3	1.11	-0.68	115	-22	235.9	21,380
Stone and clay products	1,026	60.3	0.1	5.0	0.45	0.10	17	2	31.6	30,815
Wood products	7,687	29.7	1.0	4.3	1.02	0.10	259	40	202.9	26,390
Primary nonferrous metals	1,370	16.3	0.2	12.2	0.31	0.12	84	43	43.0	31,413
Leather goods	146	29.1	0.0	s	0.24	s	5	s	3.1	21,253
Tobacco products	1,223	0.0	0.2	-4.6	3.94	-2.61	7	0	32.6	26,658
Canned and bottled beverages	1,189	41.0	0.2	8.5	0.79	0.29	29	5	54.1	45,495
Food oil mills	s	s	s	s	s	s	s	s	s	s
Aerospace	301	60.1	0.0	s	0.05	s	5	s	13.9	46,071
Petroleum products	323	53.8	0.0	s	0.30	0.09	6	s	16.3	50,458
Jewelry	s	s	s	s	s	s	s	s	s	s
Boat Building	57	11.3	0.0	s	0.04	s	5	s	1.4	24,265
Aluminum	947	157.8	0.1	1.7	0.64	0.06	6	2	40.9	43,204
Hospitals, labs, specialized medical services	65,719	36.8	8.5	10.3	1.31	0.23	1784	1119	2,610.6	39,723
Platemaking and typesetting	320	14.6	0.0	6.8	0.48	0.17	22	-6	12.1	37,725
Securities and insurance	10,650	10.0	1.4	2.8	0.84	-0.10	1067	422	400.3	37,592
Banking and advertising	15,149	13.2	2.0	4.0	0.61	0.05	1145	682	580.1	38,292
Legal services	4,864	6.7	0.6	6.4	0.68	0.12	721	247	180.0	37,006
Transportation, Shipping & Logistics	18,149	21.7	2.4	7.2	0.77	0.07	835	338	546.5	30,109
Pharmaceuticals	8,892	404.2	1.2	5.2	4.38	0.13	22	6	546.0	61,404
Total Private Sector Employment	769,605	19.2		4.4			40,044	9,639	22,997.3	29,882

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive.

## Summary data, general benchmark clusters, Southeast region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	Change '89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	10,579	49.7	3.0	0.9	0.60	-0.06	213	52	299.1	28,272
Packaged food products	10,316	224.3	2.9	9.5	1.82	0.66	46	-1	234.2	22,699
Construction materials	8,247	24.3	2.3	-0.5	0.73	-0.19	339	72	250.0	30,311
Printing and publishing	22,388	53.9	6.4	4.9	0.73	0.05	415	194	725.0	32,382
Information technology and instruments	3,508	26.4	1.0	1.4	0.26	-0.03	133	87	104.3	29,720
Chemicals and plastics	13,555	48.8	3.8	4.4	1.42	0.07	278	125	594.4	43,850
Apparel	20,649	179.6	5.9	-3.6	4.65	-1.37	115	-37	466.6	22,595
Motor vehicle manufacturing	10,708	150.8	3.0	0.9	1.08	-0.18	71	22	411.9	38,468
Fabricated textiles	12,209	137.2	3.5	-4.3	2.68	-1.38	89	-39	250.6	20,522
Stone and clay products	s	s	s	s	s	s	s	s	s	s
Wood products	5,139	27.5	1.5	1.0	1.49	-0.12	187	-10	168.9	32,858
Primary nonferrous metals	644	12.4	0.2	13.1	0.32	0.14	52	21	19.3	29,946
Leather goods	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Tobacco products	s	s	s	s	s	s	s	s	s	s
Canned and bottled beverages	344	24.6	0.1	-3.8	0.50	-0.29	14	-10	12.4	35,948
Food oil mills	s	s	s	s	s	s	s	s	s	s
Aerospace	s	s	s	s	s	s	s	s	s	s
Petroleum products	s	s	s	s	s	s	s	s	s	s
Jewelry	s	s	s	s	s	s	s	s	s	s
Boat Building	191	8.3	0.1	s	0.28	s	23	s	4.8	24,895
Aluminum	278	92.7	0.1	s	0.41	s	3	s	15.5	55,722
Hospitals, labs, specialized medical services	19,934	47.6	5.7	8.0	0.87	0.11	419	245	644.1	32,311
Platemaking and typesetting	s	s	s	s	s	s	s	s	s	s
Securities and insurance	2,970	6.1	0.8	8.5	0.51	0.13	490	147	69.9	23,537
Banking and advertising	6,159	10.2	1.7	2.1	0.54	0.00	601	329	180.0	29,221
Legal services	1,631	4.6	0.5	5.7	0.50	0.10	358	80	42.7	26,200
Transportation, Shipping & Logistics	10,416	15.5	3.0	3.9	0.97	-0.05	671	234	272.0	26,115
Pharmaceuticals	s	s	s	s	s	s	s	s	s	s
<b>Total Private Sector Employment</b>	<b>352,386</b>	<b>17.2</b>		<b>3.5</b>			<b>20,526</b>	<b>3,258</b>	<b>8,226.4</b>	<b>23,345</b>

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive. n/a: Not applicable.



## Summary data, general benchmark clusters, Transpark region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector 1998	Annual % Change '89-'98	Location Quotien		1998	Change '89-'98	1998	Average wage
					1998	Change '89-'98				
Metalworking and industrial machinery	16,367	67.6	4.4	1.2	0.88	0.01	242	39	473.5	28,932
Packaged food products	11,092	151.9	3.0	3.9	1.87	0.36	73	-7	276.6	24,939
Construction materials	9,369	32.2	2.5	3.4	0.79	0.12	291	76	250.5	26,741
Printing and publishing	23,691	76.2	6.4	2.4	0.73	-0.01	311	107	732.3	30,908
Information technology and instruments	4,139	31.6	1.1	9.2	0.29	0.11	131	89	118.8	28,703
Chemicals and plastics	9,874	30.8	2.7	2.2	0.98	-0.02	321	134	353.7	35,825
Apparel	12,822	124.5	3.5	-5.0	2.75	-1.30	103	-45	303.6	23,678
Motor vehicle manufacturing	8,944	151.6	2.4	-0.9	0.86	-0.22	59	0	297.5	33,261
Fabricated textiles	7,233	74.6	2.0	-6.1	1.51	-1.34	97	-55	141.8	19,603
Stone and clay products	s	s	s	s	s	s	s	s	s	s
Wood products	3,758	19.6	1.0	0.3	1.04	-0.05	192	3	108.3	28,830
Primary nonferrous metals	436	12.1	0.1	-2.7	0.21	-0.11	36	4	13.1	30,092
Leather goods	s	s	s	s	s	s	s	s	s	s
Tobacco products	2,957	0.0	0.8	0.1	19.81	3.19	11	3	57.9	19,576
Canned and bottled beverages	1,187	45.7	0.3	3.3	1.63	0.43	26	-3	38.6	32,503
Food oil mills	144	0.0	0.0	4.3	1.22	0.27	5	1	3.9	27,430
Aerospace	477	119.3	0.1	s	0.17	s	4	s	17.0	35,610
Petroleum products	67	13.5	0.0	-8.4	0.13	-0.37	5	1	2.4	35,053
Jewelry	0	n/a	0.0	-11.1	0.00	s	0	s	0	n/a
Boat Building	3,131	68.1	0.8	-1.3	4.36	-0.12	46	0	100.8	32,208
Aluminum	s	s	s	s	s	s	s	s	s	s
Hospitals, labs, specialized medical services	19,983	47.9	5.4	3.9	0.83	-0.01	417	203	591.5	29,602
Platemaking and typesetting	s	s	s	s	s	s	s	s	s	s
Securities and insurance	2,362	4.9	0.6	4.6	0.39	0.06	482	101	43.5	18,417
Banking and advertising	7,571	13.4	2.0	1.4	0.63	0.02	563	282	261.4	34,531
Legal services	1,945	5.6	0.5	4.9	0.57	0.12	350	77	66.1	34,010
Transportation, Shipping & Logistics	8,721	12.9	2.4	0.7	0.77	-0.17	676	221	234.4	26,880
Pharmaceuticals	4,100	512.5	1.1	0.5	4.20	-0.74	8	3	173.9	42,415
Total Private Sector Employment	369,879	18.0		2.3			20,526	1,987	8,630.8	23,334

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive. n/a: Not applicable.

## Summary data, general benchmark clusters, Western region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotien		1998	'89-'98	1998	Average wage
					1998	'89-'98				
Metalworking and industrial machinery	19,420	53.5	4.8	2.4	0.94	0.11	363	80	583.3	30,038
Packaged food products	5,590	139.8	1.4	-0.9	0.85	-0.14	40	-11	127.9	22,886
Construction materials	16,541	29.1	4.1	2.1	1.27	0.11	568	71	433.8	26,227
Printing and publishing	27,000	49.4	6.6	2.7	0.76	0.02	547	241	836.6	30,984
Information technology and instruments	6,216	32.4	1.5	1.7	0.40	0.01	192	107	211.6	34,036
Chemicals and plastics	15,438	32.0	3.8	2.5	1.40	0.04	482	249	501.4	32,476
Apparel	30,408	123.6	7.5	-3.2	5.92	-0.70	246	-32	708.9	23,312
Motor vehicle manufacturing	15,173	101.8	3.7	1.0	1.32	-0.05	149	30	427.4	28,171
Fabricated textiles	18,902	105.0	4.6	-3.6	3.59	-0.89	180	-8	431.4	22,822
Stone and clay products	1,249	46.3	0.3	7.4	1.03	0.44	27	5	31.0	24,820
Wood products	23,717	85.0	5.8	-0.9	5.94	-0.93	279	41	626.1	26,398
Primary nonferrous metals	926	11.4	0.2	3.6	0.40	0.06	81	15	27.0	29,206
Leather goods	851	70.9	0.2	-4.7	2.66	-0.37	12	2	19.3	22,676
Tobacco products	0	0.0	0.0	-11.1	0.00	-0.01	0	-1	0	n/a
Canned and bottled beverages	s	s	s	s	s	s	s	s	s	s
Food oil mills	0	0.0	0.0	0.0	0.00	0.00	0	0	0	n/a
Aerospace	322	107.3	0.1	-7.4	0.10	-0.10	3	-2	12.8	39,654
Petroleum products	s	s	s	s	s	s	s	s	s	s
Jewelry	44	8.9	0.0	0.1	0.16	0.03	5	-3	0.9	19,253
Boat Building	861	78.3	0.2	-6.4	1.09	-1.19	11	0	25.2	29,263
Aluminum	s	s	s	s	s	s	s	s	s	s
Hospitals, labs, specialized medical services	24,854	39.6	6.1	4.3	0.94	0.03	627	362	733.1	29,495
Platemaking and typesetting	s	s	s	s	s	s	s	s	s	s
Securities and insurance	2,230	3.7	0.5	2.7	0.33	0.01	595	243	49.9	22,367
Banking and advertising	5,936	9.5	1.5	1.0	0.45	0.01	626	339	198.1	33,374
Legal services	1,848	4.9	0.5	3.7	0.49	0.09	381	77	54.0	29,218
Transportation, Shipping & Logistics	9,915	14.2	2.4	2.2	0.80	-0.05	696	228	279.4	28,181
Pharmaceuticals	s	s	s	s	s	s	s	s	s	s
<b>Total Private Sector Employment</b>	<b>407,722</b>	<b>16.9</b>		<b>2.0</b>			<b>24,098</b>	<b>2,483</b>	<b>9,560.4</b>	<b>23,448</b>

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines.

Clusters are not mutually exclusive. n/a: Not applicable.

### Summary data, technology benchmark clusters, North Carolina

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		Change		1998 (millions)	Average wage
					1998	'89-'98	1998	'89-'98		
Chemicals and plastics	53,923	41.1	1.5	4.1	1.12	0.13	1311	570	2,054.8	38,106
Information technology and instrum	104,420	35.1	2.8	4.5	0.86	0.09	2971	2048	4,945.7	47,363
Industrial machinery	21,464	71.1	0.6	1.3	1.06	0.00	302	73	769.9	35,870
Motor vehicle manufacturing	44,277	126.9	1.2	4.1	0.82	0.11	349	99	1,557.2	35,169
Aerospace	5,545	28.0	0.2	5.8	0.19	0.09	198	43	228.3	41,168
Household appliances	1,139	227.9	0.0	300.2	0.36	0.35	5	3	26.8	23,492
Communications services and softwa	63,660	15.3	1.7	10.0	0.66	0.11	4157	1047	3,071.0	48,241
Pharmaceuticals and medical techn	34,629	64.4	0.9	1.7	1.01	-0.07	538	183	1,451.5	41,915
Total Private Sector	3,693,244	18.6		2.8			198,715	31,273	100,247.5	27,143

Source: NC Employment Security Commission and authors' calculations. Clusters are not mutually exclusive.

### Summary data, technology benchmark clusters, Carolinas region

Clusters	Employment							Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		1998	Change '89-'98	1998 (millions)	Average wage	
					1998	'89-'98					
Chemicals and plastics	12,096	37.2	1.3	1.5	0.99	-0.06	325	115	548.2	45,318	
Information technology and instrume	23,309	27.3	2.5	5.2	0.75	0.11	853	585	1,185.0	50,840	
Industrial machinery	7,845	68.2	0.8	2.3	1.51	0.11	115	27	316.4	40,326	
Motor vehicle manufacturing	14,918	111.3	1.6	6.1	1.08	0.25	134	31	562.4	37,698	
Aerospace	1,561	26.5	0.2	4.2	0.21	0.09	59	7	60.5	38,779	
Household appliances	s	s	s	s	s	s	s	s	s	s	
Communications services and softwa	21,166	15.9	2.2	14.9	0.86	0.28	1332	722	1,124.8	53,144	
Pharmaceuticals and medical technc	2,609	24.8	0.3	5.7	0.30	0.05	105	38	84.6	32,434	
Total Private Sector	944,674	19.4		2.8			48,787	9,189	28,585.0	30,259	

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive.

### Summary data, technology benchmark clusters, Northeast region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		1998	Change '89-'98	1998 (millions)	Average wage
					1998	'89-'98				
Chemicals and plastics	2,910	43.4	2.4	33.6	1.81	1.31	67	42	104.8	36,007
Information technology and instrume	205	6.2	0.2	83.8	0.05	0.04	33	30	6.9	33,523
Industrial machinery	284	56.7	0.2	s	0.42	s	5	s	7.5	26,422
Motor vehicle manufacturing	823	137.2	0.7	7.0	0.46	0.15	6	2	21.2	25,795
Aerospace	s	s	s	s	s	s	s	s	s	s
Household appliances	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Communications services and softwa	450	4.7	0.4	8.8	0.14	0.03	95	50	12.6	28,068
Pharmaceuticals and medical technc	s	s	s	s	s	s	s	s	s	s
Total Private Sector	123,518	14.2		1.8			8,705	392	2,594.9	21,009

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.

### Summary data, technology benchmark clusters, Piedmont Triad region

Clusters	Employment							Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		1998	Change '89-'98	1998 (millions)	Average wage	
					1998	'89-'98					
Chemicals and plastics	13,306	58.4	1.8	4.3	1.41	0.25	228	56	486.3	36,546	
Information technology and instrume	14,266	27.7	2.0	0.2	0.60	-0.10	515	333	600.6	42,100	
Industrial machinery	3,428	67.2	0.5	0.5	0.86	-0.01	51	2	126.6	36,924	
Motor vehicle manufacturing	8,162	118.3	1.1	5.9	0.77	0.21	69	24	297.5	36,452	
Aerospace	788	17.1	0.1	10.6	0.14	0.08	46	12	27.6	34,955	
Household appliances	0	n/a	0.0	-11.1	0.00	s	0	s	0	n/a	
Communications services and softwa	6,628	8.5	0.9	0.6	0.35	-0.15	780	394	276.4	41,698	
Pharmaceuticals and medical technc	4,881	55.5	0.7	2.2	0.72	0.01	88	26	135.4	27,732	
Total Private Sector	725,461	20.1		2.1			36,029	4,325	19,652.7	27,090	

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.

### Summary data, technology benchmark clusters, Research Triangle region

Clusters	Employment							Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		1998	Change '89-'98	1998 (millions)	Average wage	
					1998	'89-'98					
Chemicals and plastics	10,223	47.8	1.3	7.5	1.02	0.20	214	105	350.4	34,274	
Information technology and instrume	55,244	46.8	7.2	6.7	2.18	0.27	1180	856	2,818.8	51,025	
Industrial machinery	3,042	89.5	0.4	0.8	0.72	-0.11	34	1	127.1	41,779	
Motor vehicle manufacturing	4,142	106.2	0.5	9.5	0.37	0.11	39	13	141.2	34,079	
Aerospace	357	19.8	0.0	-2.7	0.06	-0.01	18	3	16.8	46,979	
Household appliances	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a	
Communications services and softwa	27,775	28.1	3.6	11.1	1.39	0.16	990	-533	1,388.6	49,995	
Pharmaceuticals and medical technc	14,441	65.0	1.9	1.5	2.02	-0.44	222	76	792.6	54,890	
Total Private Sector	769,605	19.2		4.4			40,044	9,639	22,997.3	29,882	

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.

### Summary data, technology benchmark clusters, Southeast region

Clusters	Employment						Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		Change		1998 (millions)	Average wage
					1998	'89-'98	1998	'89-'98		
Chemicals and plastics	6,097	52.6	1.7	4.6	1.33	0.14	116	45	269.4	44,187
Information technology and instrume	1,801	15.7	0.5	8.2	0.15	0.04	115	80	56.9	31,572
Industrial machinery	2,957	89.6	0.8	6.5	1.52	0.40	33	18	74.3	25,123
Motor vehicle manufacturing	2,966	114.1	0.8	1.3	0.58	-0.06	26	13	89.3	30,101
Aerospace	s	s	s	s	s	s	s	s	s	s
Household appliances	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a
Communications services and softwa	4,032	12.4	1.1	17.2	0.44	0.15	324	145	159.5	39,563
Pharmaceuticals and medical technc	3,065	68.1	0.9	5.3	0.94	0.11	45	24	116.2	37,931
Total Private Sector	352,386	17.2		3.5			20,526	3,258	8,226.4	23,345

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.



### Summary data, technology benchmark clusters, Transpark region

Clusters	Employment								Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		Establishments		1998 (millions)	Average wage
					1998	'89-'98	1998	'89-'98		
Chemicals and plastics	3,984	28.3	1.1	0.8	0.83	-0.07	141	65	131.7	33,065
Information technology and instrume	2,926	25.7	0.8	5.7	0.24	0.05	114	78	92.2	31,503
Industrial machinery	1,893	111.3	0.5	-2.4	0.93	-0.34	17	5	60.1	31,757
Motor vehicle manufacturing	5,444	194.4	1.5	-0.9	1.01	-0.24	28	-2	178.9	32,855
Aerospace	239	23.9	0.1	30.8	0.08	0.06	10	6	8.1	33,906
Household appliances	1,135	283.8	0.3	n/a	3.62	3.62	4	4	26.7	23,501
Communications services and softwa	1,792	7.0	0.5	4.6	0.19	-0.01	257	115	52.8	29,481
Pharmaceuticals and medical technc	4,922	182.3	1.3	0.6	1.43	-0.19	27	2	196.3	39,883
Total Private Sector	369,879	18.0		2.3			20,526	1,987	8,630.8	23,334

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.

### Summary data, technology benchmark clusters, Western region

Clusters	Employment							Establishments		Payroll	
	1998	Per estab- lishment	% private sector	Annual % Change '89-'98	Location Quotier		1998	Change '89-'98	1998 (millions)	Average wage	
					1998	'89-'98					
Chemicals and plastics	5,306	24.1	1.3	2.5	1.00	0.07	220	142	164.0	30,912	
Information technology and instrume	6,670	41.4	1.6	-0.3	0.50	-0.11	161	86	185.4	27,791	
Industrial machinery	2,016	42.9	0.5	1.1	0.90	0.04	47	19	58.0	28,771	
Motor vehicle manufacturing	7,821	166.4	1.9	3.4	1.31	0.19	47	18	266.7	34,102	
Aerospace	1,151	21.7	0.3	0.8	0.36	0.10	53	10	38.8	33,739	
Household appliances	0	n/a	0.0	0.0	0.00	0.00	0	0	0	n/a	
Communications services and softwa	1,818	4.8	0.4	6.1	0.17	0.01	379	154	56.3	30,960	
Pharmaceuticals and medical technc	4,277	97.2	1.0	1.6	1.13	-0.03	44	14	113.3	26,482	
Total Private Sector	407,722	16.9		2.0			24,098	2,483	9,560.4	23,448	

Source: NC Employment Security Commission and authors' calculations. s indicates data suppressed to meet confidentiality guidelines. Clusters are not mutually exclusive. n/a: Not applicable.